DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required		MIL Illum.
Catalyst	P0420	Catalyst System Efficiency Below Threshold Bank 1	Ewma filtered normalized corrected Oxygen Storage Capacity (OSC) of catalyst, bank 1	<	1	Unitless	primary A/F commanded lambda	<=	1.09009	Unitless	Fast Init. Response / Response to Step Change modes: 3 samples over 2 trips Stabilized mode: 1 sample per trip	Once per driving cycle	1 Trip
							primary A/F commanded lambda	>=	0.8501	Unitless			
					EWMA normalized Oxygen Storage Capacity threshold: (a) / (b) (a) measured OSC bank 1		engine runs	=	TRUE	-			
							(						
			(see Look-Up-Table #P0420-5)	=	0.1 to 0.205	g	Deceleration Fuel Cut-Off (DFCO)	=	FALSE	-			
			Corrected OSC: ((a) - (b)) * (c) / (d)				for time	>=	3	sec			
			(a) Measured OSC bank 1				Vehicle speed	>=	4.350528278	mph			
			(b) O2 mass for OSC correction using Sec. O2 performance diag. results				engine speed	<=	3520	rpm			
			(c) Correction map for transition and delayed response time				engine speed	>=	1000	rpm			
			(d) compensation time for OSC correction using Sec. O2 performance diag. results				engine load @ full engine mode (see Look-Up-Table #P0420-4)	>=	12 to 19.992	%			
							(engine load of full engine mode / 2) @ half engine mode (see Look-Up-Table #P0420-4)	>=	12 to 19.992	%			
							for time	>=	3	sec			
							Ratio total charge to charge in cylinder	<	1.00024	Unitless			
							for time	>=	2	sec			
							Integrated air mass flow	>	60	g			
							measured ambient temperatuer	>=	-39.8	deg C			
							measured ambient pressure	>=	50	kPa			
							measured engine coolant temperature	>=	52.06	deg C			
							no transmission gear change	=	TRUE	-			
							for time	>=	2	sec			
							)						
							(						
							integrated exhaust gas mass flow after the following operation points are in the monitoring window bank 1	>	60	g			
							(						
							Change of exhaust gas mass flow bank 1: (a) - (b)	<=	6.944444444	g/sec			
							Change of exhaust gas mass flow bank 1: (a) - (b)	>=	-6.944444444	g/sec			
							(a) exhaust gas mass flow bank 1						
							(b) filtered exhaust gas mass flow bank 1						
							PT1 time constant		1.20029304	sec			
							Low window exhaust gas mass flow bank 1 (see Look-Up-Table #P0420-2)	<=	22.2222222222222 to 27.7777777777778	g/sec			
							Low window exhaust gas mass flow bank 1	>=	3.888888889	g/sec			
							Low window exhaust gas mass flow bank 1	>=	(a) - (b)				
							(a) minimum exhaust gas mass flow bank 1		3.888888889	g/sec			
							(b) offset exhaust gas mass flow bank 1 at tip-out		0.833333333	g/sec			
							for time	>=	3	sec			
							High window exhaust gas mass flow bank 1 (see Look-Up-Table #P0420-1)	<=	22.2222222222222 to 27.7777777777778	g/sec			
							High window exhaust gas mass flow bank 1	>=	3.888888889	g/sec			
							)						
							(						
							Modeled catalyst temperature gradient bank 1: (a) - (b)	<=	40.0078	deg C			
							Modeled catalyst temperature gradient bank 1: (a) - (b)	>=	-40.0078	deg C			
							(a) Modeled catalyst temperature bank 1						
							(b) filtered modeled catalyst temperature bank 1	=	4.9989321	sec			
							PT1 time constant						

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					Low window modeled catalyst temperature	<=	650.006	deg C		
					Low window Modeled catalyst temperature bank 1	>=	520.022	deg C		
					High window modeled catalyst temperature bank 1	<=	780.014	deg C		
					High window Modeled catalyst temperature bank 1	>=	600.014	deg C		
					Modeled catalyst temperature bank 1 after the first engine start and driving	>	420.06	deg C		
					for time	>=	12	sec		
					))					
					((					
					Integrated purge mass flow after a longer purge stop	>=	1.51	g		
					HC concentration factor in chacoal canister	<=	40	factor		
					relative fuel portion of canister purge to injected fuel mass : (a) / (b) (a) fuel mass supplied by canister purge control (b) fuel mass supplied by injection		0.200012	Unitless		
					OR					
					open loop canister purge control	=	TRUE	-		
					OR					
					canister purge control mass flow into the manifold	<=	5.555555556	g/sec		
					((					
					integrated exhaust gas mass flow bank 1 since engine start (see Look-Up-Table #P0420-3)	>	1600 to 2850	g		
					integrated exhaust gas mass flow bank 1 after the following sensors's readiness	>	40	g		
					(					
					Secondary O2 sensor readiness bank 1					
					Primary A/F sensor readiness bank 1					
					)					
						>=	299.991	deg C		
					temperature deviation of Primary A/F sensor heater control bank 1: (a) - (b)	<	64.9922	deg C		
					(a) primary A/F sensor temperature set point for heater control		800.006	deg C		
					(b) measured primary A/F sensor temperature for heater control					
					)					
					statemachine = sm					
					statemachine (sm =0) : inactive	=				
					a commanded lambda active	=	FALSE	-		
					primary A/F commanded lambda	=	1	Unitless		
					if the following conditions are met, sm moves to sm = 2					
					Secondary O2 sensor voltage bank1	>=	0.749512	V		
					if the following conditions are met, sm moves to sm = 1					
					Secondary O2 sensor voltage bank1	<	0.749512	V		
					Secondary O2 sensor voltage bank1	>=	0.450439	V		
					statemachine (sm=1) - rich mixture in catalyst	=	TRUE	-		
					a commanded lambda active	=	TRUE	-		
					primary A/F commanded lambda bank1	=	0.91992	Unitless		
					for time	>=	3	sec		
					for time	>=	0.2	sec		
					if the following conditions are met, sm moves to sm = 2					
					((					
					Secondary O2 sensor voltage gradient over 0.05s	>=	0.069	V/s		
					Secondary O2 sensor voltage bank1	>=	0.749512	V		
					)					
					OR					
					Secondary O2 sensor voltage bank1	>=	0.749512	V		
					)					
					Integrated exhaust mass flow bank 1	>=	0.12	g		
					if the following conditions are met, sm moves to sm = 3					
					(					
					Secondary O2 sensor voltage bank 1	>=	0.85083	V		
					OR					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					(					
					Secondary O2 sensor voltage bank 1	>=	0.749512	V		
					Secondary O2 sensor voltage gradient over 0.05s	<=	0.09944	V/s		
					Secondary O2 sensor voltage gradient over 0.05s	>=	-0.09944	V/s		
					Integrated Oxygen mass flow bank 1	>	0.15	g		
					))					
					(					
					Primary A/F sensor lambda bank 1	<=	(a) + (b)			
					(a) Primary lambda control set point bank 1	(a)				
					(b) maximum lambda deviation of lean mixture	(b)	0.05005	Unitless		
					Primary A/F sensor lambda bank 1	>=	(a) - (b)			
					(a) Primary lambda control set point					
					(b) maximum lambda deviation of rich mixture		0.05005	Unitless		
					for time	>=	0.2	sec		
					Integrated rich exhaust gas mass flow bank 1	>=	15	g		
					)					
					(					
					Secondary O2 sensor voltage bank 1	>	(a) + (b)			
					(a) minimum secondary O2 voltage					
					(b) Offset voltage of Secondary O2 sensor	=	0.030518	V		
					)					
					statemachine (sm=2) - Lean mixture in catalyst					
					a commanded lambda active	=	TRUE	-		
					primary A/F commanded lambda	=	1.08008	Unitless		
					for time	>=	3	sec		
					for time	>=	0.2	sec		
					if the following conditions are met, sm moves to sm = 4					
					((					
					Secondary O2 sensor voltage	<=	0.150146	V		
					for time	>=	0.1	sec		
					)					
					OR					
					(					
					Secondary O2 sensor voltage	<=	0.150146	V		
					Secondary O2 sensor voltage gradient over 0.05s	<=	0.09944	V/s		
					Secondary O2 sensor voltage gradient over 0.05s	>=	-0.09944	V/s		
					Integrated Oxygen mass flow bank 1	>	0.1	g		
					))					
					(					
					Primary A/F sensor lambda	<=	(a) + (b)			
					(a) Primary lambda control set point	(a)				
					(b) maximum lambda deviation of lean mixture	(b)	0.05005	Unitless		
					Primary A/F sensor lambda	>=	(a) - (b)			
					(a) Primary lambda control set point					
					(b) maximum lambda deviation of rich mixture		0.05005	Unitless		
					for time	>=	0.2	sec		
					Integrated lean exhaust gas mass flow bank 1	>=	15	g		
					)					
					statemachine (sm=3) - Lean mixture in catalyst	**=**	**TRUE**	-		
					a commanded lambda active bank 1	=	TRUE	-		
					primary A/F commanded lambda bank 1	=	1.08008	Unitless		
					for time	>=	3	sec		
					for time	>=	0.2	sec		
					if the following conditions are met, sm moves to sm = 4					
					(					
					Secondary O2 sensor voltage bank 1	<=	0.150146	V		
					for time	>=	0.1	sec		
					OR					
					(					
					Secondary O2 sensor voltage bank 1	<=	0.150146	V		
					Secondary O2 sensor voltage gradient over 0.05s	<=	0.09944	V/s		
					Secondary O2 sensor voltage gradient over 0.05s	>=	-0.09944	V/s		
					Integrated Oxygen mass flow bank 1	>	0.1	g		
					))					
					(					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Primary A/F sensor lambda bank 1	<= (a) + (b)		
					(a) Primary lambda control set point	(a)		
					(b) maximum lambda deviation of lean mixture	(b) 0.05005 Unitless		
					Primary A/F sensor lambda bank 1	>= (a) - (b)		
					(a) Primary lambda control set point			
					(b) maximum lambda deviation of rich mixture	0.05005 Unitless		
					for time	>= 0.2 sec		
					Integrated lean exhaust gas mass flow bank 1	>= 15 g		
					)			
					Measurement Oxygen Storage Capacity bank 1 with Secondary O2 sensor voltage bank 1 done	<= 0.200195 V		
					statemachine (sm=4) - Rich mixture in catalyst	= TRUE -		
					a commanded lambda active	= TRUE -		
					primary A/F commanded lambda	= 0.91992 Unitless		
					for time	>= 3 sec		
					for time	>= 0.2 sec		
					if the following conditions are met, sm moves to sm = 3			
					Measurement Oxygen Storage Capacity bank 1 starts			
					(			
					Secondary O2 sensor voltage bank 1	>= 0.85083 V		
					OR			
					(			
					Secondary O2 sensor voltage bank 1	>= 0.749512 V		
					Secondary O2 sensor voltage gradient over 0.05s	<= 0.09944 V/s		
					Secondary O2 sensor voltage gradient over 0.05s	>= -0.09944 V/s		
					Integrated Oxygen mass flow bank 1	> 0.15 g		
					))			
					(			
					Primary A/F sensor lambda bank 1	<= (a) + (b)		
					(a) Primary lambda control set point bank 1	(a)		
					(b) maximum lambda deviation of lean mixture	(b) 0.05005 Unitless		
					Primary A/F sensor lambda bank 1	>= (a) - (b)		
					(a) Primary lambda control set point			
					(b) maximum lambda deviation of rich mixture	0.05005 Unitless		
					for time	>= 0.2 sec		
					Integrated rich exhaust gas mass flow bank 1	>= 15 g		
					)			
					EWMA filter strategy			
					Fast initialization mode (FIR)	**= TRUE** -		
					EWMA filter initial value for FIR mode	= 1.6001 Unitless		
					EWMA filter constant	= 0.2400055 Unitless		
					Maximum number of samples per trip	= 2 counts		
					Total number of samples for FIR mode	= 4 counts		
					Response to Step Change mode (RSC)	**= TRUE** -		
					Response to Step Change mode inactive	= TRUE -		
					absolute difference : ABS((a) - (b))	> (b) * (c) -		
					(a) measured Oxygen Storage Capacity			
					(b) EWMA filtered normalized monitoring result			
					(c) Step change detection factor	0.40625 Unitless		
					EWMA filter constant	= 0.2400055 Unitless		
					Maximum number of samples per trip	= 2 number		
					Total number of samples for RSC mode	= 4 counts		
					EWMA filter constant	= 0.2400055 Unitless		
					Total number of samples for stablilized mode	= 1 counts		
					No pending or confirmed DTCs	= see sheet inhibit table -		
					Basic enable conditions met	= see sheet enable tables -		
	P0430	Catalyst System Efficiency Below Threshold Bank 2	Ewma filtered normalized corrected Oxygen Storage Capacity (OSC) of catalyst, bank 2	< 1 -	primary A/F commanded lambda	<= 1.09009 -	Fast Init. Response / Response to ... Once per driving cycle	1 Trip
					primary A/F commanded lambda	>= 0.8501 -		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
				EWMA normalized Oxygen Storage Capacity threshold: (a) / (b) (a) measured OSC bank 2	engine runs	=	TRUE	-	Step Change modes: 3 samples over 2 trips Stabilized mode: 1 sample per trip	
					(					
			(see Look-Up-Table #P0430-1)	= 0.1 to 0.205 g	Deceleration Fuel Cut-Off (DFCO)	=	FALSE	-		
					for time	>=	3	sec		
			Corrected OSC: ((a) - (b)) * (c) / (d) (a) Measured OSC bank 2 (b) O2 mass for OSC correction using Sec. O2 performance diag. results (c) Correction map for transition and delayed response time (d) compensation time for OSC correction using Sec. O2 performance diag. results		Vehicle speed	>=	4.350528278	mph		
					engine speed	<=	3520	rpm		
					engine speed	>=	1000	rpm		
					engine load @ full engine mode (see Look-Up-Table #P0420-4)	>=	12 to 19.992	%		
					(engine load of full engine mode / 2) @ half engine mode (see Look-Up-Table #P0420-4)	>=	12 to 19.992	%		
					for time	>=	3	sec		
					Ratio total charge to charge in cylinder	<	1.00024	-		
					for time	>=	2	sec		
					Integrated air mass flow	>	100	g		
					measured ambient temperatuer	>=	-39.8	deg C		
					measured ambient pressure	>=	50	kPa		
					measured engine coolant temperature	>=	52.06	deg C		
					no transmission gear change	=	TRUE	-		
					for time	>=	2	sec		
					)					
					(					
					integrated exhaust gas mass flow after the following operation points are in the monitoring window bank 2	>	100	g		
					(					
					Change of exhaust gas mass flow bank 2: (a) - (b)	<=	6.944444444	g/sec		
					Change of exhaust gas mass flow bank 2: (a) - (b)	>=	-6.944444444	g/sec		
					(a) exhaust gas mass flow bank 2 (b) filtered exhaust gas mass flow bank 2					
					PT1 time constant		1.20029304	sec		
					Low window exhaust gas mass flow bank 2 (see Look-Up-Table #P0420-2)	<=	22.222222222222 2 to 27.777777777777 8	g/sec		
					Low window exhaust gas mass flow bank 2	>=	3.888888889	g/sec		
					Low window exhaust gas mass flow bank 2	>=	(a) - (b)			
					(a) minimum exhaust gas mass flow bank 2		3.888888889	g/sec		
					(b) offset exhaust gas mass flow bank 2 at tip-out		0.833333333	g/sec		
					for time	>=	3	sec		
					High window exhaust gas mass flow bank 2 (see Look-Up-Table #P0420-1)	<=	22.222222222222 2 to 27.777777777777 8	g/sec		
					High window exhaust gas mass flow bank 2	>=	3.888888889	g/sec		
					)					
					(					
					Modeled catalyst temperature gradient bank 2: (a) - (b)	<=	40.0078	deg C		
					Modeled catalyst temperature gradient bank 2: (a) - (b)	>=	-40.0078	deg C		
					(a) Modeled catalyst temperature bank 2 (b) filtered modeled catalyst temperature bank 2 PT1 time constant	=	4.9989321	sec		
					Low window modeled catalyst temperature bank 2	<=	650.006	deg C		
					Low window Modeled catalyst temperature bank 2	>=	520.022	deg C		
					High window modeled catalyst temperature bank 2	<=	780.014	deg C		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					High window Modeled catalyst temperature bank 2	>= 600.014 deg C		
					Modeled catalyst temperature bank 2 after the first engine start and driving	> 420.06 deg C		
					for time	>= 12 sec		
					))			
					((			
					Integrated purge mass flow after a longer purge stop	>= 1.51 g		
					HC concentration factor in chacoal canister	<= 40 -		
					relative fuel portion of canister purge to injected fuel mass : (a) / (b) (a) fuel mass supplied by canister purge control (b) fuel mass supplied by injection	0.200012 -		
					OR			
					open loop canister purge control	= TRUE -		
					OR			
					canister purge control mass flow into the manifold	<= 5.555555556 g/sec		
					((			
					integrated exhaust gas mass flow bank 2 since engine start (see Look-Up-Table #P0420-3)	> 1600 to 2850 g		
					integrated exhaust gas mass flow bank 2 after the following sensors's readiness	> 40 g		
					(			
					Secondary O2 sensor readiness bank 2			
					Primary A/F sensor readiness bank 2			
					)			
						>= 299.991 deg C		
					temperature deviation of Primary A/F sensor heater control bank 2: (a) - (b)	< 64.9922 deg C		
					(a) primary A/F sensor temperature set point for heater control	800.006 deg C		
					(b) measured primary A/F sensor temperature for heater control			
					)			
					statemachine = sm			
					statemachine (sm =0) : inactive	=		
					a commanded lambda active	= FALSE -		
					primary A/F commanded lambda	= 1 -		
					if the following conditions are met, sm moves to sm = 2			
					Secondary O2 sensor voltage bank 2	>= 0.749512 V		
					if the following conditions are met, sm moves to sm = 1			
					Secondary O2 sensor voltage bank 2	< 0.749512 V		
					Secondary O2 sensor voltage bank 2	>= 0.450439 V		
					statemachine (sm=1) - rich mixture in catalyst	= TRUE -		
					a commanded lambda active	= TRUE -		
					primary A/F commanded lambda bank 2	= 0.91992 -		
					for time	>= 3 sec		
					for time	>= 0.2 sec		
					if the following conditions are met, sm moves to sm = 2			
					((			
					Secondary O2 sensor voltage gradient over 0.05s	>= 0.069 V/s		
					Secondary O2 sensor voltage bank 2	>= 0.749512 V		
					)			
					OR			
					Secondary O2 sensor voltage bank 2	>= 0.749512 V		
					)			
					Integrated exhaust mass flow bank 2	>= 0.12 g		
					if the following conditions are met, sm moves to sm = 3			
					(			
					Secondary O2 sensor voltage bank 2	>= 0.85083 V		
					OR			
					(			
					Secondary O2 sensor voltage bank 2	>= 0.749512 V		
					Secondary O2 sensor voltage gradient over 0.05s	<= 0.09944 V/s		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Secondary O2 sensor voltage gradient over 0.05s	>= -0.09944 V/s		
					Integrated Oxygen mass flow bank 2	> 0.15 g		
					))			
					(			
					Primary A/F sensor lambda bank 2	<= (a) + (b)		
					(a) Primary lambda control set point bank 2	(a)		
					(b) maximum lambda deviation of lean mixture	(b) 0.05005 -		
					Primary A/F sensor lambda bank 2	>= (a) - (b)		
					(a) Primary lambda control set point			
					(b) maximum lambda deviation of rich mixture	0.05005 -		
					for time	>= 0.2 sec		
					Integrated rich exhaust gas mass flow bank 2	>= 15 g		
					)			
					(			
					Secondary O2 sensor voltage bank 2	> (a) + (b)		
					(a) minimum secondary O2 voltage			
					(b) Offset voltage of Secondary O2 sensor	= 0.030518 V		
					)			
					statemachine (sm=2) - Lean mixture in catalyst			
					a commanded lambda active	= TRUE -		
					primary A/F commanded lambda	= 1.08008 -		
					for time	>= 3 sec		
					for time	>= 0.2 sec		
					if the following conditions are met, sm moves to sm = 4			
					((			
					Secondary O2 sensor voltage	<= 0.150146 V		
					for time	>= 0.1 sec		
					)			
					OR			
					(			
					Secondary O2 sensor voltage bank 2	<= 0.150146 V		
					Secondary O2 sensor voltage gradient over 0.05s	<= 0.09944 V/s		
					Secondary O2 sensor voltage gradient over 0.05s	>= -0.09944 V/s		
					Integrated Oxygen mass flow bank 2	> 0.1 g		
					))			
					(			
					Primary A/F sensor lambda	<= (a) + (b)		
					(a) Primary lambda control set point	(a)		
					(b) maximum lambda deviation of lean mixture	(b) 0.05005 -		
					Primary A/F sensor lambda	>= (a) - (b)		
					(a) Primary lambda control set point			
					(b) maximum lambda deviation of rich mixture	0.05005 -		
					for time	>= 0.2 sec		
					Integrated lean exhaust gas mass flow bank 2	>= 15 g		
					)			
					statemachine (sm=3) - Lean mixture in catalyst	**= TRUE** -		
					a commanded lambda active bank 2	= TRUE -		
					primary A/F commanded lambda bank 2	= 1.08008 -		
					for time	>= 3 sec		
					for time	>= 0.2 sec		
					if the following conditions are met, sm moves to sm = 4			
					(			
					Secondary O2 sensor voltage bank 2	<= 0.150146 V		
					for time	>= 0.1 sec		
					OR			
					(			
					Secondary O2 sensor voltage bank 2	<= 0.150146 V		
					Secondary O2 sensor voltage gradient over 0.05s	<= 0.09944 V/s		
					Secondary O2 sensor voltage gradient over 0.05s	>= -0.09944 V/s		
					Integrated Oxygen mass flow bank 2	> 0.1 g		
					))			
					(			
					Primary A/F sensor lambda bank 2	<= (a) + (b)		
					(a) Primary lambda control set point	(a)		
					(b) maximum lambda deviation of lean mixture	(b) 0.05005 -		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
							Primary A/F sensor lambda bank 2	>=	(a) - (b)			
							(a) Primary lambda control set point					
							(b) maximum lambda deviation of rich mixture		0.05005	-		
							for time	>=	0.2	sec		
							Integrated lean exhaust gas mass flow bank 2	>=	15	g		
							)					
							Measurement Oxygen Storage Capacity bank 2 with Secondary O2 sensor voltage bank 2 done	<=	0.200195	V		
							statemachine (sm=4) - Rich mixture in catalyst	=	TRUE	-		
							a commanded lambda active	=	TRUE	-		
							primary A/F commanded lambda	=	0.91992	-		
							for time	>=	3	sec		
							for time	>=	0.2	sec		
							if the following conditions are met, sm moves to sm = 3					
							Measurement Oxygen Storage Capacity bank 2 starts					
							(					
							Secondary O2 sensor voltage bank 2	>=	0.85083	V		
							OR					
							(					
							Secondary O2 sensor voltage bank 2	>=	0.749512	V		
							Secondary O2 sensor voltage gradient over 0.05s	<=	0.09944	V/s		
							Secondary O2 sensor voltage gradient over 0.05s	>=	-0.09944	V/s		
							Integrated Oxygen mass flow bank 2	>	0.15	g		
							))					
							(					
							Primary A/F sensor lambda bank 2	<=	(a) + (b)			
							(a) Primary lambda control set point bank 2	(a)				
							(b) maximum lambda deviation of lean mixture	(b)	0.05005	-		
							Primary A/F sensor lambda bank 2	>=	(a) - (b)			
							(a) Primary lambda control set point					
							(b) maximum lambda deviation of rich mixture		0.05005	-		
							for time	>=	0.2	sec		
							Integrated rich exhaust gas mass flow bank 2	>=	15	g		
							)					
							EWMA filter strategy					
							Fast initialization mode (FIR)	**=**	**TRUE**	-		
							EWMA filter initial value for FIR mode	=	1.6001	-		
							EWMA filter constant	=	0.2400055	-		
							Maximum number of samples per trip	=	2	counts		
							Total number of samples for FIR mode	=	4	counts		
							Response to Step Change mode (RSC)	**=**	TRUE	-		
							Response to Step Change mode inactive	=	TRUE	-		
							absolute difference : ABS((a) - (b))	>	(b) * (c)			
							(a) measured Oxygen Storage Capacity					
							(b) EWMA filtered normalized monitoring result					
							(c) Step change detection factor		0.40625	-		
							EWMA filter constant	=	0.2400055	-		
							Maximum number of samples per trip	=	2	counts		
							Total number of samples for RSC mode	=	4	counts		
							EWMA filter constant	=	0.2400055	-		
							Total number of samples for stablilized mode	=	1	counts		
							No pending or confirmed DTCs	=	see sheet inhibit table	-		
							Basic enable conditions met	=	see sheet enable tables	-		
Misfire	P0300	Indicates that the engine has experienced multiple cylinders misfiring, detected by a crankshaft angle delay that is too great, caused by a drop in the engine speed;	Method 1: Angular acceleration of crankshaft in transmission grip state (clutch is engaged), compared to threshold primarily used to detect single random misfire as well as single cylinder continuous misfire (see Look-Up Table #P0300-4)	>	100 to 1050	rad/s^2	Engine speed	≥	350	rpm	see Fault Paths 1-3 below	see Fault Paths 1-3 below
			OR				Engine speed	≤	6000	rpm		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
			Method 1: Angular acceleration of crankshaft in transmission slip state (clutch is slipping), compared to threshold primarily used to detect single random misfire as well as single cylinder continuous misfire (see Look-Up Table #P0300-10)	>	100 to 1050	rad/s^2						
			OR				Engine coolant temperature at engine start	>	-3549.94	deg C		
			Method 1: Angular acceleration of crankshaft in transmission open state (clutch is disengaged), compared to threshold primarily used to detect single random misfire as well as single cylinder continuous misfire (see Look-Up Table #P0300-7)	>	100 to 1050	rad/s^2	OR					
			OR				[Engine coolant temperature at engine start	<	-3549.94	deg C		
			Method 1: Angular acceleration of crankshaft in idle state, compared to threshold primarily used to detect single random misfire as well as single cylinder continuous misfire (see Look-Up Table #P0300-1)	>	95 to 180	rad/s^2	then monitoring enabled					
			OR				Engine coolant temperature]	>	-3549.94	deg C		
			Method 1: Angular acceleration of crankshaft in half-engine mode state, compared to threshold primarily used to detect single random misfire as well as single cylinder continuous misfire (see Look-Up Table #P0300-14)	>	66 to 2047.938	rad/s^2	Zero torque detection is not active	=	TRUE	-		
			OR				means					
			Method 1: Angular acceleration of crankshaft in catalyst heating, compared to threshold primarily used to detect single random misfire as well as single cylinder continuous misfire (see Look-Up Table #P0300-15)	>	175 to 550	rad/s^2	[Normalized inner engine torque	>	[A] + [B] + [C]	%		
			OR				OR					
			Method 2: Angular acceleration of crankshaft corrected for cylinders sharing same sensor wheel segments in transmission grip state (clutch is engaged), compared to threshold primarily used to detect single cylinder continuous and select paired cylinder continuous misfires in a non-adapted system	>	2047.938	rad/s^2	Normalized inner engine torque	>	[D] + [B] + [C]	%		
			OR				OR					
			Method 2: Angular acceleration of crankshaft corrected for cylinders sharing same sensor wheel segments in transmission slip state (clutch is slipping), compared to threshold primarily used to detect single cylinder continuous and select paired cylinder continuous misfires in a non-adapted system	>	2047.938	rad/s^2	Normalized inner engine torque	>	[E] + [B] + [C]	%		
			OR				OR			%		
			Method 2: Angular acceleration of crankshaft corrected for cylinders sharing same sensor wheel segments in transmission open state (clutch is disengaged), compared to threshold primarily used to detect single cylinder continuous and select paired cylinder continuous misfires in a non-adapted system	>	2047.938	rad/s^2	Normalized inner engine torque	>	[F] + [B] + [C]	%		
			OR				where					
			Method 2: Angular acceleration of crankshaft corrected for cylinders sharing same sensor wheel segments in idle state, compared to threshold primarily used to detect single cylinder continuous and select paired cylinder continuous misfires in a non-adapted system	>	2047.938	rad/s^2	[A] Threshold zero torque, driving state (see Look-Up Table #P0300-20)	=	5.32074 to 16.0797	%		
			OR				[B] Map for zero torque correction, engine speed and altitude dependant	=	0	%		
			Method 2: Angular acceleration of crankshaft corrected for cylinders sharing same sensor wheel segments in half-engine mode state, compared to threshold primarily used to detect single cylinder continuous and select paired cylinder continuous misfires in a non-adapted system	>	2047.938	rad/s^2	[C] Map for zero torque correction, engine speed and engine temperature dependant	=	0	%		
							[D] Threshold zero torque, idle state (see Look-Up Table #P0300-23)]	=	5.32074 to 10.0906	%		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
			Method 2: Angular acceleration of crankshaft corrected for cylinders sharing same sensor wheel segments in catalyst heating, compared to threshold primarily used to detect single cylinder continuous and select paired cylinder continuous misfires in a non-adapted system	>	2047.938	rad/s^2	[E] Threshold zero torque, half-engine mode state, driving (see Look-Up Table #P0300-24	=	2.00043 to 5.90057	%		
			OR				[F] Threshold zero torque, half-engine mode state, idle (see Look-Up Table #P0300-25	=	2.00043 to 5.90057	%		
			Method 3: Filtered angular acceleration of crankshaft in transmission grip state (clutch is engaged), compared to threshold primarily used to detect various forms of single cylinder and multiple cylinder continuous misfires (see Look-Up Table #P0300-5)	>	[A]+[B]	rad/s^2	Overrun/fuel cut-off is not active	=	TRUE	-		
			where				(Combustion delay after engine start has completed means	=	TRUE	-		
			[A] Base continuous misfire threshold in the transmission grip state	=	60 to 815	rad/s^2						
			[B] Smallest (negative) angular acceleration value from a non-misfiring cylinder; limited depending on operating point	=	measured parameter	rad/s^2	[Engine speed	>	500	rpm		
			OR				for					
			Method 3: Filtered angular acceleration of crankshaft in transmission slip state (clutch is slipping), compared to threshold primarily used to detect various forms of single cylinder and multiple cylinder continuous misfires (see Look-Up Table #P0300-11)	>	[A]+[B]	rad/s^2	Number of combustions]	=	0	-		
			where				OR					
			[A] Base continuous misfire threshold in the transmission slip state	=	60 to 815	rad/s^2	[Engine has re-started (start-stop)	=	TRUE	-		
			[B] Smallest (negative) angular acceleration value from a non-misfiring cylinder; limited depending on operating point	=	measured parameter	rad/s^2	means					
			OR				Number of combustions after re-startl)	=	8	-		
			Method 3: Filtered angular acceleration of crankshaft in transmission open state (clutch is disengaged), compared to threshold primarily used to detect various forms of single cylinder and multiple cylinder continuous misfires (see Look-Up Table #P0300-8)	>	[A]+[B]	rad/s^2	Calculated EPM segment time is valid	=	TRUE	-		
			where				No pending or confirmed DTCs	=	see sheet inhibit tables	-		
			[A] Base continuous misfire threshold in the transmission open state	=	60 to 815	rad/s^2	Basic enable conditions met	=	see sheet enable tables	-		
			[B] Smallest (negative) angular acceleration value from a non-misfiring cylinder; limited depending on operating point	=	measured parameter	rad/s^2						
			OR									
			Method 3: Filtered angular acceleration of crankshaft in idle state, compared to threshold primarily used to detect various forms of single cylinder and multiple cylinder continuous misfires (see Look-Up Table #P0300-2)	>	[A]+[B]	rad/s^2						
			where									
			[A] Base continuous misfire threshold in the transmission idle state	=	75 to 135	rad/s^2						
			[B] Smallest (negative) angular acceleration value from a non-misfiring cylinder; limited depending on operating point	=	measured parameter	rad/s^2						
			OR									
			Method 3: Filtered angular acceleration of crankshaft in half-engine mode state, compared to threshold primarily used to detect various forms of single cylinder and multiple cylinder continuous misfires (see Look-Up Table #P0300-18)	>	[A]+[B]	rad/s^2						
			where									
			[A] Base continuous misfire threshold in the half-engine mode state	=	60 to 2047.938	rad/s^2						
			[B] Smallest (negative) angular acceleration value from a non-misfiring cylinder; limited depending on operating point	=	measured parameter	rad/s^2						
			OR									
			Method 3: Filtered angular acceleration of crankshaft in catalyst heating state, compared to threshold primarily used to detect various forms of single cylinder and multiple cylinder continuous misfires (see Look-Up Table #P0300-19)	>	[A]+[B]	rad/s^2						

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions	Time Required			MIL Illum.
			where									
			[A] Base continuous misfire threshold in catalyst heating state	=	250 to 335	rad/s^2						
			[B] Smallest (negative) angular acceleration value from a non-misfiring cylinder; limited depending on operating point	=	measured parameter	rad/s^2						
			where									
		Fault Path 1: Emission relevant misfire rate within first 1000 crankshaft revolutions after engine start	Total misfire counts across all cylinders within first test frame outside of catalyst heating	>	71	-			1000	revs	once per drive cycle	2 Trip (with similar conditions healing)
			OR									
			Total misfire counts across all cylinders within first test frame during catalyst heating	>	71	-						
			and/or									
			Total misfire counts for cylinder 1 within test frame	>	[A] x [B]	-						
			where									
			[A] Total misfire counts across all cylinders within test frame	=	measured parameter	-						
			[B] Minimum ratio of misfire sum for multiple cylinder fault code	=	10.00061	%						
			and/or									
			Total misfire counts for cylinder 2 within test frame	>	[A] x [B]	-						
			where									
			[A] Total misfire counts across all cylinders within test frame	=	measured parameter	-						
			[B] Minimum ratio of misfire sum for multiple cylinder fault code	=	10.00061	%						
			and/or									
			Total misfire counts for cylinder 3 within test frame	>	[A] x [B]	-						
			where									
			[A] Total misfire counts across all cylinders within test frame	=	measured parameter	-						
			[B] Minimum ratio of misfire sum for multiple cylinder fault code	=	10.00061	%						
			and/or									
			Total misfire counts for cylinder 4 within test frame	>	[A] x [B]	-						
			where									
			[A] Total misfire counts across all cylinders within test frame	=	measured parameter	-						
			[B] Minimum ratio of misfire sum for multiple cylinder fault code	=	10.00061	%						
			and/or									
			Total misfire counts for cylinder 5 within test frame	>	[A] x [B]	-						
			where									
			[A] Total misfire counts across all cylinders within test frame	=	measured parameter	-						
			[B] Minimum ratio of misfire sum for multiple cylinder fault code	=	10.00061	%						
			and/or									
			Total misfire counts for cylinder 6 within test frame	>	[A] x [B]	-						
			where									
			[A] Total misfire counts across all cylinders within test frame	=	measured parameter	-						
			[B] Minimum ratio of misfire sum for multiple cylinder fault code	=	10.00061	%						
			and/or									
			Total misfire counts for cylinder 7 within test frame	>	[A] x [B]	-						
			where									
			[A] Total misfire counts across all cylinders within test frame	=	measured parameter	-						
			[B] Minimum ratio of misfire sum for multiple cylinder fault code	=	10.00061	%						
			and/or									
			Total misfire counts for cylinder 8 within test frame	>	[A] x [B]	-						
			where									
			[A] Total misfire counts across all cylinders within test frame	=	measured parameter	-						
			[B] Minimum ratio of misfire sum for multiple cylinder fault code	=	10.00061	%						
			with									
			[One test frame defined by:									
			Total number of crankshaft revolutions in first test frame specific to emission relevant misfire rate at engine start	=	1000	revolutions						
			OR									

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
		Fault Path 2: Emission relevant misfire rate after the first 1000 crankshaft revolutions	Total misfire counts across all cylinders within test frame	>	71	-			4 intervals of 1000 revs continuous	2 Trip (with similar conditions healing)
			and/or Total misfire counts for cylinder 1 within test frame	>	[A] x [B]	-				
			where [A] Total misfire counts across all cylinders within test frame	=	measured parameter	-				
			[B] Minimum ratio of misfire sum for multiple cylinder fault code	=	10.00061	%				
			and/or Total misfire counts for cylinder 2 within test frame	>	[A] x [B]	-				
			where [A] Total misfire counts across all cylinders within test frame	=	measured parameter	-				
			[B] Minimum ratio of misfire sum for multiple cylinder fault code	=	10.00061	%				
			and/or Total misfire counts for cylinder 3 within test frame	>	[A] x [B]	-				
			where [A] Total misfire counts across all cylinders within test frame	=	measured parameter	-				
			[B] Minimum ratio of misfire sum for multiple cylinder fault code	=	10.00061	%				
			and/or Total misfire counts for cylinder 4 within test frame	>	[A] x [B]	-				
			where [A] Total misfire counts across all cylinders within test frame	=	measured parameter	-				
			[B] Minimum ratio of misfire sum for multiple cylinder fault code	=	10.00061	%				
			and/or Total misfire counts for cylinder 5 within test frame	>	[A] x [B]	-				
			where [A] Total misfire counts across all cylinders within test frame	=	measured parameter	-				
			[B] Minimum ratio of misfire sum for multiple cylinder fault code	=	10.00061	%				
			and/or Total misfire counts for cylinder 6 within test frame	>	[A] x [B]	-				
			where [A] Total misfire counts across all cylinders within test frame	=	measured parameter	-				
			[B] Minimum ratio of misfire sum for multiple cylinder fault code	=	10.00061	%				
			and/or Total misfire counts for cylinder 7 within test frame	>	[A] x [B]	-				
			where [A] Total misfire counts across all cylinders within test frame	=	measured parameter	-				
			[B] Minimum ratio of misfire sum for multiple cylinder fault code	=	10.00061	%				
			and/or Total misfire counts for cylinder 8 within test frame	>	[A] x [B]	-				
			where [A] Total misfire counts across all cylinders within test frame	=	measured parameter	-				
			[B] Minimum ratio of misfire sum for multiple cylinder fault code	=	10.00061	%				
			with [One test frame defined by: Total number of crankshaft revolutions in test frame for emission relevant misfire rate	=	1000	revolutions				
			Misfire test frame counter]	=	4	-				
		Fault Path 3: Catalyst damaging misfire rate	OR Weighted misfire counter for exhaust bank	>	2688	counts			immediately after catalyst damaging misfire rate is exceeded - continuous	1 Trip Blinking MIL (with similar conditions healing)
			OR Weighted misfire counter for exhaust bank during first interval after engine start	>	2688	counts				
			and/or							

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
			Total weighted misfire counts for cylinder 1 within test frame	≥	[A] x [B]	-				
			where							
			[A] Total weighted misfire counts per exhaust bank within test frame	=	measured parameter	-				
			[B] Minimum ratio of weighted misfire sum for multiple cylinder fault code	=	10.00061	%				
			and/or							
			Total weighted misfire counts for cylinder 2 within test frame	≥	[A] x [B]	-				
			where							
			[A] Total weighted misfire counts per exhaust bank within test frame	=	measured parameter	-				
			[B] Minimum ratio of weighted misfire sum for multiple cylinder fault code	=	10.00061	%				
			and/or							
			Total weighted misfire counts for cylinder 3 within test frame	≥	[A] x [B]	-				
			where							
			[A] Total weighted misfire counts per exhaust bank within test frame	=	measured parameter	-				
			[B] Minimum ratio of weighted misfire sum for multiple cylinder fault code	=	10.00061	%				
			and/or							
			Total weighted misfire counts for cylinder 4 within test frame	≥	[A] x [B]	-				
			where							
			[A] Total weighted misfire counts per exhaust bank within test frame	=	measured parameter	-				
			[B] Minimum ratio of weighted misfire sum for multiple cylinder fault code	=	10.00061	%				
			and/or							
			Total weighted misfire counts for cylinder 5 within test frame	≥	[A] x [B]	-				
			where							
			[A] Total weighted misfire counts per exhaust bank within test frame	=	measured parameter	-				
			[B] Minimum ratio of weighted misfire sum for multiple cylinder fault code	=	10.00061	%				
			and/or							
			Total weighted misfire counts for cylinder 6 within test frame	≥	[A] x [B]	-				
			where							
			[A] Total weighted misfire counts per exhaust bank within test frame	=	measured parameter	-				
			[B] Minimum ratio of weighted misfire sum for multiple cylinder fault code	=	10.00061	%				
			and/or							
			Total weighted misfire counts for cylinder 7 within test frame	≥	[A] x [B]	-				
			where							
			[A] Total weighted misfire counts per exhaust bank within test frame	=	measured parameter	-				
			[B] Minimum ratio of weighted misfire sum for multiple cylinder fault code	=	10.00061	%				
			and/or							
			Total weighted misfire counts for cylinder 8 within test frame	≥	[A] x [B]	-				
			where							
			[A] Total weighted misfire counts per exhaust bank within test frame	=	measured parameter	-				
			[B] Minimum ratio of weighted misfire sum for multiple cylinder fault code	=	10.00061	%				
			with							
			[One test frame defined by:							
			Total number of crankshaft revolutions in test frame for catalyst damaging misfire	=	200	revolutions				
			OR							
			Total number of crankshaft revolutions in first test frame after engine start for catalyst damaging misfire	=	[A] x [B]	revolutions				
			[A] Total number of crankshaft revolutions in test frame for catalyst damaging misfire	=	200	revolutions				
			[B] Test frame extension factor for first interval after engine start]	=	1	-				

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
Misfire	P0301	Indicates that the engine has experienced cylinder 1 misfiring, detected by a crankshaft angle delay that is too great, caused by a drop in the engine speed	Method 1: Angular acceleration of crankshaft in transmission grip state (clutch is engaged), compared to threshold primarily used to detect single random misfire as well as single cylinder continuous misfire (see Look-Up Table #P0300-4)	>	100 to 1050	rad/s^2	Engine speed	≥	350	rpm	see Fault Paths 1-3 below	
			OR				Engine speed	≤	6000	rpm		
			Method 1: Angular acceleration of crankshaft in transmission slip state (clutch is slipping), compared to threshold primarily used to detect single random misfire as well as single cylinder continuous misfire (see Look-Up Table #P0300-10)	>	100 to 1050	rad/s^2						
			OR				Engine coolant temperature at engine start	>	-3549.94	deg C		
			Method 1: Angular acceleration of crankshaft in transmission open state (clutch is disengaged), compared to threshold primarily used to detect single random misfire as well as single cylinder continuous misfire (see Look-Up Table #P0300-7)	>	100 to 1050	rad/s^2	OR					
			OR				[Engine coolant temperature at engine start	<	-3549.94	deg C		
			Method 1: Angular acceleration of crankshaft in idle state, compared to threshold primarily used to detect single random misfire as well as single cylinder continuous misfire (see Look-Up Table #P0300-1)	>	95 to 180	rad/s^2	then monitoring enabled					
			OR				Engine coolant temperature]	>	-3549.94	deg C		
			Method 1: Angular acceleration of crankshaft in half-engine mode state, compared to threshold primarily used to detect single random misfire as well as single cylinder continuous misfire (see Look-Up Table #P0300-14)	>	66 to 2047.938	rad/s^2	Zero torque detection is not active	=	TRUE	-		
			OR				means					
			Method 1: Angular acceleration of crankshaft in catalyst heating, compared to threshold primarily used to detect single random misfire as well as single cylinder continuous misfire (see Look-Up Table #P0300-15)	>	175 to 550	rad/s^2	[Normalized inner engine torque	>	[A] + [B] + [C]	%		
			OR				OR					
			Method 2: Angular acceleration of crankshaft corrected for cylinders sharing same sensor wheel segments in transmission grip state (clutch is engaged), compared to threshold primarily used to detect single cylinder continuous and select paired cylinder continuous misfires in a non-adapted system	>	2047.938	rad/s^2	Normalized inner engine torque	>	[D] + [B] + [C]	%		
			OR				OR					
			Method 2: Angular acceleration of crankshaft corrected for cylinders sharing same sensor wheel segments in transmission slip state (clutch is slipping), compared to threshold primarily used to detect single cylinder continuous and select paired cylinder continuous misfires in a non-adapted system	>	2047.938	rad/s^2	Normalized inner engine torque	>	[E] + [B] + [C]	%		
			OR				OR			%		
			Method 2: Angular acceleration of crankshaft corrected for cylinders sharing same sensor wheel segments in transmission open state (clutch is disengaged), compared to threshold primarily used to detect single cylinder continuous and select paired cylinder continuous misfires in a non-adapted system	>	2047.938	rad/s^2	Normalized inner engine torque	>	[F] + [B] + [C]	%		
			OR				where					
			Method 2: Angular acceleration of crankshaft corrected for cylinders sharing same sensor wheel segments in idle state, compared to threshold primarily used to detect single cylinder continuous and select paired cylinder continuous misfires in a non-adapted system	>	2047.938	rad/s^2	[A] Threshold zero torque, driving state (see Look-Up Table #P0300-20)	=		%		
			OR				[B] Map for zero torque correction, engine speed and altitude dependant	=	5.32074 to 16.0797 0	%		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
			Method 2: Angular acceleration of crankshaft corrected for cylinders sharing same sensor wheel segments in half-engine mode state, compared to threshold primarily used to detect single cylinder continuous and select paired cylinder continuous misfires in a non-adapted system	>	2047.938	rad/s^2	[C] Map for zero torque correction, engine speed and engine temperature dependant	=	0	%		
							[D] Threshold zero torque, idle state (see Look-Up Table #P0300-23)]	=	5.32074 to 10.0906	%		
			Method 2: Angular acceleration of crankshaft corrected for cylinders sharing same sensor wheel segments in catalyst heating, compared to threshold primarily used to detect single cylinder continuous and select paired cylinder continuous misfires in a non-adapted system	>	2047.938	rad/s^2	[E] Threshold zero torque, half-engine mode state, driving (see Look-Up Table #P0300-24	=	2.00043 to 5.90057	%		
			OR				[F] Threshold zero torque, half-engine mode state, idle (see Look-Up Table #P0300-25	=	2.00043 to 5.90057	%		
			Method 3: Filtered angular acceleration of	>	[A]+[B]	rad/s^2	Overrun/fuel cut-off is not active	=	TRUE	-		
			where				(Combustion delay after engine start has completed	=	TRUE	-		
			[A] Base continuous misfire threshold in the transmission grip state	=	60 to 815	rad/s^2	means					
			[B] Smallest (negative) angular acceleration value from a non-misfiring cylinder; limited depending on operating point	=	measured parameter	rad/s^2	[Engine speed	>	500	rpm		
			OR				for					
			Method 3: Filtered angular acceleration of crankshaft in transmission slip state (clutch is slipping), compared to threshold primarily used to detect various forms of single cylinder and multiple cylinder continuous misfires (see Look-Up Table #P0300-11)	>	[A]+[B]	rad/s^2	Number of combustions]	=	0	-		
			where				OR					
			[A] Base continuous misfire threshold in the transmission slip state	=	60 to 815	rad/s^2	[Engine has re-started (start-stop)	=	TRUE	-		
			[B] Smallest (negative) angular acceleration value from a non-misfiring cylinder; limited depending on operating point	=	measured parameter	rad/s^2	means					
			OR				Number of combustions after re-start])	=	8	-		
			Method 3: Filtered angular acceleration of crankshaft in transmission open state (clutch is disengaged), compared to threshold primarily used to detect various forms of single cylinder and multiple cylinder continuous misfires (see Look-Up Table #P0300-8)	>	[A]+[B]	rad/s^2	Calculated EPM segment time is valid	=	TRUE	-		
			where				No pending or confirmed DTCs	=	see sheet inhibit tables	-		
			[A] Base continuous misfire threshold in the transmission open state	=	60 to 815	rad/s^2	Basic enable conditions met	=	see sheet enable tables	-		
			[B] Smallest (negative) angular acceleration value from a non-misfiring cylinder; limited depending on operating point	=	measured parameter	rad/s^2						
			OR									
			Method 3: Filtered angular acceleration of crankshaft in idle state, compared to threshold primarily used to detect various forms of single cylinder and multiple cylinder continuous misfires (see Look-Up Table #P0300-2)	>	[A]+[B]	rad/s^2						
			where									
			[A] Base continuous misfire threshold in the transmission idle state	=	75 to 135	rad/s^2						
			[B] Smallest (negative) angular acceleration value from a non-misfiring cylinder; limited depending on operating point	=	measured parameter	rad/s^2						
			OR									
			Method 3: Filtered angular acceleration of crankshaft in half-engine mode state, compared to threshold primarily used to detect various forms of single cylinder and multiple cylinder continuous misfires (see Look-Up Table #P0300-18)	>	[A]+[B]	rad/s^2						
			where									
			[A] Base continuous misfire threshold in the half-engine mode state	=	60 to 2047.938	rad/s^2						
			[B] Smallest (negative) angular acceleration value from a non-misfiring cylinder; limited depending on operating point	=	measured parameter	rad/s^2						
			OR									

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions	Time Required			MIL Illum.
			Method 3: Filtered angular acceleration of crankshaft in catalyst heating state, compared to threshold primarily used to detect various forms of single cylinder and multiple cylinder continuous misfires (see Look-Up Table #P0300-19)	>	[A]+[B]	rad/s^2						
			where									
			[A] Base continuous misfire threshold in catalyst heating state	=	250 to 335	rad/s^2						
			[B] Smallest (negative) angular acceleration value from a non-misfiring cylinder; limited depending on operating point	=	measured parameter	rad/s^2						
			where									
		Fault Path 1: Emission relevant misfire rate within first 1000 crankshaft revolutions after engine start	Total misfire counts across all cylinders within first test frame outside of catalyst heating	>	71	-			1000	revs	once per drive cycle	2 Trip (with similar conditions healing)
			OR									
			Total misfire counts across all cylinders within first test frame during catalyst heating	>	71	-						
			and/or									
			Total misfire counts for cylinder 1 within test frame	>	[A] x [B]	-						
			where									
			[A] Total misfire counts across all cylinders within test frame	=	measured parameter	-						
			[B] Minimum ratio of misfire sum for cylinder-individual fault code	=	12.5	%						
			with									
			[One test frame defined by:									
			Total number of crankshaft revolutions in first test frame specific to emission relevant misfire rate at engine start	=	1000	revolutions						
			OR									
		Fault Path 2: Emission relevant misfire rate after the first 1000 crankshaft revolutions	Total misfire counts across all cylinders within test frame	>	71	-			4 intervals of 1000	revs	continuous	2 Trip (with similar conditions healing)
			and/or									
			Total misfire counts for cylinder 1 within test frame	>	[A] x [B]	-						
			where									
			[A] Total misfire counts across all cylinders within test frame	=	measured parameter	-						
			[B] Minimum ratio of misfire sum for cylinder-individual fault code	=	12.5	%						
			with									
			[One test frame defined by:									
			Total number of crankshaft revolutions in test frame for emission relevant misfire rate	=	1000	revolutions						
			Misfire test frame counter]	=	4	-						
			OR									
		Fault Path 3: Catalyst damaging misfire rate	Weighted misfire counter for exhaust bank	>	2688	counts			immediately after catalyst damaging misfire rate is exceeded	-	continuous	1 Trip Blinking MIL (with similar conditions healing)
			OR									
			Weighted misfire counter for exhaust bank during first interval after engine start	>	2688	counts						
			and/or									
			Total weighted misfire counts for cylinder 1 within test frame	≥	[A] x [B]	-						
			where									
			[A] Total weighted misfire counts per exhaust bank within test frame	=	measured parameter	-						
			[B] Minimum ratio of weighted misfire sum for cylinder-individual fault code	=	12.5	%						
			with									
			[One test frame defined by:									
			Total number of crankshaft revolutions in test frame for catalyst damaging misfire	=	200	revolutions						
			OR									
			Total number of crankshaft revolutions in first test frame after engine start for catalyst damaging misfire	=	[A] x [B]	revolutions						
			[A] Total number of crankshaft revolutions in test frame for catalyst damaging misfire	=	200	revolutions						
			[B] Test frame extension factor for first interval after engine start]	=	1	-						

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
Misfire	P0302	Indicates that the engine has experienced cylinder 2 misfiring, detected by a crankshaft angle delay that is too great, caused by a drop in the engine speed	Method 1: Angular acceleration of crankshaft in transmission grip state (clutch is engaged), compared to threshold primarily used to detect single random misfire as well as single cylinder continuous misfire (see Look-Up Table #P0300-4)	>	100 to 1050	rad/s^2	Engine speed	≥	350	rpm	see Fault Paths 1-3 below	
			OR				Engine speed	≤	6000	rpm		
			Method 1: Angular acceleration of crankshaft in transmission slip state (clutch is slipping), compared to threshold primarily used to detect single random misfire as well as single cylinder continuous misfire (see Look-Up Table #P0300-10)	>	100 to 1050	rad/s^2						
			OR				Engine coolant temperature at engine start	>	-3549.94	deg C		
			Method 1: Angular acceleration of crankshaft in transmission open state (clutch is disengaged), compared to threshold primarily used to detect single random misfire as well as single cylinder continuous misfire (see Look-Up Table #P0300-7)	>	100 to 1050	rad/s^2	OR					
			OR				[Engine coolant temperature at engine start	<	-3549.94	deg C		
			Method 1: Angular acceleration of crankshaft in idle state, compared to threshold primarily used to detect single random misfire as well as single cylinder continuous misfire (see Look-Up Table #P0300-1)	>	95 to 180	rad/s^2	then monitoring enabled					
			OR				Engine coolant temperature]	>	-3549.94	deg C		
			Method 1: Angular acceleration of crankshaft in half-engine mode state, compared to threshold primarily used to detect single random misfire as well as single cylinder continuous misfire (see Look-Up Table #P0300-14)	>	66 to 2047.938	rad/s^2	Zero torque detection is not active	=	TRUE	-		
			OR				means					
			Method 1: Angular acceleration of crankshaft in catalyst heating, compared to threshold primarily used to detect single random misfire as well as single cylinder continuous misfire (see Look-Up Table #P0300-15)	>	175 to 550	rad/s^2	[Normalized inner engine torque	>	[A] + [B] + [C]	%		
			OR				OR					
			Method 2: Angular acceleration of crankshaft corrected for cylinders sharing same sensor wheel segments in transmission grip state (clutch is engaged), compared to threshold primarily used to detect single cylinder continuous and select paired cylinder continuous misfires in a non-adapted system	>	2047.938	rad/s^2	Normalized inner engine torque	>	[D] + [B] + [C]	%		
			OR				OR					
			Method 2: Angular acceleration of crankshaft corrected for cylinders sharing same sensor wheel segments in transmission slip state (clutch is slipping), compared to threshold primarily used to detect single cylinder continuous and select paired cylinder continuous misfires in a non-adapted system	>	2047.938	rad/s^2	Normalized inner engine torque	>	[E] + [B] + [C]	%		
			OR				OR			%		
			Method 2: Angular acceleration of crankshaft corrected for cylinders sharing same sensor wheel segments in transmission open state (clutch is disengaged), compared to threshold primarily used to detect single cylinder continuous and select paired cylinder continuous misfires in a non-adapted system	>	2047.938	rad/s^2	Normalized inner engine torque	>	[F] + [B] + [C]	%		
			OR				where					
			Method 2: Angular acceleration of crankshaft corrected for cylinders sharing same sensor wheel segments in idle state, compared to threshold primarily used to detect single cylinder continuous and select paired cylinder continuous misfires in a non-adapted system	>	2047.938	rad/s^2	[A] Threshold zero torque, driving state (see Look-Up Table #P0300-20)	=		%		
									5.32074 to 16.0797			
			OR				[B] Map for zero torque correction, engine speed and altitude dependant	=	0	%		
			Method 2: Angular acceleration of crankshaft corrected for cylinders sharing same sensor wheel segments in half-engine mode state, compared to threshold primarily used to detect single cylinder continuous and select paired cylinder continuous misfires in a non-adapted system	>	2047.938	rad/s^2	[C] Map for zero torque correction, engine speed and engine temperature dependant	=	0	%		
							[D] Threshold zero torque, idle state (see Look-Up Table #P0300-23)]	=	5.32074 to 10.0906	%		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
			Method 2: Angular acceleration of crankshaft corrected for cylinders sharing same sensor wheel segments in catalyst heating, compared to threshold primarily used to detect single cylinder continuous and select paired cylinder continuous misfires in a non-adapted system	>	2047.938	rad/s^2	[E] Threshold zero torque, half-engine mode state, driving (see Look-Up Table #P0300-24	=		%		
									2.00043 to 5.90057			
			OR				[F] Threshold zero torque, half-engine mode state, idle (see Look-Up Table #P0300-25	=		%		
									2.00043 to 5.90057			
			Method 3: Filtered angular acceleration of crankshaft in transmission grip state (clutch is engaged), compared to threshold primarily used to detect various forms of single cylinder and multiple cylinder continuous misfires (see Look-Up Table #P0300-5)	>	[A]+[B]	rad/s^2	Overrun/fuel cut-off is not active	=	TRUE	-		
			where				(Combustion delay after engine start has completed	=	TRUE	-		
			[A] Base continuous misfire threshold in the transmission grip state	=	60 to 815	rad/s^2	means					
			[B] Smallest (negative) angular acceleration value from a non-misfiring cylinder; limited depending on operating point	=	measured parameter	rad/s^2	[Engine speed	>	500	rpm		
			OR				for					
			Method 3: Filtered angular acceleration of crankshaft in transmission slip state (clutch is slipping), compared to threshold primarily used to detect various forms of single cylinder and multiple cylinder continuous misfires (see Look-Up Table #P0300-11)	>	[A]+[B]	rad/s^2	Number of combustions]	=	0	-		
			where				OR					
			[A] Base continuous misfire threshold in the transmission slip state	=	60 to 815	rad/s^2	[Engine has re-started (start-stop)	=	TRUE	-		
			[B] Smallest (negative) angular acceleration value from a non-misfiring cylinder; limited depending on operating point	=	measured parameter	rad/s^2	means					
			OR				Number of combustions after re-startl)	=	8	-		
			Method 3: Filtered angular acceleration of crankshaft in transmission open state (clutch is disengaged), compared to threshold primarily used to detect various forms of single cylinder and multiple cylinder continuous misfires (see Look-Up Table #P0300-8)	>	[A]+[B]	rad/s^2	Calculated EPM segment time is valid	=	TRUE	-		
			where				No pending or confirmed DTCs	=	see sheet inhibit tables	-		
			[A] Base continuous misfire threshold in the transmission open state	=	60 to 815	rad/s^2	Basic enable conditions met	=	see sheet enable tables	-		
			[B] Smallest (negative) angular acceleration value from a non-misfiring cylinder; limited depending on operating point	=	measured parameter	rad/s^2						
			OR									
			Method 3: Filtered angular acceleration of crankshaft in idle state, compared to threshold primarily used to detect various forms of single cylinder and multiple cylinder continuous misfires (see Look-Up Table #P0300-2)	>	[A]+[B]	rad/s^2						
			where									
			[A] Base continuous misfire threshold in the transmission idle state	=	75 to 135	rad/s^2						
			[B] Smallest (negative) angular acceleration value from a non-misfiring cylinder; limited depending on operating point	=	measured parameter	rad/s^2						
			OR									
			Method 3: Filtered angular acceleration of crankshaft in half-engine mode state, compared to threshold primarily used to detect various forms of single cylinder and multiple cylinder continuous misfires (see Look-Up Table #P0300-18)	>	[A]+[B]	rad/s^2						
			where									
			[A] Base continuous misfire threshold in the half-engine mode state	=	60 to 2047.938	rad/s^2						
			[B] Smallest (negative) angular acceleration value from a non-misfiring cylinder; limited depending on operating point	=	measured parameter	rad/s^2						
			OR									
			Method 3: Filtered angular acceleration of crankshaft in catalyst heating state, compared to threshold primarily used to detect various forms of single cylinder and multiple cylinder continuous misfires (see Look-Up Table #P0300-19)	>	[A]+[B]	rad/s^2						

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required			MIL Illum.
			where											
			[A] Base continuous misfire threshold in catalyst heating state	=	250 to 335	rad/s^2								
			[B] Smallest (negative) angular acceleration value	=	measured parameter	rad/s^2								
			where											
		Fault Path 1: Emission relevant misfire rate within first 1000 crankshaft revolutions after engine start	Total misfire counts across all cylinders within first test frame outside of catalyst heating	>	71	-					1000	revs	once per drive cycle	2 Trip (with similar
			OR											
			Total misfire counts across all cylinders within first test frame during catalyst heating	>	71	-								
			and/or											
			Total misfire counts for cylinder 1 within test frame	>	[A] x [B]	-								
			where											
			[A] Total misfire counts across all cylinders within test frame	=	measured parameter	-								
			[B] Minimum ratio of misfire sum for cylinder-individual fault code	=	12.5	%								
			with											
			[One test frame defined by:											
			Total number of crankshaft revolutions in first test frame specific to emission relevant misfire rate at engine start	=	1000	revolutions								
			OR											
		Fault Path 2: Emission relevant misfire rate after the first 1000 crankshaft revolutions	Total misfire counts across all cylinders within test frame	>	71	-					4 intervals of 1000	revs	continuous	2 Trip (with similar conditions healing)
			and/or											
			Total misfire counts for cylinder 1 within test frame	>	[A] x [B]	-								
			where											
			[A] Total misfire counts across all cylinders within test frame	=	measured parameter	-								
			[B] Minimum ratio of misfire sum for cylinder-individual fault code	=	12.5	%								
			with											
			[One test frame defined by:											
			Total number of crankshaft revolutions in test frame for emission relevant misfire rate	=	1000	revolutions								
			Misfire test frame counter]	=	4	-								
			OR											
		Fault Path 3: Catalyst damaging misfire rate	Weighted misfire counter for exhaust bank	>	2688	counts					immediately after catalyst damaging misfire rate is exceeded	-	continuous	1 Trip Blinking MIL (with similar conditions healing)
			OR											
			Weighted misfire counter for exhaust bank during first interval after engine start	>	2688	counts								
			and/or											
			Total weighted misfire counts for cylinder 1 within test frame	≥	[A] x [B]	-								
			where											
			[A] Total weighted misfire counts per exhaust bank within test frame	=	measured parameter	-								
			[B] Minimum ratio of weighted misfire sum for cylinder-individual fault code	=	12.5	%								
			with											
			[One test frame defined by:											
			Total number of crankshaft revolutions in test frame for catalyst damaging misfire	=	200	revolutions								
			OR											
			Total number of crankshaft revolutions in first test frame after engine start for catalyst damaging misfire	=	[A] x [B]	revolutions								
			[A] Total number of crankshaft revolutions in test frame for catalyst damaging misfire	=	200	revolutions								
			[B] Test frame extension factor for first interval after engine start]	=	1	-								
Misfire	P0303	Indicates that the engine has experienced cylinder 3 misfiring, detected by a crankshaft angle delay that is too great, caused by a drop in the engine speed	Method 1: Angular acceleration of crankshaft in transmission grip state (clutch is engaged), compared to threshold primarily used to detect single random misfire as well as single cylinder continuous misfire (see Look-Up Table #P0300-4)	>	100 to 1050	rad/s^2	Engine speed	≥	350	rpm	see Fault Paths 1-3 below			
			OR				Engine speed	≤	6000	rpm				

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
			Method 1: Angular acceleration of crankshaft in transmission slip state (clutch is slipping), compared to threshold primarily used to detect single random misfire as well as single cylinder continuous misfire (see Look-Up Table #P0300-10)	>	100 to 1050	rad/s^2						
			OR				Engine coolant temperature at engine start	>	-3549.94	deg C		
			Method 1: Angular acceleration of crankshaft in transmission open state (clutch is disengaged), compared to threshold primarily used to detect single random misfire as well as single cylinder continuous misfire (see Look-Up Table #P0300-7)	>	100 to 1050	rad/s^2	OR					
			OR				[Engine coolant temperature at engine start	<	-3549.94	deg C		
			Method 1: Angular acceleration of crankshaft in idle state, compared to threshold primarily used to detect single random misfire as well as single cylinder continuous misfire (see Look-Up Table #P0300-1)	>	95 to 180	rad/s^2	then monitoring enabled					
			OR				Engine coolant temperature]	>	-3549.94	deg C		
			Method 1: Angular acceleration of crankshaft in half-engine mode state, compared to threshold primarily used to detect single random misfire as well as single cylinder continuous misfire (see Look-Up Table #P0300-14)	>	66 to 2047.938	rad/s^2	Zero torque detection is not active	=	TRUE	-		
			OR				means					
			Method 1: Angular acceleration of crankshaft in catalyst heating, compared to threshold primarily used to detect single random misfire as well as single cylinder continuous misfire (see Look-Up Table #P0300-15)	>	175 to 550	rad/s^2	[Normalized inner engine torque	>	[A] + [B] + [C]	%		
			OR				OR					
			Method 2: Angular acceleration of crankshaft corrected for cylinders sharing same sensor wheel segments in transmission grip state (clutch is engaged), compared to threshold primarily used to detect single cylinder continuous and select paired cylinder continuous misfires in a non-adapted system	>	2047.938	rad/s^2	Normalized inner engine torque	>	[D] + [B] + [C]	%		
			OR				OR					
			Method 2: Angular acceleration of crankshaft corrected for cylinders sharing same sensor wheel segments in transmission slip state (clutch is slipping), compared to threshold primarily used to detect single cylinder continuous and select paired cylinder continuous misfires in a non-adapted system	>	2047.938	rad/s^2	Normalized inner engine torque	>	[E] + [B] + [C]	%		
			OR				OR			%		
			Method 2: Angular acceleration of crankshaft corrected for cylinders sharing same sensor wheel segments in transmission open state (clutch is disengaged), compared to threshold primarily used to detect single cylinder continuous and select paired cylinder continuous misfires in a non-adapted system	>	2047.938	rad/s^2	Normalized inner engine torque	>	[F] + [B] + [C]	%		
			OR				where					
			Method 2: Angular acceleration of crankshaft corrected for cylinders sharing same sensor wheel segments in idle state, compared to threshold primarily used to detect single cylinder continuous and select paired cylinder continuous misfires in a non-adapted system	>	2047.938	rad/s^2	[A] Threshold zero torque, driving state (see Look-Up Table #P0300-20)	=		%		
									5.32074 to 16.0797			
			OR				[B] Map for zero torque correction, engine speed and altitude dependant	=	0	%		
			Method 2: Angular acceleration of crankshaft corrected for cylinders sharing same sensor wheel segments in half-engine mode state, compared to threshold primarily used to detect single cylinder continuous and select paired cylinder continuous misfires in a non-adapted system	>	2047.938	rad/s^2	[C] Map for zero torque correction, engine speed and engine temperature dependant	=	0	%		
							[D] Threshold zero torque, idle state (see Look-Up Table #P0300-23)]	=		%		
									5.32074 to 10.0906			
			Method 2: Angular acceleration of crankshaft corrected for cylinders sharing same sensor wheel segments in catalyst heating, compared to threshold primarily used to detect single cylinder continuous and select paired cylinder continuous misfires in a non-adapted system	>	2047.938	rad/s^2	[E] Threshold zero torque, half-engine mode state, driving (see Look-Up Table #P0300-24	=		%		
									2.00043 to 5.90057			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
			OR				[F] Threshold zero torque, half-engine mode state, idle (see Look-Up Table #P0300-25	=	2.00043 to 5.90057	%		
			Method 3: Filtered angular acceleration of crankshaft in transmission grip state (clutch is engaged), compared to threshold primarily used to detect various forms of single cylinder and multiple cylinder continuous misfires (see Look-Up Table #P0300-5)	>	[A]+[B]	rad/s^2	Overrun/fuel cut-off is not active	=	TRUE	-		
			where				(Combustion delay after engine start has completed	=	TRUE	-		
			[A] Base continuous misfire threshold in the transmission grip state	=	60 to 815	rad/s^2	means					
			[B] Smallest (negative) angular acceleration value from a non-misfiring cylinder; limited depending on operating point	=	measured parameter	rad/s^2	[Engine speed	>	500	rpm		
			OR				for					
			Method 3: Filtered angular acceleration of crankshaft in transmission slip state (clutch is slipping), compared to threshold primarily used to detect various forms of single cylinder and multiple cylinder continuous misfires (see Look-Up Table #P0300-11)	>	[A]+[B]	rad/s^2	Number of combustions]	=	0	-		
			where				OR					
			[A] Base continuous misfire threshold in the transmission slip state	=	60 to 815	rad/s^2	[Engine has re-started (start-stop)	=	TRUE	-		
			[B] Smallest (negative) angular acceleration value from a non-misfiring cylinder; limited depending on operating point	=	measured parameter	rad/s^2	means					
			OR				Number of combustions after re-start])	=	8	-		
			Method 3: Filtered angular acceleration of crankshaft in transmission open state (clutch is disengaged), compared to threshold primarily used to detect various forms of single cylinder and multiple cylinder continuous misfires (see Look-Up Table #P0300-8)	>	[A]+[B]	rad/s^2	Calculated EPM segment time is valid	=	TRUE	-		
			where				No pending or confirmed DTCs	=	see sheet inhibit tables	-		
			[A] Base continuous misfire threshold in the transmission open state	=	60 to 815	rad/s^2	Basic enable conditions met	=	see sheet enable tables	-		
			[B] Smallest (negative) angular acceleration value from a non-misfiring cylinder; limited depending on operating point	=	measured parameter	rad/s^2						
			OR									
			Method 3: Filtered angular acceleration of crankshaft in idle state, compared to threshold primarily used to detect various forms of single cylinder and multiple cylinder continuous misfires (see Look-Up Table #P0300-2)	>	[A]+[B]	rad/s^2						
			where									
			[A] Base continuous misfire threshold in the transmission idle state	=	75 to 135	rad/s^2						
			[B] Smallest (negative) angular acceleration value from a non-misfiring cylinder; limited depending on operating point	=	measured parameter	rad/s^2						
			OR									
			Method 3: Filtered angular acceleration of crankshaft in half-engine mode state, compared to threshold primarily used to detect various forms of single cylinder and multiple cylinder continuous misfires (see Look-Up Table #P0300-18)	>	[A]+[B]	rad/s^2						
			where									
			[A] Base continuous misfire threshold in the half-engine mode state	=	60 to 2047.938	rad/s^2						
			[B] Smallest (negative) angular acceleration value from a non-misfiring cylinder; limited depending on operating point	=	measured parameter	rad/s^2						
			OR									
			Method 3: Filtered angular acceleration of crankshaft in catalyst heating state, compared to threshold primarily used to detect various forms of single cylinder and multiple cylinder continuous misfires (see Look-Up Table #P0300-19)	>	[A]+[B]	rad/s^2						
			where									
			[A] Base continuous misfire threshold in catalyst heating state	=	250 to 335	rad/s^2						
			[B] Smallest (negative) angular acceleration value from a non-misfiring cylinder; limited depending on operating point	=	measured parameter	rad/s^2						
			where									

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required			MIL Illum.
		Fault Path 1: Emission relevant misfire rate within first 1000 crankshaft revolutions after engine start	Total misfire counts across all cylinders within first test frame outside of catalyst heating	>	71	-					1000	revs	once per drive cycle	2 Trip (with similar conditions healing)
			OR											
			Total misfire counts across all cylinders within first test frame during catalyst heating	>	71	-								
			and/or											
			Total misfire counts for cylinder 1 within test frame	>	[A] x [B]	-								
			where											
			[A] Total misfire counts across all cylinders within test frame	=	measured parameter	-								
			[B] Minimum ratio of misfire sum for cylinder-individual fault code	=	12.5	%								
			with											
			[One test frame defined by:											
			Total number of crankshaft revolutions in first test frame specific to emission relevant misfire rate at engine start	=	1000	revolutions								
			OR											
		Fault Path 2: Emission relevant misfire rate after the first 1000 crankshaft revolutions	Total misfire counts across all cylinders within test frame	>	71	-					4 intervals of 1000	revs	continuous	2 Trip (with similar conditions healing)
			and/or											
			Total misfire counts for cylinder 1 within test frame	>	[A] x [B]	-								
			where											
			[A] Total misfire counts across all cylinders within test frame	=	measured parameter	-								
			[B] Minimum ratio of misfire sum for cylinder-individual fault code	=	12.5	%								
			with											
			[One test frame defined by:											
			Total number of crankshaft revolutions in test frame for emission relevant misfire rate	=	1000	revolutions								
			Misfire test frame counter]	=	4	-								
			OR											
		Fault Path 3: Catalyst damaging misfire rate	Weighted misfire counter for exhaust bank	>	2688	counts					immediately after catalyst damaging misfire rate is exceeded	-	continuous	1 Trip Blinking MIL (with similar conditions healing)
			OR											
			Weighted misfire counter for exhaust bank during first interval after engine start	>	2688	counts								
			and/or											
			Total weighted misfire counts for cylinder 1 within test frame	≥	[A] x [B]	-								
			where											
			[A] Total weighted misfire counts per exhaust bank within test frame	=	measured parameter	-								
			[B] Minimum ratio of weighted misfire sum for cylinder-individual fault code	=	12.5	%								
			with											
			[One test frame defined by:											
			Total number of crankshaft revolutions in test frame for catalyst damaging misfire	=	200	revolutions								
			OR											
			Total number of crankshaft revolutions in first test frame after engine start for catalyst damaging misfire	=	[A] x [B]	revolutions								
			[A] Total number of crankshaft revolutions in test frame for catalyst damaging misfire	=	200	revolutions								
			[B] Test frame extension factor for first interval after engine start]	=	1	-								
Misfire	P0304	Indicates that the engine has experienced cylinder 4 misfiring, detected by a crankshaft angle delay that is too great, caused by a drop in the engine speed	Method 1: Angular acceleration of crankshaft in transmission grip state (clutch is engaged), compared to threshold primarily used to detect single random misfire as well as single cylinder continuous misfire (see Look-Up Table #P0300-4)	>	100 to 1050	rad/s^2	Engine speed	≥	350	rpm	see Fault Paths 1-3 below			
			OR				Engine speed	≤	6000	rpm				
			Method 1: Angular acceleration of crankshaft in transmission slip state (clutch is slipping), compared to threshold primarily used to detect single random misfire as well as single cylinder continuous misfire (see Look-Up Table #P0300-10)	>	100 to 1050	rad/s^2								

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
			OR				Engine coolant temperature at engine start	>	-3549.94	deg C		
			Method 1: Angular acceleration of crankshaft in transmission open state (clutch is disengaged), compared to threshold primarily used to detect single random misfire as well as single cylinder continuous misfire (see Look-Up Table #P0300-7)	>	100 to 1050	rad/s^2	OR					
			OR				[Engine coolant temperature at engine start	<	-3549.94	deg C		
			Method 1: Angular acceleration of crankshaft in idle state, compared to threshold primarily used to detect single random misfire as well as single cylinder continuous misfire (see Look-Up Table #P0300-1)	>	95 to 180	rad/s^2	then monitoring enabled					
			OR				Engine coolant temperature]	>	-3549.94	deg C		
			Method 1: Angular acceleration of crankshaft in half-engine mode state, compared to threshold primarily used to detect single random misfire as well as single cylinder continuous misfire (see Look-Up Table #P0300-14)	>	66 to 2047.938	rad/s^2	Zero torque detection is not active	=	TRUE	-		
			OR				means					
			Method 1: Angular acceleration of crankshaft in catalyst heating, compared to threshold primarily used to detect single random misfire as well as single cylinder continuous misfire (see Look-Up Table #P0300-15)	>	175 to 550	rad/s^2	[Normalized inner engine torque	>	[A] + [B] + [C]	%		
			OR				OR					
			Method 2: Angular acceleration of crankshaft corrected for cylinders sharing same sensor wheel segments in transmission grip state (clutch is engaged), compared to threshold primarily used to detect single cylinder continuous and select paired cylinder continuous misfires in a non-adapted system	>	2047.938	rad/s^2	Normalized inner engine torque	>	[D] + [B] + [C]	%		
			OR				OR					
			Method 2: Angular acceleration of crankshaft corrected for cylinders sharing same sensor wheel segments in transmission slip state (clutch is slipping), compared to threshold primarily used to detect single cylinder continuous and select paired cylinder continuous misfires in a non-adapted system	>	2047.938	rad/s^2	Normalized inner engine torque	>	[E] + [B] + [C]	%		
			OR				OR			%		
			Method 2: Angular acceleration of crankshaft corrected for cylinders sharing same sensor wheel segments in transmission open state (clutch is disengaged), compared to threshold primarily used to detect single cylinder continuous and select paired cylinder continuous misfires in a non-adapted system	>	2047.938	rad/s^2	Normalized inner engine torque	>	[F] + [B] + [C]	%		
			OR				where					
			Method 2: Angular acceleration of crankshaft corrected for cylinders sharing same sensor wheel segments in idle state, compared to threshold primarily used to detect single cylinder continuous and select paired cylinder continuous misfires in a non-adapted system	>	2047.938	rad/s^2	[A] Threshold zero torque, driving state (see Look-Up Table #P0300-20)	=		%		
									5.32074 to 16.0797			
			OR				[B] Map for zero torque correction, engine speed and altitude dependant	=	0	%		
			Method 2: Angular acceleration of crankshaft corrected for cylinders sharing same sensor wheel segments in half-engine mode state, compared to threshold primarily used to detect single cylinder continuous and select paired cylinder continuous misfires in a non-adapted system	>	2047.938	rad/s^2	[C] Map for zero torque correction, engine speed and engine temperature dependant	=	0	%		
							[D] Threshold zero torque, idle state (see Look-Up Table #P0300-23)]	=		%		
									5.32074 to 10.0906			
			Method 2: Angular acceleration of crankshaft corrected for cylinders sharing same sensor wheel segments in catalyst heating, compared to threshold primarily used to detect single cylinder continuous and select paired cylinder continuous misfires in a non-adapted system	>	2047.938	rad/s^2	[E] Threshold zero torque, half-engine mode state, driving (see Look-Up Table #P0300-24	=		%		
									2.00043 to 5.90057			
			OR				[F] Threshold zero torque, half-engine mode state, idle (see Look-Up Table #P0300-25	=		%		
									2.00043 to 5.90057			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
			Method 3: Filtered angular acceleration of crankshaft in transmission grip state (clutch is engaged), compared to threshold primarily used to detect various forms of single cylinder and multiple cylinder continuous misfires (see Look-Up Table #P0300-5)	>	[A]+[B]	rad/s^2	Overrun/fuel cut-off is not active	=	TRUE	-		
			where				(Combustion delay after engine start has completed	=	TRUE	-		
			[A] Base continuous misfire threshold in the transmission grip state	=	60 to 815	rad/s^2	means					
			[B] Smallest (negative) angular acceleration value from a non-misfiring cylinder; limited depending on operating point	=	measured parameter	rad/s^2	[Engine speed	>	500	rpm		
			OR				for					
			Method 3: Filtered angular acceleration of crankshaft in transmission slip state (clutch is slipping), compared to threshold primarily used to detect various forms of single cylinder and multiple cylinder continuous misfires (see Look-Up Table #P0300-11)	>	[A]+[B]	rad/s^2	Number of combustions]	=	0	-		
			where				OR					
			[A] Base continuous misfire threshold in the transmission slip state	=	60 to 815	rad/s^2	[Engine has re-started (start-stop)	=	TRUE	-		
			[B] Smallest (negative) angular acceleration value from a non-misfiring cylinder; limited depending on operating point	=	measured parameter	rad/s^2	means					
			OR				Number of combustions after re-start])	=	8	-		
			Method 3: Filtered angular acceleration of crankshaft in transmission open state (clutch is disengaged), compared to threshold primarily used to detect various forms of single cylinder and multiple cylinder continuous misfires (see Look-Up Table #P0300-8)	>	[A]+[B]	rad/s^2	Calculated EPM segment time is valid	=	TRUE	-		
			where				No pending or confirmed DTCs	=	see sheet inhibit tables	-		
			[A] Base continuous misfire threshold in the transmission open state	=	60 to 815	rad/s^2	Basic enable conditions met	=	see sheet enable tables	-		
			[B] Smallest (negative) angular acceleration value from a non-misfiring cylinder; limited depending on operating point	=	measured parameter	rad/s^2						
			OR									
			Method 3: Filtered angular acceleration of crankshaft in idle state, compared to threshold primarily used to detect various forms of single cylinder and multiple cylinder continuous misfires (see Look-Up Table #P0300-2)	>	[A]+[B]	rad/s^2						
			where									
			[A] Base continuous misfire threshold in the transmission idle state	=	75 to 135	rad/s^2						
			[B] Smallest (negative) angular acceleration value from a non-misfiring cylinder; limited depending on operating point	=	measured parameter	rad/s^2						
			OR									
			Method 3: Filtered angular acceleration of crankshaft in half-engine mode state, compared to threshold primarily used to detect various forms of single cylinder and multiple cylinder continuous misfires (see Look-Up Table #P0300-18)	>	[A]+[B]	rad/s^2						
			where									
			[A] Base continuous misfire threshold in the half-engine mode state	=	60 to 2047.938	rad/s^2						
			[B] Smallest (negative) angular acceleration value from a non-misfiring cylinder; limited depending on operating point	=	measured parameter	rad/s^2						
			OR									
			Method 3: Filtered angular acceleration of crankshaft in catalyst heating state, compared to threshold primarily used to detect various forms of single cylinder and multiple cylinder continuous misfires (see Look-Up Table #P0300-19)	>	[A]+[B]	rad/s^2						
			where									
			[A] Base continuous misfire threshold in catalyst heating state	=	250 to 335	rad/s^2						
			[B] Smallest (negative) angular acceleration value from a non-misfiring cylinder; limited depending on operating point	=	measured parameter	rad/s^2						
			where									

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required			MIL Illum.
		Fault Path 1: Emission relevant misfire rate within first 1000 crankshaft revolutions after engine start	Total misfire counts across all cylinders within first test frame outside of catalyst heating	>	71	-					1000	revs	once per drive cycle	2 Trip (with similar conditions healing)
			OR Total misfire counts across all cylinders within first test frame during catalyst heating	>	71	-								
			and/or Total misfire counts for cylinder 1 within test frame	>	[A] x [B]	-								
			where [A] Total misfire counts across all cylinders within test frame	=	measured parameter	-								
			[B] Minimum ratio of misfire sum for cylinder-individual fault code	=	12.5	%								
			with [One test frame defined by: Total number of crankshaft revolutions in first test frame specific to emission relevant misfire rate at engine start	=	1000	revolutions								
		Fault Path 2: Emission relevant misfire rate after the first 1000 crankshaft revolutions	OR Total misfire counts across all cylinders within test frame	>	71	-					4 intervals of 1000	revs	continuous	2 Trip (with similar conditions healing)
			and/or Total misfire counts for cylinder 1 within test frame	>	[A] x [B]	-								
			where [A] Total misfire counts across all cylinders within test frame	=	measured parameter	-								
			[B] Minimum ratio of misfire sum for cylinder-individual fault code	=	12.5	%								
			with [One test frame defined by: Total number of crankshaft revolutions in test frame for emission relevant misfire rate	=	1000	revolutions								
			Misfire test frame counter]	=	4	-								
		Fault Path 3: Catalyst damaging misfire rate	OR Weighted misfire counter for exhaust bank	>	2688	counts					immediately after catalyst damaging misfire rate is exceeded	-	continuous	1 Trip Blinking MIL (with similar conditions healing)
			OR Weighted misfire counter for exhaust bank during first interval after engine start	>	2688	counts								
			and/or Total weighted misfire counts for cylinder 1 within test frame	≥	[A] x [B]	-								
			where [A] Total weighted misfire counts per exhaust bank within test frame	=	measured parameter	-								
			[B] Minimum ratio of weighted misfire sum for cylinder-individual fault code	=	12.5	%								
			with [One test frame defined by: Total number of crankshaft revolutions in test frame for catalyst damaging misfire	=	200	revolutions								
			OR Total number of crankshaft revolutions in first test frame after engine start for catalyst damaging misfire	=	[A] x [B]	revolutions								
			[A] Total number of crankshaft revolutions in test frame for catalyst damaging misfire	=	200	revolutions								
			[B] Test frame extension factor for first interval after engine start]	=	1	-								
Misfire	P0305	Indicates that the engine has experienced cylinder 5 misfiring, detected by a crankshaft angle delay that is too great, caused by a drop in the engine speed	Method 1: Angular acceleration of crankshaft in transmission grip state (clutch is engaged), compared to threshold primarily used to detect single random misfire as well as single cylinder continuous misfire (see Look-Up Table #P0300-4)	>	100 to 1050	rad/s^2	Engine speed	≥	350	rpm	see Fault Paths 1-3 below			
			OR				Engine speed	≤	6000	rpm				
			Method 1: Angular acceleration of crankshaft in transmission slip state (clutch is slipping), compared to threshold primarily used to detect single random misfire as well as single cylinder continuous misfire (see Look-Up Table #P0300-10)	>	100 to 1050	rad/s^2								
			OR				Engine coolant temperature at engine start	>	-3549.94	deg C				

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
			Method 1: Angular acceleration of crankshaft in transmission open state (clutch is disengaged), compared to threshold primarily used to detect single random misfire as well as single cylinder continuous misfire (see Look-Up Table #P0300-7)	>	100 to 1050	rad/s^2	OR					
			OR				[Engine coolant temperature at engine start	<	-3549.94	deg C		
			Method 1: Angular acceleration of crankshaft in idle state, compared to threshold primarily used to detect single random misfire as well as single cylinder continuous misfire (see Look-Up Table #P0300-1)	>	95 to 180	rad/s^2	then monitoring enabled					
			OR				Engine coolant temperature]	>	-3549.94	deg C		
			Method 1: Angular acceleration of crankshaft in half-engine mode state, compared to threshold primarily used to detect single random misfire as well as single cylinder continuous misfire (see Look-Up Table #P0300-14)	>	66 to 2047.938	rad/s^2	Zero torque detection is not active	=	TRUE	-		
			OR				means					
			Method 1: Angular acceleration of crankshaft in catalyst heating, compared to threshold primarily used to detect single random misfire as well as single cylinder continuous misfire (see Look-Up Table #P0300-15)	>	175 to 550	rad/s^2	[Normalized inner engine torque	>	[A] + [B] + [C]	%		
			OR				OR					
			Method 2: Angular acceleration of crankshaft corrected for cylinders sharing same sensor wheel segments in transmission grip state (clutch is engaged), compared to threshold primarily used to detect single cylinder continuous and select paired cylinder continuous misfires in a non-adapted system	>	2047.938	rad/s^2	Normalized inner engine torque	>	[D] + [B] + [C]	%		
			OR				OR					
			Method 2: Angular acceleration of crankshaft corrected for cylinders sharing same sensor wheel segments in transmission slip state (clutch is slipping), compared to threshold primarily used to detect single cylinder continuous and select paired cylinder continuous misfires in a non-adapted system	>	2047.938	rad/s^2	Normalized inner engine torque	>	[E] + [B] + [C]	%		
			OR				OR			%		
			Method 2: Angular acceleration of crankshaft corrected for cylinders sharing same sensor wheel segments in transmission open state (clutch is disengaged), compared to threshold primarily used to detect single cylinder continuous and select paired cylinder continuous misfires in a non-adapted system	>	2047.938	rad/s^2	Normalized inner engine torque	>	[F] + [B] + [C]	%		
			OR				where					
			Method 2: Angular acceleration of crankshaft corrected for cylinders sharing same sensor wheel segments in idle state, compared to threshold primarily used to detect single cylinder continuous and select paired cylinder continuous misfires in a non-adapted system	>	2047.938	rad/s^2	[A] Threshold zero torque, driving state (see Look-Up Table #P0300-20)	=		%		
									5.32074 to 16.0797			
			OR				[B] Map for zero torque correction, engine speed and altitude dependant	=	0	%		
			Method 2: Angular acceleration of crankshaft corrected for cylinders sharing same sensor wheel segments in half-engine mode state, compared to threshold primarily used to detect single cylinder continuous and select paired cylinder continuous misfires in a non-adapted system	>	2047.938	rad/s^2	[C] Map for zero torque correction, engine speed and engine temperature dependant	=	0	%		
							[D] Threshold zero torque, idle state (see Look-Up Table #P0300-23)]	=		%		
									5.32074 to 10.0906			
			Method 2: Angular acceleration of crankshaft corrected for cylinders sharing same sensor wheel segments in catalyst heating, compared to threshold primarily used to detect single cylinder continuous and select paired cylinder continuous misfires in a non-adapted system	>	2047.938	rad/s^2	[E] Threshold zero torque, half-engine mode state, driving (see Look-Up Table #P0300-24	=		%		
									2.00043 to 5.90057			
			OR				[F] Threshold zero torque, half-engine mode state, idle (see Look-Up Table #P0300-25	=		%		
									2.00043 to 5.90057			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
			Method 3: Filtered angular acceleration of crankshaft in transmission grip state (clutch is engaged), compared to threshold primarily used to detect various forms of single cylinder and multiple cylinder continuous misfires (see Look-Up Table #P0300-5)	>	[A]+[B]	rad/s^2	Overrun/fuel cut-off is not active	=	TRUE	-		
			where				(Combustion delay after engine start has completed	=	TRUE	-		
			[A] Base continuous misfire threshold in the transmission grip state	=	60 to 815	rad/s^2	means					
			[B] Smallest (negative) angular acceleration value from a non-misfiring cylinder; limited depending on operating point	=	measured parameter	rad/s^2	[Engine speed	>	500	rpm		
			OR				for					
			Method 3: Filtered angular acceleration of crankshaft in transmission slip state (clutch is slipping), compared to threshold primarily used to detect various forms of single cylinder and multiple cylinder continuous misfires (see Look-Up Table #P0300-11)	>	[A]+[B]	rad/s^2	Number of combustions]	=	0	-		
			where				OR					
			[A] Base continuous misfire threshold in the transmission slip state	=	60 to 815	rad/s^2	[Engine has re-started (start-stop)	=	TRUE	-		
			[B] Smallest (negative) angular acceleration value from a non-misfiring cylinder; limited depending on operating point	=	measured parameter	rad/s^2	means					
			OR				Number of combustions after re-start])	=	8	-		
			Method 3: Filtered angular acceleration of crankshaft in transmission open state (clutch is disengaged), compared to threshold primarily used to detect various forms of single cylinder and multiple cylinder continuous misfires (see Look-Up Table #P0300-8)	>	[A]+[B]	rad/s^2	Calculated EPM segment time is valid	=	TRUE	-		
			where				No pending or confirmed DTCs	=	see sheet inhibit tables	-		
			[A] Base continuous misfire threshold in the transmission open state	=	60 to 815	rad/s^2	Basic enable conditions met	=	see sheet enable tables	-		
			[B] Smallest (negative) angular acceleration value from a non-misfiring cylinder; limited depending on operating point	=	measured parameter	rad/s^2						
			OR									
			Method 3: Filtered angular acceleration of crankshaft in idle state, compared to threshold primarily used to detect various forms of single cylinder and multiple cylinder continuous misfires (see Look-Up Table #P0300-2)	>	[A]+[B]	rad/s^2						
			where									
			[A] Base continuous misfire threshold in the transmission idle state	=	75 to 135	rad/s^2						
			[B] Smallest (negative) angular acceleration value from a non-misfiring cylinder; limited depending on operating point	=	measured parameter	rad/s^2						
			OR									
			Method 3: Filtered angular acceleration of crankshaft in half-engine mode state, compared to threshold primarily used to detect various forms of single cylinder and multiple cylinder continuous misfires (see Look-Up Table #P0300-18)	>	[A]+[B]	rad/s^2						
			where									
			[A] Base continuous misfire threshold in the half-engine mode state	=	60 to 2047.938	rad/s^2						
			[B] Smallest (negative) angular acceleration value from a non-misfiring cylinder; limited depending on operating point	=	measured parameter	rad/s^2						
			OR									
			Method 3: Filtered angular acceleration of crankshaft in catalyst heating state, compared to threshold primarily used to detect various forms of single cylinder and multiple cylinder continuous misfires (see Look-Up Table #P0300-19)	>	[A]+[B]	rad/s^2						
			where									
			[A] Base continuous misfire threshold in catalyst heating state	=	250 to 335	rad/s^2						
			[B] Smallest (negative) angular acceleration value from a non-misfiring cylinder; limited depending on operating point	=	measured parameter	rad/s^2						
			where									

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required			MIL Illum.
		Fault Path 1: Emission relevant misfire rate within first 1000 crankshaft revolutions after engine start	Total misfire counts across all cylinders within first test frame outside of catalyst heating	>	71	-					1000	revs	once per drive cycle	2 Trip (with similar conditions healing)
			OR											
			Total misfire counts across all cylinders within first test frame during catalyst heating	>	71	-								
			and/or											
			Total misfire counts for cylinder 1 within test frame	>	[A] x [B]	-								
			where											
			[A] Total misfire counts across all cylinders within test frame	=	measured parameter	-								
			[B] Minimum ratio of misfire sum for cylinder-individual fault code	=	12.5	%								
			with											
			[One test frame defined by:											
			Total number of crankshaft revolutions in first test frame specific to emission relevant misfire rate at engine start	=	1000	revolutions								
			OR											
		Fault Path 2: Emission relevant misfire rate after the first 1000 crankshaft revolutions	Total misfire counts across all cylinders within test frame	>	71	-					4 intervals of 1000	revs	continuous	2 Trip (with similar conditions healing)
			and/or											
			Total misfire counts for cylinder 1 within test frame	>	[A] x [B]	-								
			where											
			[A] Total misfire counts across all cylinders within test frame	=	measured parameter	-								
			[B] Minimum ratio of misfire sum for cylinder-individual fault code	=	12.5	%								
			with											
			[One test frame defined by:											
			Total number of crankshaft revolutions in test frame for emission relevant misfire rate	=	1000	revolutions								
			Misfire test frame counter]	=	4	-								
			OR											
		Fault Path 3: Catalyst damaging misfire rate	Weighted misfire counter for exhaust bank	>	2688	counts					immediately after catalyst damaging misfire rate is exceeded	-	continuous	1 Trip Blinking MIL (with similar conditions healing)
			OR											
			Weighted misfire counter for exhaust bank during first interval after engine start	>	2688	counts								
			and/or											
			Total weighted misfire counts for cylinder 1 within test frame	≥	[A] x [B]	-								
			where											
			[A] Total weighted misfire counts per exhaust bank within test frame	=	measured parameter	-								
			[B] Minimum ratio of weighted misfire sum for cylinder-individual fault code	=	12.5	%								
			with											
			[One test frame defined by:											
			Total number of crankshaft revolutions in test frame for catalyst damaging misfire	=	200	revolutions								
			OR											
			Total number of crankshaft revolutions in first test frame after engine start for catalyst damaging misfire	=	[A] x [B]	revolutions								
			[A] Total number of crankshaft revolutions in test frame for catalyst damaging misfire	=	200	revolutions								
			[B] Test frame extension factor for first interval after engine start]	=	1	-								
Misfire	P0306	Indicates that the engine has experienced cylinder 6 misfiring, detected by a crankshaft angle delay that is too great, caused by a drop in the engine speed	Method 1: Angular acceleration of crankshaft in transmission grip state (clutch is engaged), compared to threshold primarily used to detect single random misfire as well as single cylinder continuous misfire (see Look-Up Table #P0300-4)	>	100 to 1050	rad/s^2	Engine speed	≥	350	rpm	see Fault Paths 1-3 below			
			OR				Engine speed	≤	6000	rpm				
			Method 1: Angular acceleration of crankshaft in transmission slip state (clutch is slipping), compared to threshold primarily used to detect single random misfire as well as single cylinder continuous misfire (see Look-Up Table #P0300-10)	>	100 to 1050	rad/s^2								
			OR				Engine coolant temperature at engine start	>	-3549.94	deg C				

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
			Method 1: Angular acceleration of crankshaft in transmission open state (clutch is disengaged), compared to threshold primarily used to detect single random misfire as well as single cylinder continuous misfire (see Look-Up Table #P0300-7)	>	100 to 1050	rad/s^2	OR					
			OR				[Engine coolant temperature at engine start	<	-3549.94	deg C		
			Method 1: Angular acceleration of crankshaft in idle state, compared to threshold primarily used to detect single random misfire as well as single cylinder continuous misfire (see Look-Up Table #P0300-1)	>	95 to 180	rad/s^2	then monitoring enabled					
			OR				Engine coolant temperature]	>	-3549.94	deg C		
			Method 1: Angular acceleration of crankshaft in half-engine mode state, compared to threshold primarily used to detect single random misfire as well as single cylinder continuous misfire (see Look-Up Table #P0300-14)	>	66 to 2047.938	rad/s^2	Zero torque detection is not active	=	TRUE	-		
			OR				means					
			Method 1: Angular acceleration of crankshaft in catalyst heating, compared to threshold primarily used to detect single random misfire as well as single cylinder continuous misfire (see Look-Up Table #P0300-15)	>	175 to 550	rad/s^2	[Normalized inner engine torque	>	[A] + [B] + [C]	%		
			OR				OR					
			Method 2: Angular acceleration of crankshaft corrected for cylinders sharing same sensor wheel segments in transmission grip state (clutch is engaged), compared to threshold primarily used to detect single cylinder continuous and select paired cylinder continuous misfires in a non-adapted system	>	2047.938	rad/s^2	Normalized inner engine torque	>	[D] + [B] + [C]	%		
			OR				OR					
			Method 2: Angular acceleration of crankshaft corrected for cylinders sharing same sensor wheel segments in transmission slip state (clutch is slipping), compared to threshold primarily used to detect single cylinder continuous and select paired cylinder continuous misfires in a non-adapted system	>	2047.938	rad/s^2	Normalized inner engine torque	>	[E] + [B] + [C]	%		
			OR				OR			%		
			Method 2: Angular acceleration of crankshaft corrected for cylinders sharing same sensor wheel segments in transmission open state (clutch is disengaged), compared to threshold primarily used to detect single cylinder continuous and select paired cylinder continuous misfires in a non-adapted system	>	2047.938	rad/s^2	Normalized inner engine torque	>	[F] + [B] + [C]	%		
			OR				where					
			Method 2: Angular acceleration of crankshaft corrected for cylinders sharing same sensor wheel segments in idle state, compared to threshold primarily used to detect single cylinder continuous and select paired cylinder continuous misfires in a non-adapted system	>	2047.938	rad/s^2	[A] Threshold zero torque, driving state (see Look-Up Table #P0300-20)	=		%		
									5.32074 to 16.0797			
			OR				[B] Map for zero torque correction, engine speed and altitude dependant	=	0	%		
			Method 2: Angular acceleration of crankshaft corrected for cylinders sharing same sensor wheel segments in half-engine mode state, compared to threshold primarily used to detect single cylinder continuous and select paired cylinder continuous misfires in a non-adapted system	>	2047.938	rad/s^2	[C] Map for zero torque correction, engine speed and engine temperature dependant	=	0	%		
							[D] Threshold zero torque, idle state (see Look-Up Table #P0300-23)]	=		%		
									5.32074 to 10.0906			
			Method 2: Angular acceleration of crankshaft corrected for cylinders sharing same sensor wheel segments in catalyst heating, compared to threshold primarily used to detect single cylinder continuous and select paired cylinder continuous misfires in a non-adapted system	>	2047.938	rad/s^2	[E] Threshold zero torque, half-engine mode state, driving (see Look-Up Table #P0300-24	=		%		
									2.00043 to 5.90057			
			OR				[F] Threshold zero torque, half-engine mode state, idle (see Look-Up Table #P0300-25	=		%		
									2.00043 to 5.90057			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
			Method 3: Filtered angular acceleration of crankshaft in transmission grip state (clutch is engaged), compared to threshold primarily used to detect various forms of single cylinder and multiple cylinder continuous misfires (see Look-Up Table #P0300-5)	>	[A]+[B]	rad/s^2	Overrun/fuel cut-off is not active	=	TRUE	-		
			where				(Combustion delay after engine start has completed	=	TRUE	-		
			[A] Base continuous misfire threshold in the transmission grip state	=	60 to 815	rad/s^2	means					
			[B] Smallest (negative) angular acceleration value from a non-misfiring cylinder; limited depending on operating point	=	measured parameter	rad/s^2	[Engine speed	>	500	rpm		
			OR				for					
			Method 3: Filtered angular acceleration of crankshaft in transmission slip state (clutch is slipping), compared to threshold primarily used to detect various forms of single cylinder and multiple cylinder continuous misfires (see Look-Up Table #P0300-11)	>	[A]+[B]	rad/s^2	Number of combustions]	=	0	-		
			where				OR					
			[A] Base continuous misfire threshold in the transmission slip state	=	60 to 815	rad/s^2	[Engine has re-started (start-stop)	=	TRUE	-		
			[B] Smallest (negative) angular acceleration value from a non-misfiring cylinder; limited depending on operating point	=	measured parameter	rad/s^2	means					
			OR				Number of combustions after re-start])	=	8	-		
			Method 3: Filtered angular acceleration of crankshaft in transmission open state (clutch is disengaged), compared to threshold primarily used to detect various forms of single cylinder and multiple cylinder continuous misfires (see Look-Up Table #P0300-8)	>	[A]+[B]	rad/s^2	Calculated EPM segment time is valid	=	TRUE	-		
			where				No pending or confirmed DTCs	=	see sheet inhibit tables	-		
			[A] Base continuous misfire threshold in the transmission open state	=	60 to 815	rad/s^2	Basic enable conditions met	=	see sheet enable tables	-		
			[B] Smallest (negative) angular acceleration value from a non-misfiring cylinder; limited depending on operating point	=	measured parameter	rad/s^2						
			OR									
			Method 3: Filtered angular acceleration of crankshaft in idle state, compared to threshold primarily used to detect various forms of single cylinder and multiple cylinder continuous misfires (see Look-Up Table #P0300-2)	>	[A]+[B]	rad/s^2						
			where									
			[A] Base continuous misfire threshold in the transmission idle state	=	75 to 135	rad/s^2						
			[B] Smallest (negative) angular acceleration value from a non-misfiring cylinder; limited depending on operating point	=	measured parameter	rad/s^2						
			OR									
			Method 3: Filtered angular acceleration of crankshaft in half-engine mode state, compared to threshold primarily used to detect various forms of single cylinder and multiple cylinder continuous misfires (see Look-Up Table #P0300-18)	>	[A]+[B]	rad/s^2						
			where									
			[A] Base continuous misfire threshold in the half-engine mode state	=	60 to 2047.938	rad/s^2						
			[B] Smallest (negative) angular acceleration value from a non-misfiring cylinder; limited depending on operating point	=	measured parameter	rad/s^2						
			OR									
			Method 3: Filtered angular acceleration of crankshaft in catalyst heating state, compared to threshold primarily used to detect various forms of single cylinder and multiple cylinder continuous misfires (see Look-Up Table #P0300-19)	>	[A]+[B]	rad/s^2						
			where									
			[A] Base continuous misfire threshold in catalyst heating state	=	250 to 335	rad/s^2						
			[B] Smallest (negative) angular acceleration value from a non-misfiring cylinder; limited depending on operating point	=	measured parameter	rad/s^2						
			where									

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required			MIL Illum.
		Fault Path 1: Emission relevant misfire rate within first 1000 crankshaft revolutions after engine start	Total misfire counts across all cylinders within first test frame outside of catalyst heating	>	71	-					1000	revs	once per drive cycle	2 Trip (with similar conditions healing)
			OR Total misfire counts across all cylinders within first test frame during catalyst heating	>	71	-								
			and/or Total misfire counts for cylinder 1 within test frame	>	[A] x [B]	-								
			where [A] Total misfire counts across all cylinders within test frame	=	measured parameter	-								
			[B] Minimum ratio of misfire sum for cylinder-individual fault code	=	12.5	%								
			with [One test frame defined by: Total number of crankshaft revolutions in first test frame specific to emission relevant misfire rate at engine start	=	1000	revolutions								
			OR											
		Fault Path 2: Emission relevant misfire rate after the first 1000 crankshaft revolutions	Total misfire counts across all cylinders within test frame	>	71	-					4 intervals of 1000	revs	continuous	2 Trip (with similar conditions healing)
			and/or Total misfire counts for cylinder 1 within test frame	>	[A] x [B]	-								
			where [A] Total misfire counts across all cylinders within test frame	=	measured parameter	-								
			[B] Minimum ratio of misfire sum for cylinder-individual fault code	=	12.5	%								
			with [One test frame defined by: Total number of crankshaft revolutions in test frame for emission relevant misfire rate	=	1000	revolutions								
			Misfire test frame counter]	=	4	-								
			OR											
		Fault Path 3: Catalyst damaging misfire rate	Weighted misfire counter for exhaust bank	>	2688	counts					immediately after catalyst damaging misfire rate is exceeded	-	continuous	1 Trip Blinking MIL (with similar conditions healing)
			OR Weighted misfire counter for exhaust bank during first interval after engine start	>	2688	counts								
			and/or Total weighted misfire counts for cylinder 1 within test frame	≥	[A] x [B]	-								
			where [A] Total weighted misfire counts per exhaust bank within test frame	=	measured parameter	-								
			[B] Minimum ratio of weighted misfire sum for cylinder-individual fault code	=	12.5	%								
			with [One test frame defined by: Total number of crankshaft revolutions in test frame for catalyst damaging misfire	=	200	revolutions								
			OR Total number of crankshaft revolutions in first test frame after engine start for catalyst damaging misfire	=	[A] x [B]	revolutions								
			[A] Total number of crankshaft revolutions in test frame for catalyst damaging misfire	=	200	revolutions								
			[B] Test frame extension factor for first interval after engine start]	=	1	-								
Misfire	P0307	Indicates that the engine has experienced cylinder 7 misfiring, detected by a crankshaft angle delay that is too great, caused by a drop in the engine speed	Method 1: Angular acceleration of crankshaft in transmission grip state (clutch is engaged), compared to threshold primarily used to detect single random misfire as well as single cylinder continuous misfire (see Look-Up Table #P0300-4)	>	100 to 1050	rad/s^2	Engine speed	≥	350	rpm	see Fault Paths 1-3 below			
			OR				Engine speed	≤	6000	rpm				
			Method 1: Angular acceleration of crankshaft in transmission slip state (clutch is slipping), compared to threshold primarily used to detect single random misfire as well as single cylinder continuous misfire (see Look-Up Table #P0300-10)	>	100 to 1050	rad/s^2								
			OR				Engine coolant temperature at engine start	>	-3549.94	deg C				

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
			Method 1: Angular acceleration of crankshaft in transmission open state (clutch is disengaged), compared to threshold primarily used to detect single random misfire as well as single cylinder continuous misfire (see Look-Up Table #P0300-7)	>	100 to 1050	rad/s^2	OR					
			OR				[Engine coolant temperature at engine start	<	-3549.94	deg C		
			Method 1: Angular acceleration of crankshaft in idle state, compared to threshold primarily used to detect single random misfire as well as single cylinder continuous misfire (see Look-Up Table #P0300-1)	>	95 to 180	rad/s^2	then monitoring enabled					
			OR				Engine coolant temperature]	>	-3549.94	deg C		
			Method 1: Angular acceleration of crankshaft in half-engine mode state, compared to threshold primarily used to detect single random misfire as well as single cylinder continuous misfire (see Look-Up Table #P0300-14)	>	66 to 2047.938	rad/s^2	Zero torque detection is not active	=	TRUE	-		
			OR				means					
			Method 1: Angular acceleration of crankshaft in catalyst heating, compared to threshold primarily used to detect single random misfire as well as single cylinder continuous misfire (see Look-Up Table #P0300-15)	>	175 to 550	rad/s^2	[Normalized inner engine torque	>	[A] + [B] + [C]	%		
			OR				OR					
			Method 2: Angular acceleration of crankshaft corrected for cylinders sharing same sensor wheel segments in transmission grip state (clutch is engaged), compared to threshold primarily used to detect single cylinder continuous and select paired cylinder continuous misfires in a non-adapted system	>	2047.938	rad/s^2	Normalized inner engine torque	>	[D] + [B] + [C]	%		
			OR				OR					
			Method 2: Angular acceleration of crankshaft corrected for cylinders sharing same sensor wheel segments in transmission slip state (clutch is slipping), compared to threshold primarily used to detect single cylinder continuous and select paired cylinder continuous misfires in a non-adapted system	>	2047.938	rad/s^2	Normalized inner engine torque	>	[E] + [B] + [C]	%		
			OR				OR			%		
			Method 2: Angular acceleration of crankshaft corrected for cylinders sharing same sensor wheel segments in transmission open state (clutch is disengaged), compared to threshold primarily used to detect single cylinder continuous and select paired cylinder continuous misfires in a non-adapted system	>	2047.938	rad/s^2	Normalized inner engine torque	>	[F] + [B] + [C]	%		
			OR				where					
			Method 2: Angular acceleration of crankshaft corrected for cylinders sharing same sensor wheel segments in idle state, compared to threshold primarily used to detect single cylinder continuous and select paired cylinder continuous misfires in a non-adapted system	>	2047.938	rad/s^2	[A] Threshold zero torque, driving state (see Look-Up Table #P0300-20)	=		%		
									5.32074 to 16.0797			
			OR				[B] Map for zero torque correction, engine speed and altitude dependant	=	0	%		
			Method 2: Angular acceleration of crankshaft corrected for cylinders sharing same sensor wheel segments in half-engine mode state, compared to threshold primarily used to detect single cylinder continuous and select paired cylinder continuous misfires in a non-adapted system	>	2047.938	rad/s^2	[C] Map for zero torque correction, engine speed and engine temperature dependant	=	0	%		
							[D] Threshold zero torque, idle state (see Look-Up Table #P0300-23)]	=		%		
									5.32074 to 10.0906			
			Method 2: Angular acceleration of crankshaft corrected for cylinders sharing same sensor wheel segments in catalyst heating, compared to threshold primarily used to detect single cylinder continuous and select paired cylinder continuous misfires in a non-adapted system	>	2047.938	rad/s^2	[E] Threshold zero torque, half-engine mode state, driving (see Look-Up Table #P0300-24	=		%		
									2.00043 to 5.90057			
			OR				[F] Threshold zero torque, half-engine mode state, idle (see Look-Up Table #P0300-25	=		%		
									2.00043 to 5.90057			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
			Method 3: Filtered angular acceleration of crankshaft in transmission grip state (clutch is engaged), compared to threshold primarily used to detect various forms of single cylinder and multiple cylinder continuous misfires (see Look-Up Table #P0300-5)	>	[A]+[B]	rad/s^2	Overrun/fuel cut-off is not active	=	TRUE	-		
			where				(Combustion delay after engine start has completed means	=	TRUE	-		
			[A] Base continuous misfire threshold in the transmission grip state	=	60 to 815	rad/s^2						
			[B] Smallest (negative) angular acceleration value from a non-misfiring cylinder; limited depending on operating point	=	measured parameter	rad/s^2	[Engine speed	>	500	rpm		
			OR				for					
			Method 3: Filtered angular acceleration of crankshaft in transmission slip state (clutch is slipping), compared to threshold primarily used to detect various forms of single cylinder and multiple cylinder continuous misfires (see Look-Up Table #P0300-11)	>	[A]+[B]	rad/s^2	Number of combustions]	=	0	-		
			where				OR					
			[A] Base continuous misfire threshold in the transmission slip state	=	60 to 815	rad/s^2	[Engine has re-started (start-stop)	=	TRUE	-		
			[B] Smallest (negative) angular acceleration value from a non-misfiring cylinder; limited depending on operating point	=	measured parameter	rad/s^2	means					
			OR				Number of combustions after re-start])	=	8	-		
			Method 3: Filtered angular acceleration of crankshaft in transmission open state (clutch is disengaged), compared to threshold primarily used to detect various forms of single cylinder and multiple cylinder continuous misfires (see Look-Up Table #P0300-8)	>	[A]+[B]	rad/s^2	Calculated EPM segment time is valid	=	TRUE	-		
			where				No pending or confirmed DTCs	=	see sheet inhibit tables	-		
			[A] Base continuous misfire threshold in the transmission open state	=	60 to 815	rad/s^2	Basic enable conditions met	=	see sheet enable tables	-		
			[B] Smallest (negative) angular acceleration value from a non-misfiring cylinder; limited depending on operating point	=	measured parameter	rad/s^2						
			OR									
			Method 3: Filtered angular acceleration of crankshaft in idle state, compared to threshold primarily used to detect various forms of single cylinder and multiple cylinder continuous misfires (see Look-Up Table #P0300-2)	>	[A]+[B]	rad/s^2						
			where									
			[A] Base continuous misfire threshold in the transmission idle state	=	75 to 135	rad/s^2						
			[B] Smallest (negative) angular acceleration value from a non-misfiring cylinder; limited depending on operating point	=	measured parameter	rad/s^2						
			OR									
			Method 3: Filtered angular acceleration of crankshaft in half-engine mode state, compared to threshold primarily used to detect various forms of single cylinder and multiple cylinder continuous misfires (see Look-Up Table #P0300-18)	>	[A]+[B]	rad/s^2						
			where									
			[A] Base continuous misfire threshold in the half-engine mode state	=	60 to 2047.938	rad/s^2						
			[B] Smallest (negative) angular acceleration value from a non-misfiring cylinder; limited depending on operating point	=	measured parameter	rad/s^2						
			OR									
			Method 3: Filtered angular acceleration of crankshaft in catalyst heating state, compared to threshold primarily used to detect various forms of single cylinder and multiple cylinder continuous misfires (see Look-Up Table #P0300-19)	>	[A]+[B]	rad/s^2						
			where									
			[A] Base continuous misfire threshold in catalyst heating state	=	250 to 335	rad/s^2						
			[B] Smallest (negative) angular acceleration value from a non-misfiring cylinder; limited depending on operating point	=	measured parameter	rad/s^2						
			where									

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required			MIL Illum.
		Fault Path 1: Emission relevant misfire rate within first 1000 crankshaft revolutions after engine start	Total misfire counts across all cylinders within first test frame outside of catalyst heating	>	71	-					1000	revs	once per drive cycle	2 Trip (with similar conditions healing)
			OR Total misfire counts across all cylinders within first test frame during catalyst heating	>	71	-								
			and/or Total misfire counts for cylinder 1 within test frame	>	[A] x [B]	-								
			where [A] Total misfire counts across all cylinders within test frame	=	measured parameter	-								
			[B] Minimum ratio of misfire sum for cylinder-individual fault code	=	12.5	%								
			with [One test frame defined by: Total number of crankshaft revolutions in first test frame specific to emission relevant misfire rate at engine start	=	1000	revolutions								
		Fault Path 2: Emission relevant misfire rate after the first 1000 crankshaft revolutions	OR Total misfire counts across all cylinders within test frame	>	71	-					4 intervals of 1000	revs	continuous	2 Trip (with similar conditions healing)
			and/or Total misfire counts for cylinder 1 within test frame	>	[A] x [B]	-								
			where [A] Total misfire counts across all cylinders within test frame	=	measured parameter	-								
			[B] Minimum ratio of misfire sum for cylinder-individual fault code	=	12.5	%								
			with [One test frame defined by: Total number of crankshaft revolutions in test frame for emission relevant misfire rate	=	1000	revolutions								
			Misfire test frame counter]	=	4	-								
		Fault Path 3: Catalyst damaging misfire rate	OR Weighted misfire counter for exhaust bank	>	2688	counts					immediately after catalyst damaging misfire rate is exceeded	-	continuous	1 Trip Blinking MIL (with similar conditions healing)
			OR Weighted misfire counter for exhaust bank during first interval after engine start	>	2688	counts								
			and/or Total weighted misfire counts for cylinder 1 within test frame	≥	[A] x [B]	-								
			where [A] Total weighted misfire counts per exhaust bank within test frame	=	measured parameter	-								
			[B] Minimum ratio of weighted misfire sum for cylinder-individual fault code	=	12.5	%								
			with [One test frame defined by: Total number of crankshaft revolutions in test frame for catalyst damaging misfire	=	200	revolutions								
			OR Total number of crankshaft revolutions in first test frame after engine start for catalyst damaging misfire	=	[A] x [B]	revolutions								
			[A] Total number of crankshaft revolutions in test frame for catalyst damaging misfire	=	200	revolutions								
			[B] Test frame extension factor for first interval after engine start]	=	1	-								
Misfire	P0308	Indicates that the engine has experienced cylinder 8 misfiring, detected by a crankshaft angle delay that is too great, caused by a drop in the engine speed	Method 1: Angular acceleration of crankshaft in transmission grip state (clutch is engaged), compared to threshold primarily used to detect single random misfire as well as single cylinder continuous misfire (see Look-Up Table #P0300-4)	>	100 to 1050	rad/s^2	Engine speed	≥	350	rpm	see Fault Paths 1-3 below			
			OR				Engine speed	≤	6000	rpm				
			Method 1: Angular acceleration of crankshaft in transmission slip state (clutch is slipping), compared to threshold primarily used to detect single random misfire as well as single cylinder continuous misfire (see Look-Up Table #P0300-10)	>	100 to 1050	rad/s^2								
			OR				Engine coolant temperature at engine start	>	-3549.94	deg C				

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
			Method 1: Angular acceleration of crankshaft in transmission open state (clutch is disengaged), compared to threshold primarily used to detect single random misfire as well as single cylinder continuous misfire (see Look-Up Table #P0300-7)	>	100 to 1050	rad/s^2	OR					
			OR				[Engine coolant temperature at engine start	<	-3549.94	deg C		
			Method 1: Angular acceleration of crankshaft in idle state, compared to threshold primarily used to detect single random misfire as well as single cylinder continuous misfire (see Look-Up Table #P0300-1)	>	95 to 180	rad/s^2	then monitoring enabled					
			OR				Engine coolant temperature]	>	-3549.94	deg C		
			Method 1: Angular acceleration of crankshaft in half-engine mode state, compared to threshold primarily used to detect single random misfire as well as single cylinder continuous misfire (see Look-Up Table #P0300-14)	>	66 to 2047.938	rad/s^2	Zero torque detection is not active	=	TRUE	-		
			OR				means					
			Method 1: Angular acceleration of crankshaft in catalyst heating, compared to threshold primarily used to detect single random misfire as well as single cylinder continuous misfire (see Look-Up Table #P0300-15)	>	175 to 550	rad/s^2	[Normalized inner engine torque	>	[A] + [B] + [C]	%		
			OR				OR					
			Method 2: Angular acceleration of crankshaft corrected for cylinders sharing same sensor wheel segments in transmission grip state (clutch is engaged), compared to threshold primarily used to detect single cylinder continuous and select paired cylinder continuous misfires in a non-adapted system	>	2047.938	rad/s^2	Normalized inner engine torque	>	[D] + [B] + [C]	%		
			OR				OR					
			Method 2: Angular acceleration of crankshaft corrected for cylinders sharing same sensor wheel segments in transmission slip state (clutch is slipping), compared to threshold primarily used to detect single cylinder continuous and select paired cylinder continuous misfires in a non-adapted system	>	2047.938	rad/s^2	Normalized inner engine torque	>	[E] + [B] + [C]	%		
			OR				OR			%		
			Method 2: Angular acceleration of crankshaft corrected for cylinders sharing same sensor wheel segments in transmission open state (clutch is disengaged), compared to threshold primarily used to detect single cylinder continuous and select paired cylinder continuous misfires in a non-adapted system	>	2047.938	rad/s^2	Normalized inner engine torque	>	[F] + [B] + [C]	%		
			OR				where					
			Method 2: Angular acceleration of crankshaft corrected for cylinders sharing same sensor wheel segments in idle state, compared to threshold primarily used to detect single cylinder continuous and select paired cylinder continuous misfires in a non-adapted system	>	2047.938	rad/s^2	[A] Threshold zero torque, driving state (see Look-Up Table #P0300-20)	=		%		
									5.32074 to 16.0797			
			OR				[B] Map for zero torque correction, engine speed and altitude dependant	=	0	%		
			Method 2: Angular acceleration of crankshaft corrected for cylinders sharing same sensor wheel segments in half-engine mode state, compared to threshold primarily used to detect single cylinder continuous and select paired cylinder continuous misfires in a non-adapted system	>	2047.938	rad/s^2	[C] Map for zero torque correction, engine speed and engine temperature dependant	=	0	%		
							[D] Threshold zero torque, idle state (see Look-Up Table #P0300-23)]	=	5.32074 to 10.0906	%		
			Method 2: Angular acceleration of crankshaft corrected for cylinders sharing same sensor wheel segments in catalyst heating, compared to threshold primarily used to detect single cylinder continuous and select paired cylinder continuous misfires in a non-adapted system	>	2047.938	rad/s^2	[E] Threshold zero torque, half-engine mode state, driving (see Look-Up Table #P0300-24	=		%		
									2.00043 to 5.90057			
			OR				[F] Threshold zero torque, half-engine mode state, idle (see Look-Up Table #P0300-25	=		%		
									2.00043 to 5.90057			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
			Method 3: Filtered angular acceleration of crankshaft in transmission grip state (clutch is engaged), compared to threshold primarily used to detect various forms of single cylinder and multiple cylinder continuous misfires (see Look-Up Table #P0300-5)	>	[A]+[B]	rad/s^2	Overrun/fuel cut-off is not active	=	TRUE	-		
			where				(Combustion delay after engine start has completed	=	TRUE	-		
			[A] Base continuous misfire threshold in the transmission grip state	=	60 to 815	rad/s^2	means					
			[B] Smallest (negative) angular acceleration value from a non-misfiring cylinder; limited depending on operating point	=	measured parameter	rad/s^2	[Engine speed	>	500	rpm		
			OR				for					
			Method 3: Filtered angular acceleration of crankshaft in transmission slip state (clutch is slipping), compared to threshold primarily used to detect various forms of single cylinder and multiple cylinder continuous misfires (see Look-Up Table #P0300-11)	>	[A]+[B]	rad/s^2	Number of combustions]	=	0	-		
			where				OR					
			[A] Base continuous misfire threshold in the transmission slip state	=	60 to 815	rad/s^2	[Engine has re-started (start-stop)	=	TRUE	-		
			[B] Smallest (negative) angular acceleration value from a non-misfiring cylinder; limited depending on operating point	=	measured parameter	rad/s^2	means					
			OR				Number of combustions after re-start|)	=	8	-		
			Method 3: Filtered angular acceleration of crankshaft in transmission open state (clutch is disengaged), compared to threshold primarily used to detect various forms of single cylinder and multiple cylinder continuous misfires (see Look-Up Table #P0300-8)	>	[A]+[B]	rad/s^2	Calculated EPM segment time is valid	=	TRUE	-		
			where				No pending or confirmed DTCs	=	see sheet inhibit tables	-		
			[A] Base continuous misfire threshold in the transmission open state	=	60 to 815	rad/s^2	Basic enable conditions met	=	see sheet enable tables	-		
			[B] Smallest (negative) angular acceleration value from a non-misfiring cylinder; limited depending on operating point	=	measured parameter	rad/s^2						
			OR									
			Method 3: Filtered angular acceleration of crankshaft in idle state, compared to threshold primarily used to detect various forms of single cylinder and multiple cylinder continuous misfires (see Look-Up Table #P0300-2)	>	[A]+[B]	rad/s^2						
			where									
			[A] Base continuous misfire threshold in the transmission idle state	=	75 to 135	rad/s^2						
			[B] Smallest (negative) angular acceleration value from a non-misfiring cylinder; limited depending on operating point	=	measured parameter	rad/s^2						
			OR									
			Method 3: Filtered angular acceleration of crankshaft in half-engine mode state, compared to threshold primarily used to detect various forms of single cylinder and multiple cylinder continuous misfires (see Look-Up Table #P0300-18)	>	[A]+[B]	rad/s^2						
			where									
			[A] Base continuous misfire threshold in the half-engine mode state	=	60 to 2047.938	rad/s^2						
			[B] Smallest (negative) angular acceleration value from a non-misfiring cylinder; limited depending on operating point	=	measured parameter	rad/s^2						
			OR									
			Method 3: Filtered angular acceleration of crankshaft in catalyst heating state, compared to threshold primarily used to detect various forms of single cylinder and multiple cylinder continuous misfires (see Look-Up Table #P0300-19)	>	[A]+[B]	rad/s^2						
			where									
			[A] Base continuous misfire threshold in catalyst heating state	=	250 to 335	rad/s^2						
			[B] Smallest (negative) angular acceleration value from a non-misfiring cylinder; limited depending on operating point	=	measured parameter	rad/s^2						
			where									

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required			MIL Illum.
		Fault Path 1: Emission relevant misfire rate within first 1000 crankshaft revolutions after engine start	Total misfire counts across all cylinders within first test frame outside of catalyst heating	>	71	-					1000	revs	once per drive cycle	2 Trip (with similar conditions healing)
			OR Total misfire counts across all cylinders within first test frame during catalyst heating	>	71	-								
			and/or Total misfire counts for cylinder 1 within test frame	>	[A] x [B]	-								
			where [A] Total misfire counts across all cylinders within test frame	=	measured parameter	-								
			[B] Minimum ratio of misfire sum for cylinder-individual fault code	=	12.5	%								
			with [One test frame defined by: Total number of crankshaft revolutions in first test frame specific to emission relevant misfire rate at engine start	=	1000	revolutions								
		Fault Path 2: Emission relevant misfire rate after the first 1000 crankshaft revolutions	OR Total misfire counts across all cylinders within test frame	>	71	-					4 intervals of 1000	revs	continuous	2 Trip (with similar conditions healing)
			and/or Total misfire counts for cylinder 1 within test frame	>	[A] x [B]	-								
			where [A] Total misfire counts across all cylinders within test frame	=	measured parameter	-								
			[B] Minimum ratio of misfire sum for cylinder-individual fault code	=	12.5	%								
			with [One test frame defined by: Total number of crankshaft revolutions in test frame for emission relevant misfire rate	=	1000	revolutions								
			Misfire test frame counter]	=	4	-								
		Fault Path 3: Catalyst damaging misfire rate	OR Weighted misfire counter for exhaust bank	>	2688	counts					immediately after catalyst damaging misfire rate is exceeded	-	continuous	1 Trip Blinking MIL (with similar conditions healing)
			OR Weighted misfire counter for exhaust bank during first interval after engine start	>	2688	counts								
			and/or Total weighted misfire counts for cylinder 1 within test frame	≥	[A] x [B]	-								
			where [A] Total weighted misfire counts per exhaust bank within test frame	=	measured parameter	-								
			[B] Minimum ratio of weighted misfire sum for cylinder-individual fault code	=	12.5	%								
			with [One test frame defined by: Total number of crankshaft revolutions in test frame for catalyst damaging misfire	=	200	revolutions								
			OR Total number of crankshaft revolutions in first test frame after engine start for catalyst damaging misfire	=	[A] x [B]	revolutions								
			[A] Total number of crankshaft revolutions in test frame for catalyst damaging misfire	=	200	revolutions								
			[B] Test frame extension factor for first interval after engine start]	=	1	-								
Evaporative System	P0497	Monitoring of fuel tank pressure while CVV is closed and CPV open (CPV stuck closed)	Difference between low pass filtered tank and start pressure for Tank leakage diagnosis	<=	-0.007446	kPa	Basic Enable conditions are fulfilled as following conditions:	=	TRUE	-	1	sec	once per driving cycle	2 Trips
			OR				Diagnosis of canister purge system is active	=	TRUE	-	once per driving cycle			
			Integrated CPV mass flow during vacuum build-up	>	0.08993	g	means							
							(							
							Battery Voltage	>=	10.9	V				
							Battery Voltage	<=	16	V				
							Fuel Tank Pressure	>=	-3500	Pa				
							Fuel Tank Pressure	<=	1300.049	Pa				
							Pressure ratio of manifold pressure and ambient pressure	<	0.796875	-				

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					)			
					Engine Coolant Temperature	> 69.8 deg C		
					ambient air temperature	> -7.5 deg C		
					vehicle speed	<= 0.12622747 mph		
					engine speed	> 0 rpm		
					(			
					Purge mass flow	<= 0.008355556 g/sec		
					Canister close valve check	= TRUE -		
					(			
					Lowpass filtered tank pressure	>= -900.024 Pa		
					OR			
					Time for measurement (maximum)	>= 5 sec		
					)			
					Pressure Stabilization Check	= TRUE -		
					(			
					Absolute reference value of differential tank pressure	<= 0.039917 kPa		
					for time	>= 2 sec		
					)			
					Compensation Gradient Determination	= TRUE -		
					(			
					Time for gradient measurements	>= 3 sec		
					)			
					)			
					Monitor has not completed this drive cycle (i.e. monitor runs once per trip)	= TRUE -		
					Basic enable conditions met	= see sheet enable tables -		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
	P0496	Monitoring of fuel tank pressure while CPV and CVV are closed (CPV stuck open)	Difference between low pass filtered tank and start pressure for Tank leakage diagnosis	< -0.060059 kPa	Basic Enable conditions are fulfilled as following conditions:	= TRUE -	1 sec once per driving cycle	2 Trips
					Diagnosis of canister purge system is active	= TRUE -	once per driving cycle	
					means			
					(			
					Battery Voltage	>= 10.9 V		
					Battery Voltage	<= 16 V		
					Fuel Tank Pressure	>= -3500 Pa		
					Fuel Tank Pressure	<= 1300.049 Pa		
					Pressure ratio of manifold pressure and ambient pressure	< 0.796875 -		
					)			
					Engine Coolant Temperature	> 69.8 deg C		
					ambient air temperature	> -7.5 deg C		
					vehicle speed	<= 0.12622747 mph		
					engine speed	> 0 rpm		
					(			
					Purge mass flow	<= 0.008355556 g/sec		
					Canister close valve check	= TRUE -		
					(			
					Lowpass filtered tank pressure	>= -900.024 Pa		
					OR			
					Time for measurement (maximum)	>= 5 sec		
					)			
					Pressure Stabilization Check	= TRUE -		
					(			
					Absolute reference value of differential tank pressure	<= 0.039917 kPa		
					for time	>= 2 sec		
					)			
					Compensation Gradient Determination	= TRUE -		
					(			
					Time for gradient measurements	>= 3 sec		
					)			
					)			
					Monitor has not completed this drive cycle (i.e. monitor runs once per trip)	= TRUE -		
					Basic enable conditions met	= see sheet enable tables -		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
	P04DF	Canister purge valve Bank1 is monitored for further pinpointing of a stuck open pruge valve. The diagnostic evaluates the impact on the MAP pressure bank 1 signal during an intrusively commanded purge valve opening	failing counter results during canister purge valve bank 1 diagnosis	<= 3 -	integrated purge mass flow bank 2	>= 0 g	1 sec continuous	2 Trips

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 — **TEST GROUP: KGMXV04.2088** — **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required			MIL Illum.
			Counter is incremented if the following occurs (during intrusive purge valve command):				filtered difference of environmental pressure and intake manifold pressure	<	30	kPa	once per driving cycle			
			difference in intake manifold pressure bank1 (difference is between intake manifold pressure bank 1 at the beginning of intrusive canister purge valve activation and the end)	<=	2.1992	kPa	**Canister purge valve release conditions met:**	=	TRUE	-				
							(							
							engine coolant temperature	>	69.8	deg C				
							ambient air pressure correction factor	>	0.690002	-				
							ambient air temperature	>	-7.5	deg C				
							)							
							time in between diagnostic events has elapsed. Waiting time betwee events	=	1	sec				
							Difference in filtered mixture correction	>	0.099976	-				
							Difference in filtered mixture correction	<	-0.099976	-				
							Monitor has not completed this drive cycle (i.e. monitor runs once per trip)	=	TRUE	-				
							Basic enable conditions met	=	see sheet enable tables	-				
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
	P04AE	Canister purge valve Bank2 is monitored for further pinpointing of a stuck open pruge valve. The diagnostic evaluates the impact on the MAP pressure bank 2 signal during an intrusively commanded purge valve opening	failing counter results during canister purge valve diagnosis	<=	3	-	integrated purge mass flow bank 2	>=	0	g	1	sec	continuous	2 Trips
			Counter is incremented if the following occurs (during intrusive purge valve command):				filtered difference of environmental pressure and intake manifold pressure	<	30	kPa	once per driving cycle			
			difference in intake manifold pressure bank2 (difference is between intake manifold pressure bank 2 at the beginning of intrusive canister purge valve activation and the end)	<=	2	kPa	**Canister purge valve release conditions met:**	=	TRUE	-				
							(							
							engine coolant temperature	>	69.8	deg C				
							ambient air pressure correction factor	>	0.690002	-				
							ambient air temperature	>	-7.5	deg C				
							)							
							time in between diagnostic events has elapsed. Waiting time betwee events	=	1	sec				
							Difference in filtered mixture correction	>	0.099976	-				
							Difference in filtered mixture correction	<	-0.099976	-				
							Monitor has not completed this drive cycle (i.e. monitor runs once per trip)	=	TRUE	-				
							Basic enable conditions met	=	see sheet enable tables	-				
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
Evaporative Emission System	P0455	Monitoring of tank pressure while CVV closed and CPV open (large leakage / open filler cap)	(				Basic Enable conditions are fulfilled as following conditions	=	TRUE	-			continuous	2 Trips
			Differential tank pressure	>	-0.050049	kPa	Diagnosis of canister purge system is active	=	TRUE	-				
			OR				(							
			Integrated CPV - mass flow for tank leakage diagnosis	>	0.2	l	Purge mass flow for DTEV is active	<=	0.008355556	g/sec				
			)				(							
			OR				Lowpass filtered tank pressure	>=	-900.024	Pa				
			(				OR							
			Differential tank pressure	>	A+B		Time for miscellaneous measurements	>=	5	sec				
			where A is pressure difference for termination of vacuum built-up	=	-0.050049	kPa	)							
			and B is pressure difference for further vacuum built up (0.5-mm-check)	=	-0.050049	kPa	(							
			OR				Absolute reference value of differential tank pressure	<=	0.039917	kPa				
			Integrated CPV - mass flow for tank leakage diagnosis	>	0.2	g	for time	>=	2	sec				
			)				)							
							(							
							Time for miscellaneous measurements	>=	3	sec				
							OR							
							Difference between low pass filtered tank and start pressure for TLD	<	-0.060059	kPa				
							)							

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					OR					
					(					
					Absolute reference value of differential tank pressure	<=	0.039917	kPa		
					for time	>=	2	sec		
					)					
					Tank cap open check finished	=	TRUE	-		
					)					
					(					
					Reference value of differential tank pressure	<=	0			
					OR					
					Time for miscellaneous measurements	>=	0	sec		
					)					
					(					
					Absolute reference value of differential tank pressure	<=	-0.007446	kPa		
					OR					
					Integrated CPV - mass flow for tank leakage diagnosis	>	0.08993	g		
					)					
					)					
					(					
					Error message for driving distance debounce for DTESK required	=	FALSE	-		
					OR					
					Distance travelled since rough leak recognized	>=	300	m		
					)					
					High canister load detected (0.5mm check)	=	TRUE	-		
					(					
					(					
					(					
					Condition for adaptive Lambda pilot control successful	=	TRUE	-		
					(					
					time counter at first end of start in cycle (16 bit)	>	900	sec		
					OR					
					Engine coolant downstream temperature during the first engine start of the driving cycle.	>	143.3	deg C		
					)					
					)					
					Filtered charcoal canister charge	>	40	-		
					Inhibition time for tank leakage diagnosis (0.5mm) after high canister load	>	0			
					)					
					Vehicle conditions for enabling diagnosis:	=	TRUE	-		
					(					
					Condition idle speed control	=	TRUE	-		
					Engine is in running state	=	TRUE	-		
					Vehicle speed	<=	0.12622747	mph		
					)					
					Conditions for 0.5mm tank leak diagnosis fulfilled, which is the following conditions:	=	TRUE	-		
					(					
					Absolute difference between current ambient pressure and old value	<=	1.6016	kPa		
					for time	>=	600	sec		
					Condition canister purge active	=	TRUE	-		
					for time	>	20	sec		
					Integral of purge mass flow after a longer purge stop	>	4	g		
					(					
					Difference between engine coolant downstream temperature during the first engine start of the driving cycle and ambient air temperature	<=	99.8	deg C		
					Ambient air temperature sensormodel is error free	=	TRUE	-		
					Condition first end of start in cycle	=	TRUE	-		
					)					
					Engine coolant downstream temperature during the first engine start of the driving cycle	>=	-6.8	deg C		
					Engine coolant downstream temperature during the first engine start of the driving cycle	<=	100.5	deg C		
					)					
					No pending or confirmed DTCs	=	see sheet inhibit tables	-		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Basic enable conditions met	= see sheet enable tables -		
EVAP System Leak Detected (small leak)	P0442	**Phase 1:** Monitoring of vacuum decay gradient while CPV and CVV are closed (engine on)	Engine Off Natural Vacuum Test:		**Conditions specific to Phase 1(engine running):**			1 Trip
		Phase 2: Monitoring of tank pressure while CPV and CVV are closed (engine off).	EWMA filtered fault index	> 0.5 factor	Tank pressure vacuum decay gradient while CPV and CVV are closed (see Look-Up-Table #P0422-2)	> 0.00701 to 0.029993 hPa/s		
			based on:		Engine coolant temperature at start	>= -6.8 deg C		
			(		Engine coolant temperature at start	<= 100.5 deg C		
			Difference between max. tank differential pressure & min. tank differential pressure (A-B) (see Look-Up-Table #P0422-1)	< 300.049 to 550.049 Pa	Ambient temperature	<= 35.3 deg C		
			Max. & min differential pressures are observable		Ambient temperature	>= -7.5 deg C		
					Fuel tank level	> 7.7 l		
			Phase 1 (CPV and CVV are closed):		Fuel tank level	< 64 l		
			(		(			
			A (Maximum pressure)	> 0 Pa	Absolute change in barometric pressure	< 1.6016 kPa		
			Stabilization phase (CPV closed and CVV open):		for time	= 600 sec		
			Wait for pressure to reach barometric pressure.	= 300 sec	)			
			)		Canister purge active	= TRUE -		
					Minimum purging time of the charcoal	> 20 sec		
			Phase 2 (CPV and CVV are closed):		Time since last charcoal canister purging	< 35 sec		
			(		Load factor of charcoal canister	< 40 factor		
			Wait for pressure to reach barometric pressure.		for time	>= 30 sec		
			B: Minimum pressure	= 0 Pa				
			)					
			)		**Conditions specific to Phase 2 (engine**			
					Canister purge valve (CPV) commanded	= TRUE -		
					Canister vent valve (CVV) commanded	= TRUE -		
					P0446, P0496, P0455 diagnostics have	= TRUE -		
					Ambient temperature	<= -7.5 deg C		
					Ambient temperature	>= 35.3 deg C		
					Engine coolant temperature at start	<= 100.5 deg C		
					Engine coolant temperature at start -	<= 99.8 deg C		
					Engine had been running for time	> 600 sec		
					Driving distance covered in current dcy	>= 8100 m		
					(			
					Load factor of charcoal canister	< 63.99805 factor		
					for time	> 30 sec		
					)			
					Barometric pressure	> 70 kPa		
					Engine coolant temperature at engine off	> 60 deg C		
					Battery voltage	> 10.9 V		
					Condition - refueling detected	= FALSE -		
					Condition filler cap has been opened	= FALSE -		
					Condition - Sloshing of fuel detected	= FALSE -		
						-		
					EWMA Filter Normal Mode:			
					Filter coefficient for stabilized mode	= 0.179688 factor		
					Number of measurements for stabilized	= 6		
					EWMA Filter Fast Initial Response (FIR)			
					Filter coefficient for Fast Initial Response	= 0.200012 factor		
					EWMA Filter Rapid Response (RR)			
					Filter coefficient for Rapid Responde mode	= 0.203125 factor		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
Fuel System, Bank 1	P0171	Monitoring of maximum lambda controller deviation when the lambda controller mean value is greater than the calibrated threshold	Deviation of fast lambda controller mean value from 1.0	> 0.230011 -	(		10 sec	2 Trips

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					(			
					(			
					Unrestricted operation of Upstream closed loop lambda controller is active	= TRUE -		
					(			
					Enleanment protection of lambda controller	= FALSE -		
					(			
					Large deceleration enleanment protection of lambda controller	= FALSE -		
					(			
					Relative fuel mass transient component threshold for deceleration enleanment	>= -10.0078 %/seg		
					Relative fuel mass transient component threshold for deceleration enleanment in bank 2	>= -10.0078 %/seg		
					)			
					for time (See-Look Up-table #P2177-5)	<= 0.3 to 1 sec		
					)			
					OR			
					(			
					Large acceleration enrichment protection of lambda controller	= FALSE -		
					(			
					Relative fuel mass transient componet threshold for acceleration enrichment	<= 19.0078 %/seg		
					and			
					Relative fuel mass transient componet threshold for acceleration enrichment	<= 19.0078 %/seg		
					)			
					for time (See-Look Up-table #P2177-6)	<= 0.5 to 1 sec		
					)			
					)			
					and			
					Upstream Lambda closed loop control for bank 1	= TRUE -		
					(			
					Lambda control after injection cut off or fuel cut off is disabled	= FALSE -		
					and			
					Lambda swtiched ON after fuel cutoff	= TRUE -		
					(			
					Fuel cut off is active	= FALSE -		
					and			
					(			
					time counter for after fuel cut off for enabling lambda control	> 8 sec		
					OR			
					(			
					Absolute value of diffence in lambda of bank 1	<= 0.1001 -		
					and			
					Difference of counter time and plant time constant a-(b+c)	> 0 sec		
					where a is time counter for after fuel cut off for enabling lambda control			
					b is plant time constant for continuous air/fuel control			
					c is plant parameter for dead time for lambda control			
					)			
					)			
					)			
					and			
					LSU sensor upstream to catalyst ready for operation	= TRUE -		
					(			
					Level of lambda sensor 1 signal quality	<= 12 -		
					)			
					and			
					OBDII error flag, lambda control disabled	= FALSE -		
					(			
					Injector power stage fault is active	= FALSE -		
					and			
					Camshaft fault in critical operating range present and MAF is main air charge senor	= FALSE -		
					)			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					and			
					(			
					lambda control is active since warmup is finished	= TRUE -		
					and			
					Relative air charge	> 0 %		
					(			
					for time	>= 2 sec		
					)			
					)			
					and			
					Lamda control active due to GDI mode change	= TRUE -		
					(			
					GDI mode homogeneous	= TRUE -		
					for time	>= 0.8 sec		
					)			
					)			
					and			
					lambda value referred to sensor fitting location	>= 0.6499 -		
					and			
					Minimum injection time limitation for GDI mode is active	= FALSE -		
					)			
					and			
					Width of dead zone for lambda control deviation in case of scavenging	< 0.999969 -		
					)			
					(			
					Canister purge valve is active and open	= FALSE -		
					OR			
					Integral of canister purge mass flow after a longer purge stop	>= 11.32 g		
					OR			
					Condition for limit control	= TRUE -		
					(			
					(			
					Canister purge rate reduction because of fuel rate controller deviations	>= 0 -		
					and			
					Canister purge mass flow (see Look-Up-Table #P0171-1)	<= 0 to 0.833333333333333 g/sec		
					)			
					for time	>= 10 sec		
					)			
					and			
					Engine Coolant temperature	>= 0 deg C		
					and			
					Number of injections for enabling fuel mixture adaptation diagnosis	>= 700 -		
					and			
					high amount fuel in the oil	= FALSE -		
					(			
					Maximum proportion of evaporating fuel from the engine oil to the fuel demand	< 0.148437 -		
					)			
					)			
					for time	>= 100 sec		
					)			
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
	P0172	Monitoring of minimum lambda controller deviation when the lambda controller mean value is lesser than the calibrated threshold	Deviation of fast lambda controller mean value from 1.0	< -0.230011 -	(		10 sec	2 Trips
					(			
					(			
					Unrestricted operation of Upstream closed loop lambda controller is active	= TRUE -		
					(			
					Enleanment protection of lambda controller	= FALSE -		
					(			
					Large deceleration enleanment protection of lambda controller	= FALSE -		
					(			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					Relative fuel mass transient component threshold for deceleration enleanment	>=	-10.0078	%/seg		
					Relative fuel mass transient component threshold for deceleration enleanment in bank 2	>=	-10.0078	%/seg		
					)					
					for time (See-Look Up-table #P2177-5)	<=	0.3 to 1	sec		
					)					
					OR					
					(					
					Large acceleration enrichment protection of lambda controller	=	FALSE	-		
					(					
					Relative fuel mass transient componet threshold for acceleration enrichment	<=	19.0078	%/seg		
					and					
					Relative fuel mass transient componet threshold for acceleration enrichment	<=	19.0078	%/seg		
					)					
					for time (See-Look Up-table #P2177-6)	<=	0.5 to 1	sec		
					)					
					)					
					and					
					Upstream Lambda closed loop control for bank 1	=	TRUE	-		
					(					
					Lambda control after injection cut off or fuel cut off is disabled	=	FALSE	-		
					and					
					Lambda swtiched ON after fuel cutoff	=	TRUE	-		
					(					
					Fuel cut off is active	=	FALSE	-		
					and					
					(					
					time counter for after fuel cut off for enabling lambda control	>	8	sec		
					OR					
					(					
					Absolute value of diffence in lambda of bank 1	<=	0.1001	-		
					and					
					Difference of counter time and plant time constant a-(b+c) where a is time counter for after fuel cut off for enabling lambda control b is plant time constant for continuous air/fuel control c is plant parameter for dead time for lambda control	>	0	sec		
					)					
					)					
					)					
					and					
					LSU sensor upstream to catalyst ready for operation	=	TRUE	-		
					(					
					Level of lambda sensor 1 signal quality	<=	12	-		
					)					
					and					
					OBDII error flag, lambda control disabled	=	FALSE	-		
					(					
					Injector power stage fault is active	=	FALSE	-		
					and					
					Camshaft fault in critical operating range present and MAF is main air charge senor	=	FALSE	-		
					)					
					and					
					(					
					lambda control is active since warmup is finished	=	TRUE	-		
					and					
					Relative air charge	>	0	%		
					(					
					for time	>=	2	sec		
					)					
					)					
					and					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Lamda control active due to GDI mode change	= TRUE -		
					(			
					GDI mode homogeneous	= TRUE -		
					for time	>= 0.8 sec		
					)			
					)			
					and			
					lambda value referred to sensor fitting location	>= 0.6499 -		
					and			
					Minimum injection time limitation for GDI mode is active	= FALSE -		
					)			
					and			
					Width of dead zone for lambda control deviation in case of scavenging	< 0.999969 -		
					)			
					(			
					Canister purge valve is active and open	= FALSE -		
					OR			
					Integral of canister purge mass flow after a longer purge stop	>= 11.32 g		
					OR			
					Condition for limit control	= TRUE -		
					(			
					(			
					Canister purge rate reduction because of fuel rate controller deviations	>= 0 -		
					and			
					Canister purge mass flow (see Look-Up-Table #P0171-1)	<= 0 to 0.833333333333333 g/sec		
					)			
					for time	>= 10 sec		
					)			
					and			
					Engine Coolant temperature	>= 0 deg C		
					and			
					Number of injections for enabling fuel mixture adaptation diagnosis	>= 700 -		
					and			
					high amount fuel in the oil	= FALSE -		
					(			
					Maximum proportion of evaporating fuel from the engine oil to the fuel demand	< 0.148437 -		
					)			
					)			
					for time	>= 100 sec		
					)			
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
Fuel System, Bank 2	P0174	Monitoring of maximum lambda controller deviation when the lambda controller mean value is greater than the calibrated threshold	Deviation of fast lambda controller mean value from 1.0 of bank 2	> 0.230011 -	(		10 sec	2 Trips
					(			
					(			
					Unrestricted operation of Upstream closed loop lambda controller of bank 2 is active	= TRUE -		
					(			
					Enleanment protection of lambda controller of bank 2	= FALSE -		
					(			
					Large deceleration enleanment protection of lambda controller	= FALSE -		
					(			
					Relative fuel mass transient component threshold for deceleration enleanment	>= -10.0078 %/seg		
					Relative fuel mass transient component threshold for deceleration enleanment in bank 2	>= -10.0078 %/seg		
					)			
					for time (See-Look Up-table #P2177-5)	<= 0.3 to 1 sec		
					)			
					OR			
					(			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					Large acceleration enrichment protection of lambda controller	=	FALSE	-		
					(					
					Relative fuel mass transient componet threshold for acceleration enrichment	<=	19.0078	%/seg		
					and					
					Relative fuel mass transient componet threshold for acceleration enrichment	<=	19.0078	%/seg		
					)					
					for time (See-Look Up-table #P2177-6)	<=	0.5 to 1	sec		
					)					
					)					
					and					
					Upstream Lambda closed loop control for bank 2	=	TRUE	-		
					(					
					Lambda control after injection cut off or fuel cut off of bank 2 is disabled	=	FALSE	-		
					and					
					Lambda swtiched ON after fuel cutoff of bank 2	=	TRUE	-		
					(					
					Fuel cut off is active	=	FALSE	-		
					and					
					(					
					time counter for after fuel cut off for enabling lambda control	>	8	sec		
					OR					
					(					
					Absolute value of diffence in lambda of bank 2	<=	0.1001	-		
					and					
					Difference of counter time and plant time constant a-(b+c)	>	0	sec		
					where a is time counter for after fuel cut off for enabling lambda control					
					b is plant time constant for continuous air/fuel control					
					c is plant parameter for dead time for lambda control					
					)					
					)					
					)					
					and					
					LSU sensor upstream to catalyst ready for operation in bank 2	=	TRUE	-		
					(					
					Level of lambda sensor 1 signal quality of bank 2	<=	12	-		
					)					
					and					
					OBDII error flag, lambda control of bank 2 disabled	=	FALSE	-		
					(					
					Injector power stage fault is active	=	FALSE	-		
					and					
					Camshaft fault in critical operating range present and MAF is main air charge senor	=	FALSE	-		
					)					
					and					
					(					
					lambda control is active since warmup is finished	=	TRUE	-		
					and					
					Relative air charge	>	0	%		
					(					
					for time	>=	2	sec		
					)					
					)					
					and					
					Lamda control active due to GDI mode change	=	TRUE	-		
					(					
					GDI mode homogeneous	=	TRUE	-		
					for time	>=	0.8	sec		
					)					
					)					
					and					
					lambda value referred to sensor fitting location of bank 2	>=	0.6499	-		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					and			
					Minimum injection time limitation for GDI mode of bank 2 is active	= FALSE -		
					)			
					and			
					Width of dead zone for lambda control deviation in case of scavenging	< 0.999969 -		
					)			
					(			
					Canister purge valve is active and open	= FALSE -		
					OR			
					Integral of canister purge mass flow after a longer purge stop	>= 11.32 g		
					OR			
					Condition for limit control	= TRUE -		
					(			
					(			
					Canister purge rate reduction because of fuel rate controller deviations	>= 0 -		
					and			
					Canister purge mass flow (see Look-Up-Table #P0171-1)	<= 0 to 0.833333333333333 g/sec		
					)			
					for time	>= 10 sec		
					)			
					and			
					Engine Coolant temperature	>= 0 deg C		
					and			
					Number of injections for enabling fuel mixture adaptation diagnosis	>= 700 -		
					and			
					high amount fuel in the oil	= FALSE -		
					(			
					Maximum proportion of evaporating fuel from the engine oil to the fuel demand	< 0.148437 -		
					)			
					)			
					for time	>= 100 sec		
					)			
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
	P0175	Monitoring of fast lambda controller mean value against Minimum rationality threshold	Deviation of fast lambda controller mean value from 1.0 corrected with P-part controller, bank 2	< -0.230011 -	(		10 sec	2 Trips
					(			
					(			
					Unrestricted operation of Upstream closed loop lambda controller of bank 2 is active	= TRUE -		
					(			
					Enleanment protection of lambda controller of bank 2	= FALSE -		
					(			
					Large deceleration enleanment protection of lambda controller	= FALSE -		
					(			
					Relative fuel mass transient component threshold for deceleration enleanment	>= -10.0078 %/seg		
					Relative fuel mass transient component threshold for deceleration enleanment in bank 2	>= -10.0078 %/seg		
					)			
					for time (See-Look Up-table #P2177-5)	<= 0.3 to 1 sec		
					)			
					OR			
					(			
					Large acceleration enrichment protection of lambda controller	= FALSE -		
					(			
					Relative fuel mass transient componet threshold for acceleration enrichment	<= 19.0078 %/seg		
					and			
					Relative fuel mass transient componet threshold for acceleration enrichment	<= 19.0078 %/seg		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					)					
					for time (See-Look Up-table #P2177-6)	<=	0.5 to 1	sec		
					)					
					)					
					and					
					Upstream Lambda closed loop control for bank 2	=	TRUE	-		
					(					
					Lambda control after injection cut off or fuel cut off of bank 2 is disabled	=	FALSE	-		
					and					
					Lambda swtiched ON after fuel cutoff of bank 2	=	TRUE	-		
					(					
					Fuel cut off is active	=	FALSE	-		
					and					
					(					
					time counter for after fuel cut off for enabling lambda control	>	8	sec		
					OR					
					(					
					Absolute value of diffence in lambda of bank 2	<=	0.1001	-		
					and					
					Difference of counter time and plant time constant a-(b+c)	>	0	sec		
					where a is time counter for after fuel cut off for enabling lambda control					
					b is plant time constant for continuous air/fuel control					
					c is plant parameter for dead time for lambda control					
					)					
					)					
					)					
					and					
					LSU sensor upstream to catalyst ready for operation in bank 2	=	TRUE	-		
					(					
					Level of lambda sensor 1 signal quality of bank 2	<=	12	-		
					)					
					and					
					OBDII error flag, lambda control of bank 2 disabled	=	FALSE	-		
					(					
					Injector power stage fault is active	=	FALSE	-		
					and					
					Camshaft fault in critical operating range present and MAF is main air charge senor	=	FALSE	-		
					)					
					and					
					(					
					lambda control is active since warmup is finished	=	TRUE	-		
					and					
					Relative air charge	>	0	%		
					(					
					for time	>=	2	sec		
					)					
					)					
					and					
					Lamda control active due to GDI mode change	=	TRUE	-		
					(					
					GDI mode homogeneous	=	TRUE	-		
					for time	>=	0.8	sec		
					)					
					)					
					and					
					lambda value referred to sensor fitting location of bank 2	>=	0.6499	-		
					and					
					Minimum injection time limitation for GDI mode of bank 2 is active	=	FALSE	-		
					)					
					and					
					Width of dead zone for lambda control deviation in case of scavenging	<	0.999969	-		
					)					
					(					
					Canister purge valve is active and open	=	FALSE	-		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					OR			
					Integral of canister purge mass flow after a longer purge stop	>= 11.32 g		
					OR			
					Condition for limit control	= TRUE -		
					(			
					(			
					Canister purge rate reduction because of fuel rate controller deviations	>= 0 -		
					and			
					Canister purge mass flow (see Look-Up-Table #P0171-1)	<= 0 to 0.833333333333333 g/sec		
					)			
					for time	>= 10 sec		
					)			
					and			
					Engine Coolant temperature	>= 0 deg C		
					and			
					Number of injections for enabling fuel mixture adaptation diagnosis	>= 700 -		
					and			
					high amount fuel in the oil	= FALSE -		
					(			
					Maximum proportion of evaporating fuel from the engine oil to the fuel demand	< 0.148437 -		
					)			
					)			
					for time	>= 100 sec		
					)			
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
Fuel Trim Bank 1	P2177	Multiplicative part of the Long Term Fuel Trim for Bank 1 in gasoline mode is greater than a calibrated threshold.	Multiplicative part of LTFT, Bank 1	> 1.230011 -	LTFT Multiplicative mixture adaptation bank 1 is active	= TRUE -	multiple	2 Trips
					(			
					LTFT multiplicative part Bank 1 Integrator is stable which is of the following conditions	= TRUE -		
					(			
					(			
					Condition diagnostic thresholds of multiplicative correction currently exceeded of bank 1 is stable	= TRUE -		
					(			
					Multiplicative part of LTFT for bank 1	> 1.230011 -		
					OR			
					Multiplicative part of LTFT for bank 1	< 0.769989 -		
					)			
					OR			
					Similar conditions for multiplicative fuel adaptation fulfilled	= TRUE -		
					(			
					Difference between Measured and reference Engine speed	<= 375 rpm		
					Difference between reference and measured Engine speed	<= 375 rpm		
					Difference between measured load value to reference load	<= 20 -		
					Difference between reference load value to measured load	<= 20 -		
					)			
					)			
					LTFT multiplicative part Bank 1 is stable, which is the following conditions for time	>= 10 sec		
					(			
					(			
					Condition diagnostic thresholds of multiplicative correction currently exceeded of bank 1 is stable	= TRUE -		
					(			
					Absolute change of LTFT multiplicative part, Bank 1	<= 1.999969 -		
					)			
					OR			
					Absolute change of LTFT multiplicative part, Bank 1	<= 0.029999 -		
					)			
					(			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 TEST GROUP: KGMXV04.2088 EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					Condition diagnostic thresholds of multiplicative correction currently exceeded of bank 1 is stable	=	TRUE	-		
					OR					
					Change in short term fuel trim, Bank 1	<=	0.049988	-		
					)					
					Absolute difference between LTFT additive part, Bank 1 and its fixed value at beginning of multiplicative steady state phase	<=	0.75	%		
					Multiplicative mixture adaptation is active	=	TRUE	-		
					(					
					(					
					Multiplicative mixture adaptation is active, which is the following conditions:	=	TRUE	-		
					(					
					Fra operational readiness independent of the operating mode is active, which is the following conditions for time	>=	2	sec		
					(					
					Fundamental operating mode independent operation readiness of mixture adaption	=	TRUE	-		
					(					
					(					
					Condition error suspicion in mixture adaptation	=	TRUE	-		
					(					
					Coolant Engine Temperature	>=	Min(C, D)	deg C		
					where C - cut-in temperature adaptive precontrol for lambda closed-loop control	=	54.8	deg C		
					where D - cut-in temperature fuel mixture adaptation in case of error suspicion	=	54.8	deg C		
					)					
					OR					
					Coolant Engine Temperature	>=	54.8	deg C		
					)					
					Basic willingness of fuel mixture adaptation, except engine temperature	=	TRUE	-		
					(					
					Intake air temperature	<	90	deg C		
					Conditiion of Wide Open Throttle	=	FALSE	-		
					(					
					Propulsion torque after driving assistance coordination	<	3276.7	Nm		
					)					
					Increased tolerances of air charge determination expected	=	FALSE	-		
					Maximum proportion of evaporating fuel from the engine oil to the fuel demand (model based)	<=	0	-		
					Ratio total charge to charge in cylinder	<	15	-		
					)					
					(					
					Number of injections since start	>=	1200	-		
					OR					
					Number of injections since start	>=	1000	-		
					)					
					)					
					FRA adaption physically enabled	=	TRUE	-		
					(					
					Torque commanded to charge control (see Look-Up-Table #P2177-2)	>=	8.00018 to 99.98932	%		
					Torque commanded to charge control (see Look-Up-Table #P2177-1)	<=	0 to 44.99969	%		
					)					
					)					
					Operating mode dependent Readiness LRA	=	TRUE	-		
					(					
					(					
					Lambda closed loop control upstream catalyst, bank 1	=	TRUE	-		
					(					
					Enleanment protection of lambda controller	=	FALSE	-		
					(					
					(					
					Large deceleration enleanment protection of lambda controller	=	FALSE	-		
					(					
					Relative fuel mass transient component threshold for deceleration enleanment	>=	-10.0078	%/seg		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					Relative fuel mass transient component threshold for deceleration enleanment in bank 2	>=	-10.0078	%/seg		
					)					
					for time (see Look-Up-Table #P2177-6)	>=	0.5 to 1	sec		
					)					
					OR					
					(					
					Large acceleration enrichment protection of lambda controller	=	FALSE	-		
					(					
					Relative fuel mass transient componet threshold for acceleration enrichment	<=	19.0078	%/seg		
					Relative fuel mass transient componet threshold for acceleration enrichment	<=	19.0078	%/seg		
					)					
					for time (see Look-Up-Table #P2177-5)	>=	0.3 to 1	sec		
					)					
					)					
					Upstream Lambda closed loop control for bank 1	=	TRUE	-		
					(					
					Lambda control disabled during after cylinder cut−off	=	FALSE	-		
					Lambda swtiched ON after fuel cutoff	=	TRUE	-		
					(					
					Fuel cut off is active	=	FALSE	-		
					(					
					Time running down after fuel cut−off for enabling lambda control	>	8	sec		
					OR					
					(					
					Absolute value of diffence in lambda of bank 1	<=	0.1001	-		
					Difference of counter time and plant time constant a-(b+c) where a is Time running down after fuel cut−off for enabling lambda control b is plant time constant for continuous air/fuel control c is plant parameter for dead time for lambda control	>	0	sec		
					)					
					)					
					)					
					LSU sensor upstream to catalyst ready for operation	=	TRUE	-		
					(					
					Level of lambda sensor 1 signal quality	<=	12	-		
					)					
					Lambda control disabled by a fault	=	FALSE	-		
					(					
					Catalyst damaging misfire rate exceeded	=	FALSE	-		
					and					
					Injector power stage fault is active	=	FALSE	-		
					Camshaft fault in critical operating range present and MAF is main air charge sensor	=	FALSE	-		
					)					
					lambda control is active since warmup is finished	=	TRUE	-		
					Relative air charge	>	0	%		
					(					
					for time	>=	2	sec		
					)					
					Lamda control active due to GDI mode change	=	TRUE	-		
					(					
					GDI mode homogeneous	=	TRUE	-		
					for time	>=	0.8	sec		
					)					
					)					
					Lambda set point	>=	0.6499	-		
					Minimum injection time limitation for GDI mode is active	=	FALSE	-		
					Width of dead zone for lambda control deviation	<	0.999969	-		
					(					
					Width of dead zone for lambda control deviation	<	0	-		
					OR					
					Lambda control continuos error	>	0	-		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					)					
					)					
					OR					
					(					
					Unrestricted operation of Upstream closed loop lambda controller of bank 2 is active	=	TRUE	-		
					(					
					Enleanment protection of lambda controller	=	FALSE	-		
					(					
					(					
					Large deceleration enleanment protection of lambda controller	=	FALSE	-		
					(					
					Relative fuel mass transient component threshold for deceleration enleanment	>=	-10.0078	%/seg		
					Relative fuel mass transient component threshold for deceleration enleanment in bank 2	>=	-10.0078	%/seg		
					)					
					for time (see Look-Up-Table #P2177-6)	<=	0.5 to 1	sec		
					)					
					OR					
					(					
					Large acceleration enrichment protection of lambda controller	=	FALSE	-		
					(					
					Relative fuel mass transient componet threshold for acceleration enrichment	<=	19.0078	%/seg		
					Relative fuel mass transient componet threshold for acceleration enrichment	<=	19.0078	%/seg		
					)					
					for time (see Look-Up-Table #P2177-5)	<=	0.3 to 1	sec		
					)					
					)					
					Upstream Lambda closed loop control for bank 2	=	TRUE	-		
					(					
					Lambda control disabled during after cylinder cut−off	=	FALSE	-		
					Lambda swtiched ON after fuel cutoff	=	TRUE	-		
					(					
					Fuel cut off is active	=	FALSE	-		
					(					
					Time running down after fuel cut−off for enabling lambda control	>	8	sec		
					OR					
					(					
					Absolute value of diffence in lambda of bank 2	<=	0.1001	-		
					Difference of counter time and plant time constant	>	0	sec		
					a-(b+c)					
					where a is Time running down after fuel cut−off for enabling lambda control					
					b is plant time constant of bank 2 for continuous air/fuel control					
					c is plant parameter of bank 2 for dead time for lambda control					
					)					
					)					
					)					
					LSU sensor upstream to catalyst ready for operation	=	TRUE	-		
					(					
					Level of lambda sensor 1, bank 2 signal quality	<=	12	-		
					)					
					Lambda control disabled by a fault	=	FALSE	-		
					(					
					Catalyst damaging misfire rate exceeded	=	FALSE	-		
					Injector power stage fault is active	=	FALSE	-		
					Camshaft fault in critical operating range present and MAF is main air charge sensor	=	FALSE	-		
					)					
					lambda control is active since warmup is finished	=	TRUE	-		
					Relative air charge	>	0	%		
					(					
					for time	>=	2	sec		
					)					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Lamda control active due to GDI mode change	= TRUE -		
					(			
					GDI mode homogeneous	= TRUE -		
					for time	>= 0.8 sec		
					)			
					)			
					Lambda set point	>= 0.6499 -		
					Minimum injection time limitation for GDI mode of bank 2 is active	= FALSE -		
					Width of dead zone for Width of dead zone for lambda control deviation	< 0.999969 -		
					(			
					Width of dead zone for lambda control deviation	= 0 -		
					OR			
					Lambda control continuos error	> 0 -		
					)			
					)			
					for time	>= 3 sec		
					)			
					(			
					Difference between lambda value referenced to sensor fitting of bank 1 and bank 2	>= 0 -		
					Lambda set point	< 1.04004 -		
					(			
					Detection of fuel mixture adaption	= TRUE -		
					(			
					Lambda set point of bank 2	> 0.8999 -		
					)			
					OR			
					Lambda set point of bank 2	> 0.95996 -		
					)			
					for time	>= Max(A,B) sec		
					where A - delay time for lambda fuel adaption (rich condition)	0 sec		
					where B - delay time for lambda fuel adaption (lean condition)	0 sec		
					)			
					Limitation due to fuel in oil is deactivated	= TRUE -		
					Limitation due to fuel in oil is deactivated for bank 2	= TRUE -		
					)			
					(			
					Half Engine mode is deactivated	= TRUE -		
					for time	>= 10 sec		
					)			
					)			
					Lambda closed loop control upstream catalyst, bank 1	= TRUE -		
					)			
					Multiplicative adaptation correction factor	> 0 -		
					)			
					)			
					)			
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
Fuel Trim Bank 1	P2178	Multiplicative part of the Long Term Fuel Trim for Bank 1 in gasoline mode is less than a calibrated threshold.	Multiplicative part of LTFT for bank 1	< 0.769989 -	LTFT Multiplicative mixture adaptation bank 1 is active	= TRUE -	multiple	2 Trips
					(			
					LTFT multiplicative part Bank 1 Integrator is stable which is of the following conditions	= TRUE -		
					(			
					(			
					Condition diagnostic thresholds of multiplicative correction currently exceeded of bank 1 is stable	= TRUE -		
					(			
					Multiplicative part of LTFT for bank 1	> 1.230011 -		
					OR			
					Multiplicative part of LTFT for bank 1	< 0.769989 -		
					)			
					OR			
					Similar conditions for multiplicative fuel adaptation fulfilled	= TRUE -		
					(			
					Difference between Measured and reference Engine speed	<= 375 rpm		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					Difference between reference and measured Engine speed	<=	375	rpm		
					Difference between measured load value to reference load	<=	20	-		
					Difference between reference load value to measured load	<=	20	-		
					)					
					)					
					LTFT multiplicative part Bank 1 is stable, which is the following conditions for time	>=	10	sec		
					(					
					(					
					Condition diagnostic thresholds of multiplicative correction currently exceeded of bank 1 is stable	=	TRUE	-		
					(					
					Absolute change of LTFT multiplicative part, Bank 1	<=	1.999969	-		
					)					
					OR					
					Absolute change of LTFT multiplicative part, Bank 1	<=	0.029999	-		
					)					
					(					
					Condition diagnostic thresholds of multiplicative correction currently exceeded of bank 1 is stable	=	TRUE	-		
					OR					
					Change in short term fuel trim, Bank 1	<=	0.049988	-		
					)					
					Absolute difference between LTFT additive part, Bank 1 and its fixed value at beginning of multiplicative steady state phase	<=	0.75	%		
					Multiplicative mixture adaptation is active	=	TRUE	-		
					(					
					(					
					Multiplicative mixture adaptation is active, which is the following conditions:	=	TRUE	-		
					(					
					Fra operational readiness independent of the operating mode is active, which is the following conditions for time	>=	2	sec		
					(					
					Fundamental operating mode independent operation readiness of mixture adaption	=	TRUE	-		
					(					
					(					
					Condition error suspicion in mixture adaptation	=	TRUE	-		
					(					
					Coolant Engine Temperature	>=	Min(C, D)	deg C		
					where C - cut-in temperature adaptive precontrol for lambda closed-loop control	=	54.8	deg C		
					where D - cut-in temperature fuel mixture adaptation in case of error suspicion	=	54.8	deg C		
					)					
					OR					
					Coolant Engine Temperature	>=	54.8	deg C		
					)					
					Basic willingness of fuel mixture adaptation, except engine temperature	=	TRUE	-		
					(					
					Intake air temperature	<	90	deg C		
					Conditiion of Wide Open Throttle	=	FALSE	-		
					(					
					Propulsion torque after driving assistance coordination	<	3276.7	Nm		
					)					
					Increased tolerances of air charge determination expected	=	FALSE	-		
					Maximum proportion of evaporating fuel from the engine oil to the fuel demand (model based)	<=	0	-		
					Ratio total charge to charge in cylinder	<	15	-		
					)					
					(					
					Number of injections since start	>=	1200	-		
					OR					
					Number of injections since start	>=	1000	-		
					)					
					)					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					FRA adaption physically enabled	=	TRUE	-		
					(					
					Torque commanded to charge control (see Look-Up-Table #P2177-2)	>=	8.00018 to 99.98932	%		
					Torque commanded to charge control (see Look-Up-Table #P2177-1)	<=	0 to 44.99969	%		
					)					
					)					
					Operating mode dependent Readiness LRA	=	TRUE	-		
					(					
					(					
					Lambda closed loop control upstream catalyst, bank 1	=	TRUE	-		
					(					
					Enleanment protection of lambda controller	=	FALSE	-		
					(					
					(					
					Large deceleration enleanment protection of lambda controller	=	FALSE	-		
					(					
					Relative fuel mass transient component threshold for deceleration enleanment	>=	-10.0078	%/seg		
					Relative fuel mass transient component threshold for deceleration enleanment in bank 2	>=	-10.0078	%/seg		
					)					
					for time (see Look-Up-Table #P2177-6)	>=	0.5 to 1	sec		
					)					
					OR					
					(					
					Large acceleration enrichment protection of lambda controller	=	FALSE	-		
					(					
					Relative fuel mass transient componet threshold for acceleration enrichment	<=	19.0078	%/seg		
					Relative fuel mass transient componet threshold for acceleration enrichment	<=	19.0078	%/seg		
					)					
					for time (see Look-Up-Table #P2177-5)	>=	0.3 to 1	sec		
					)					
					)					
					Upstream Lambda closed loop control for bank 1	=	TRUE	-		
					(					
					Lambda control disabled during after cylinder cut−off	=	FALSE	-		
					Lambda swtiched ON after fuel cutoff	=	TRUE	-		
					(					
					Fuel cut off is active	=	FALSE	-		
					(					
					Time running down after fuel cut−off for enabling lambda control	>	8	sec		
					OR					
					(					
					Absolute value of diffence in lambda of bank 1	<=	0.1001	-		
					Difference of counter time and plant time constant a-(b+c) where a is Time running down after fuel cut−off for enabling lambda control b is plant time constant for continuous air/fuel control c is plant parameter for dead time for lambda control	>	0	sec		
					)					
					)					
					)					
					LSU sensor upstream to catalyst ready for operation	=	TRUE	-		
					(					
					Level of lambda sensor 1 signal quality	<=	12	-		
					)					
					Lambda control disabled by a fault	=	FALSE	-		
					(					
					Catalyst damaging misfire rate exceeded	=	FALSE	-		
					and					
					Injector power stage fault is active	=	FALSE	-		
					Camshaft fault in critical operating range present and MAF is main air charge sensor	=	FALSE	-		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					)					
					lambda control is active since warmup is finished	=	TRUE	-		
					Relative air charge	>	0	%		
					(					
					for time	>=	2	sec		
					)					
					Lamda control active due to GDI mode change	=	TRUE	-		
					(					
					GDI mode homogeneous	=	TRUE	-		
					for time	>=	0.8	sec		
					)					
					)					
					Lambda set point	>=	0.6499	-		
					Minimum injection time limitation for GDI mode is active	=	FALSE	-		
					Width of dead zone for lambda control deviation	<	0.999969	-		
					(					
					Width of dead zone for lambda control deviation	<	0	-		
					OR					
					Lambda control continuos error	>	0	-		
					)					
					)					
					OR					
					(					
					Unrestricted operation of Upstream closed loop lambda controller of bank 2 is active	=	TRUE	-		
					(					
					Enleanment protection of lambda controller	=	FALSE	-		
					(					
					(					
					Large deceleration enleanment protection of lambda controller	=	FALSE	-		
					(					
					Relative fuel mass transient component threshold for deceleration enleanment	>=	-10.0078	%/seg		
					Relative fuel mass transient component threshold for deceleration enleanment in bank 2	>=	-10.0078	%/seg		
					)					
					for time (see Look-Up-Table #P2177-6)	<=	0.5 to 1	sec		
					)					
					OR					
					(					
					Large acceleration enrichment protection of lambda controller	=	FALSE	-		
					(					
					Relative fuel mass transient componet threshold for acceleration enrichment	<=	19.0078	%/seg		
					Relative fuel mass transient componet threshold for acceleration enrichment	<=	19.0078	%/seg		
					)					
					for time (see Look-Up-Table #P2177-5)	<=	0.3 to 1	sec		
					)					
					)					
					Upstream Lambda closed loop control for bank 2	=	TRUE	-		
					(					
					Lambda control disabled during after cylinder cut−off	=	FALSE	-		
					Lambda swtiched ON after fuel cutoff	=	TRUE	-		
					(					
					Fuel cut off is active	=	FALSE	-		
					(					
					Time running down after fuel cut−off for enabling lambda control	>	8	sec		
					OR					
					(					
					Absolute value of diffence in lambda of bank 2	<=	0.1001	-		
					Difference of counter time and plant time constant a-(b+c) where a is Time running down after fuel cut−off for enabling lambda control b is plant time constant of bank 2 for continuous air/fuel control c is plant parameter of bank 2 for dead time for lambda control	>	0	sec		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					)			
					)			
					)			
					LSU sensor upstream to catalyst ready for operation	= TRUE -		
					(			
					Level of lambda sensor 1, bank 2 signal quality	<= 12 -		
					)			
					Lambda control disabled by a fault	= FALSE -		
					(			
					Catalyst damaging misfire rate exceeded	= FALSE -		
					and			
					Injector power stage fault is active	= FALSE -		
					Camshaft fault in critical operating range present and MAF is main air charge sensor	= FALSE -		
					)			
					lambda control is active since warmup is finished	= TRUE -		
					Relative air charge	> 0 %		
					(			
					for time	>= 2 sec		
					)			
					Lamda control active due to GDI mode change	= TRUE -		
					(			
					GDI mode homogeneous	= TRUE -		
					for time	>= 0.8 sec		
					)			
					)			
					Lambda set point	>= 0.6499 -		
					Minimum injection time limitation for GDI mode of bank 2 is active	= FALSE -		
					Width of dead zone for Width of dead zone for lambda control deviation	< 0.999969 -		
					(			
					Width of dead zone for lambda control deviation	= 0 -		
					OR			
					Lambda control continuos error	> 0 -		
					)			
					)			
					for time	>= 3 sec		
					)			
					(			
					Difference between lambda value referenced to sensor fitting of bank 1 and bank 2	>= 0 -		
					Lambda set point	< 1.04004 -		
					(			
					Detection of fuel mixture adaption	= TRUE -		
					(			
					Lambda set point of bank 2	> 0.8999 -		
					)			
					OR			
					Lambda set point of bank 2	> 0.95996 -		
					)			
					for time	>= Max(A,B) sec		
					where A - delay time for lambda fuel adaption (rich condition)	0 sec		
					where B - delay time for lambda fuel adaption (lean condition)	0 sec		
					)			
					Limitation due to fuel in oil is deactivated	= TRUE -		
					Limitation due to fuel in oil is deactivated for bank 2	= TRUE -		
					)			
					(			
					Half Engine mode is deactivated	= TRUE -		
					for time	>= 10 sec		
					)			
					)			
					Lambda closed loop control upstream catalyst, bank 1	= TRUE -		
					)			
					Multiplicative adaptation correction factor	> 0 -		
					)			
					)			
					)			
					No pending or confirmed DTCs	= see sheet inhibit tables -		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
							Basic enable conditions met	=	see sheet enable tables	-		
Fuel Trim Bank 2	P2179	Multiplicative part of the Long Term Fuel Trim for Bank 2 in gasoline mode is greater than a calibrated threshold.	Multiplicative part of LTFT, Bank 2	>	1.230011	-	LTFT Multiplicative mixture adaptation bank 2 is active	=	TRUE	-	multiple	2 Trips
							(					
							LTFT multiplicative part Bank 2 Integrator is stable which is of the following conditions	=	TRUE	-		
							(					
							(					
							Condition diagnostic thresholds of multiplicative correction currently exceeded of bank 2 is stable	=	TRUE	-		
							(					
							Multiplicative part of LTFT for bank 2	>	1.230011	-		
							OR					
							Multiplicative part of LTFT for bank 2	<	0.769989	-		
							)					
							OR					
							Similar conditions for multiplicative fuel adaptation fulfilled for bank 2	=	TRUE	-		
							(					
							Difference between Measured and reference Engine speed, bank 2	<=	375	rpm		
							Difference between reference and measured Engine speed, bank 2	<=	375	rpm		
							Difference between measured load value to reference load, bank 2	<=	20	-		
							Difference between reference load value to measured load, bank 2	<=	20	-		
							)					
							)					
							LTFT multiplicative part Bank 2 is stable, which is the following conditions for time	>=	10	sec		
							(					
							(					
							Condition diagnostic thresholds of multiplicative correction currently exceeded of bank 2 is stable	=	TRUE	-		
							(					
							Absolute change of LTFT multiplicative part, Bank 2	<=	1.999969	-		
							)					
							OR					
							Absolute change of LTFT multiplicative part, Bank 2	<=	0.029999	-		
							)					
							(					
							Condition diagnostic thresholds of multiplicative correction currently exceeded of bank 2 is stable	=	TRUE	-		
							OR					
							Change in short term fuel trim, Bank 2	<=	0.049988	-		
							)					
							Absolute difference between LTFT additive part, Bank 1 and its fixed value at beginning of multiplicative steady state phase	<=	0.75	%		
							Multiplicative mixture adaptation is active, bank 2	=	TRUE	-		
							(					
							(					
							Multiplicative mixture adaptation is active, which is the following conditions:	=	TRUE	-		
							(					
							Fra operational readiness independent of the operating mode is active, which is the following conditions for time	>=	2	sec		
							(					
							Fundamental operating mode independent operation readiness of mixture adaption	=	TRUE	-		
							(					
							(					
							Condition error suspicion in mixture adaptation	=	TRUE	-		
							(					
							Coolant Engine Temperature	>=	Min(C, D)	deg C		
							where C - cut-in temperature adaptive precontrol for lambda closed-loop control	=	54.8	deg C		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 TEST GROUP: KGMXV04.2088 EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					where D - cut-in temperature fuel mixture adaptation in case of error suspicion	=	54.8	deg C		
					)					
					OR					
					Coolant Engine Temperature	>=	54.8	deg C		
					)					
					Basic willingness of fuel mixture adaptation, except engine temperature	=	TRUE	-		
					(					
					Intake air temperature	<	90	deg C		
					Conditiion of Wide Open Throttle	=	FALSE	-		
					(					
					Propulsion torque after driving assistance coordination	<	3276.7	Nm		
					)					
					Increased tolerances of air charge determination expected	=	FALSE	-		
					Maximum proportion of evaporating fuel from the engine oil to the fuel demand (model based)	<=	0	-		
					Ratio total charge to charge in cylinder	<	15	-		
					)					
					(					
					Number of injections since start	>=	1200	-		
					OR					
					Number of injections since start	>=	1000	-		
					)					
					)					
					FRA adaption physically enabled	=	TRUE	-		
					(					
					Torque commanded to charge control (see Look-Up-Table #P2177-2)	>=	8.00018 to 99.98932	%		
					Torque commanded to charge control (see Look-Up-Table #P2177-1)	<=	0 to 44.99969	%		
					)					
					)					
					Operating mode dependent Readiness LRA	=	TRUE	-		
					(					
					(					
					Lambda closed loop control upstream catalyst, bank 1	=	TRUE	-		
					(					
					Enleanment protection of lambda controller	=	FALSE	-		
					(					
					(					
					Large deceleration enleanment protection of lambda controller	=	FALSE	-		
					(					
					Relative fuel mass transient component threshold for deceleration enleanment	>=	-10.0078	%/seg		
					Relative fuel mass transient component threshold for deceleration enleanment in bank 2	>=	-10.0078	%/seg		
					)					
					for time (see Look-Up-Table #P2177-6)	>=	0.5 to 1	sec		
					)					
					OR					
					(					
					Large acceleration enrichment protection of lambda controller	=	FALSE	-		
					(					
					Relative fuel mass transient componet threshold for acceleration enrichment	<=	19.0078	%/seg		
					Relative fuel mass transient componet threshold for acceleration enrichmen	<=	19.0078	%/seg		
					)					
					for time (see Look-Up-Table #P2177-5)	>=	0.3 to 1	sec		
					)					
					)					
					Upstream Lambda closed loop control for bank 1	=	TRUE	-		
					(					
					Lambda control disabled during after cylinder cut−off	=	FALSE	-		
					Lambda swtiched ON after fuel cutoff	=	TRUE	-		
					(					
					Fuel cut off is active	=	FALSE	-		
					(					
					Time running down after fuel cut−off for enabling lambda control	>	8	sec		
					OR					
					(					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					Absolute value of diffence in lambda of bank 1	<=	0.1001	-		
					Difference of counter time and plant time constant a-(b+c) where a is Time running down after fuel cut−off for enabling lambda control b is plant time constant for continuous air/fuel control c is plant parameter for dead time for lambda control	>	0	sec		
					)					
					)					
					)					
					LSU sensor upstream to catalyst ready for operation	=	TRUE	-		
					(					
					Level of lambda sensor 1 signal quality	<=	12	-		
					)					
					Lambda control disabled by a fault	=	FALSE	-		
					(					
					Catalyst damaging misfire rate exceeded	=	FALSE	-		
					and					
					Injector power stage fault is active	=	FALSE	-		
					Camshaft fault in critical operating range present and MAF is main air charge sensor	=	FALSE	-		
					)					
					lambda control is active since warmup is finished	=	TRUE	-		
					Relative air charge	>	0	%		
					(					
					for time	>=	2	sec		
					)					
					Lamda control active due to GDI mode change	=	TRUE	-		
					(					
					GDI mode homogeneous	=	TRUE	-		
					for time	>=	0.8	sec		
					)					
					)					
					Lambda set point	>=	0.6499	-		
					Minimum injection time limitation for GDI mode is active	=	FALSE	-		
					Width of dead zone for lambda control deviation	<	0.999969	-		
					(					
					Width of dead zone for lambda control deviation	<	0	-		
					OR					
					Lambda control continuos error	>	0	-		
					)					
					)					
					OR					
					(					
					Unrestricted operation of Upstream closed loop lambda controller of bank 2 is active	=	TRUE	-		
					(					
					Enleanment protection of lambda controller	=	FALSE	-		
					(					
					(					
					Large deceleration enleanment protection of lambda controller	=	FALSE	-		
					(					
					Relative fuel mass transient component threshold for deceleration enleanment	>=	-10.0078	%/seg		
					Relative fuel mass transient component threshold for deceleration enleanment in bank 2	>=	-10.0078	%/seg		
					)					
					for time (see Look-Up-Table #P2177-6)	<=	0.5 to 1	sec		
					)					
					OR					
					(					
					Large acceleration enrichment protection of lambda controller	=	FALSE	-		
					(					
					Relative fuel mass transient componet threshold for acceleration enrichment	<=	19.0078	%/seg		
					Relative fuel mass transient componet threshold for acceleration enrichmen	<=	19.0078	%/seg		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					)					
					for time (see Look-Up-Table #P2177-5)	<=	0.3 to 1	sec		
					)					
					)					
					Upstream Lambda closed loop control for bank 2	=	TRUE	-		
					(					
					Lambda control disabled during after cylinder cut−off	=	FALSE	-		
					Lambda swtiched ON after fuel cutoff	=	TRUE	-		
					(					
					Fuel cut off is active	=	FALSE	-		
					(					
					Time running down after fuel cut−off for enabling lambda control	>	8	sec		
					OR					
					(					
					Absolute value of diffence in lambda of bank 2	<=	0.1001	-		
					Difference of counter time and plant time constant	>	0	sec		
					a-(b+c)					
					where a is Time running down after fuel cut−off for enabling lambda control					
					b is plant time constant of bank 2 for continuous air/fuel control					
					c is plant parameter of bank 2 for dead time for lambda control					
					)					
					)					
					)					
					LSU sensor upstream to catalyst ready for operation	=	TRUE	-		
					(					
					Level of lambda sensor 1, bank 2 signal quality	<=	12	-		
					)					
					Lambda control disabled by a fault	=	FALSE	-		
					(					
					Catalyst damaging misfire rate exceeded	=	FALSE	-		
					and					
					Injector power stage fault is active	=	FALSE	-		
					Camshaft fault in critical operating range present and MAF is main air charge sensor	=	FALSE	-		
					)					
					lambda control is active since warmup is finished	=	TRUE	-		
					Relative air charge	>	0	%		
					(					
					for time	>=	2	sec		
					)					
					Lamda control active due to GDI mode change	=	TRUE	-		
					(					
					GDI mode homogeneous	=	TRUE	-		
					for time	>=	0.8	sec		
					)					
					)					
					Lambda set point	>=	0.6499	-		
					Minimum injection time limitation for GDI mode of bank 2 is active	=	FALSE	-		
					Width of dead zone for Width of dead zone for lambda control deviation	<	0.999969	-		
					(					
					Width of dead zone for lambda control deviation	=	0	-		
					OR					
					Lambda control continuos error	>	0	-		
					)					
					)					
					for time	>=	3	sec		
					)					
					(					
					Difference between lambda value referenced to sensor fitting of bank 1 and bank 2	>=	0	-		
					Lambda set point	<	1.04004	-		
					(					
					Detection of fuel mixture adaption	=	TRUE	-		
					(					
					Lambda set point of bank 2	>	0.8999	-		
					)					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					OR			
					Lambda set point of bank 2	> 0.95996 -		
					)			
					for time	>= Max(A,B) sec		
					where A - delay time for lambda fuel adaption (rich condition)	0 sec		
					where B - delay time for lambda fuel adaption (lean condition)	0 sec		
					)			
					Limitation due to fuel in oil is deactivated	= TRUE -		
					Limitation due to fuel in oil is deactivated for bank 2	= TRUE -		
					)			
					(			
					Half Engine mode is deactivated	= TRUE -		
					for time	>= 10 sec		
					)			
					)			
					Lambda closed loop control upstream catalyst, bank 2	= TRUE -		
					)			
					Multiplicative adaptation correction factor of bank 2	> 0 -		
					)			
					)			
					)			
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
Fuel Trim Bank 2	P2180	Multiplicative part of the Long Term Fuel Trim for Bank 2 in gasoline mode is less than a calibrated threshold.	Multiplicative part of LTFT for bank 2	< 0.769989 -	LTFT Multiplicative mixture adaptation bank 2 is active	= TRUE -	multiple	2 Trips
					(			
					LTFT multiplicative part Bank 2 Integrator is stable which is of the following conditions	= TRUE -		
					(			
					(			
					Condition diagnostic thresholds of multiplicative correction currently exceeded of bank 2 is stable	= TRUE -		
					(			
					Multiplicative part of LTFT for bank 2	> 1.230011 -		
					OR			
					Multiplicative part of LTFT for bank 2	< 0.769989 -		
					)			
					OR			
					Similar conditions for multiplicative fuel adaptation fulfilled for bank 2	= TRUE -		
					(			
					Difference between Measured and reference Engine speed, bank 2	<= 375 rpm		
					Difference between reference and measured Engine speed, bank 2	<= 375 rpm		
					Difference between measured load value to reference load, bank 2	<= 20 -		
					Difference between reference load value to measured load, bank 2	<= 20 -		
					)			
					)			
					LTFT multiplicative part Bank 2 is stable, which is the following conditions for time	>= 10 sec		
					(			
					(			
					Condition diagnostic thresholds of multiplicative correction currently exceeded of bank 2 is stable	= TRUE -		
					(			
					Absolute change of LTFT multiplicative part, Bank 2	<= 1.999969 -		
					)			
					OR			
					Absolute change of LTFT multiplicative part, Bank 2	<= 0.029999 -		
					)			
					(			
					Condition diagnostic thresholds of multiplicative correction currently exceeded of bank 2 is stable	= TRUE -		
					OR			
					Change in short term fuel trim, Bank 2	<= 0.049988 -		
					)			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					Absolute difference between LTFT additive part, Bank 1 and its fixed value at beginning of multiplicative steady state phase	<=	0.75	%		
					Multiplicative mixture adaptation is active, bank 2	=	TRUE	-		
					(					
					(					
					Multiplicative mixture adaptation is active, which is the following conditions:	=	TRUE	-		
					(					
					Fra operational readiness independent of the operating mode is active, which is the following conditions for time	>=	2	sec		
					(					
					Fundamental operating mode independent operation readiness of mixture adaption	=	TRUE	-		
					(					
					(					
					Condition error suspicion in mixture adaptation	=	TRUE	-		
					(					
					Coolant Engine Temperature	>=	Min(C, D)	deg C		
					where C - cut-in temperature adaptive precontrol for lambda closed-loop control	=	54.8	deg C		
					where D - cut-in temperature fuel mixture adaptation in case of error suspicion	=	54.8	deg C		
					)					
					OR					
					Coolant Engine Temperature	>=	54.8	deg C		
					)					
					Basic willingness of fuel mixture adaptation, except engine temperature	=	TRUE	-		
					(					
					Intake air temperature	<	90	deg C		
					Conditiion of Wide Open Throttle	=	FALSE	-		
					(					
					Propulsion torque after driving assistance coordination	<	3276.7	Nm		
					)					
					Increased tolerances of air charge determination expected	=	FALSE	-		
					Maximum proportion of evaporating fuel from the engine oil to the fuel demand (model based)	<=	0	-		
					Ratio total charge to charge in cylinder	<	15	-		
					)					
					(					
					Number of injections since start	>=	1200	-		
					OR					
					Number of injections since start	>=	1000	-		
					)					
					)					
					FRA adaption physically enabled	=	TRUE	-		
					(					
					Torque commanded to charge control (see Look-Up-Table #P2177-2)	>=	8.00018 to 99.98932	%		
					Torque commanded to charge control (see Look-Up-Table #P2177-1)	<=	0 to 44.99969	%		
					)					
					)					
					Operating mode dependent Readiness LRA	=	TRUE	-		
					(					
					(					
					Lambda closed loop control upstream catalyst, bank 1	=	TRUE	-		
					(					
					Enleanment protection of lambda controller	=	FALSE	-		
					(					
					(					
					Large deceleration enleanment protection of lambda controller	=	FALSE	-		
					(					
					Relative fuel mass transient component threshold for deceleration enleanment	>=	-10.0078	%/seg		
					Relative fuel mass transient component threshold for deceleration enleanment in bank 2	>=	-10.0078	%/seg		
					)					
					for time (see Look-Up-Table #P2177-6)	>=	0.5 to 1	sec		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					)			
					OR			
					(			
					Large acceleration enrichment protection of lambda controller	= FALSE -		
					(			
					Relative fuel mass transient componet threshold for acceleration enrichment	<= 19.0078 %/seg		
					Relative fuel mass transient componet threshold for acceleration enrichmen	<= 19.0078 %/seg		
					)			
					for time (see Look-Up-Table #P2177-5)	>= 0.3 to 1 sec		
					)			
					)			
					Upstream Lambda closed loop control for bank 1	= TRUE -		
					(			
					Lambda control disabled during after cylinder cut−off	= FALSE -		
					Lambda swtiched ON after fuel cutoff	= TRUE -		
					(			
					Fuel cut off is active	= FALSE -		
					(			
					Time running down after fuel cut−off for enabling lambda control	> 8 sec		
					OR			
					(			
					Absolute value of diffence in lambda of bank 1	<= 0.1001 -		
					Difference of counter time and plant time constant a-(b+c) where a is Time running down after fuel cut−off for enabling lambda control b is plant time constant for continuous air/fuel control c is plant parameter for dead time for lambda control	> 0 sec		
					)			
					)			
					)			
					LSU sensor upstream to catalyst ready for operation	= TRUE -		
					(			
					Level of lambda sensor 1 signal quality	<= 12 -		
					)			
					Lambda control disabled by a fault	= FALSE -		
					(			
					Catalyst damaging misfire rate exceeded	= FALSE -		
					and			
					Injector power stage fault is active	= FALSE -		
					Camshaft fault in critical operating range present and MAF is main air charge sensor	= FALSE -		
					)			
					lambda control is active since warmup is finished	= TRUE -		
					Relative air charge	> 0 %		
					(			
					for time	>= 2 sec		
					)			
					Lamda control active due to GDI mode change	= TRUE -		
					(			
					GDI mode homogeneous	= TRUE -		
					for time	>= 0.8 sec		
					)			
					)			
					Lambda set point	>= 0.6499 -		
					Minimum injection time limitation for GDI mode is active	= FALSE -		
					Width of dead zone for lambda control deviation	< 0.999969 -		
					(			
					Width of dead zone for lambda control deviation	< 0 -		
					OR			
					Lambda control continuos error	> 0 -		
					)			
					)			
					OR			
					(			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					Unrestricted operation of Upstream closed loop lambda controller of bank 2 is active	=	TRUE	-		
					(					
					Enleanment protection of lambda controller	=	FALSE	-		
					(					
					(					
					Large deceleration enleanment protection of lambda controller	=	FALSE	-		
					(					
					Relative fuel mass transient component threshold for deceleration enleanment	>=	-10.0078	%/seg		
					Relative fuel mass transient component threshold for deceleration enleanment in bank 2	>=	-10.0078	%/seg		
					)					
					for time (see Look-Up-Table #P2177-6)	<=	0.5 to 1	sec		
					)					
					OR					
					(					
					Large acceleration enrichment protection of lambda controller	=	FALSE	-		
					(					
					Relative fuel mass transient componet threshold for acceleration enrichment	<=	19.0078	%/seg		
					Relative fuel mass transient componet threshold for acceleration enrichmen	<=	19.0078	%/seg		
					)					
					for time (see Look-Up-Table #P2177-5)	<=	0.3 to 1	sec		
					)					
					)					
					Upstream Lambda closed loop control for bank 2	=	TRUE	-		
					(					
					Lambda control disabled during after cylinder cut−off	=	FALSE	-		
					Lambda swtiched ON after fuel cutoff	=	TRUE	-		
					(					
					Fuel cut off is active	=	FALSE	-		
					(					
					Time running down after fuel cut−off for enabling lambda control	>	8	sec		
					OR					
					(					
					Absolute value of diffence in lambda of bank 2	<=	0.1001	-		
					Difference of counter time and plant time constant	>	0	sec		
					a-(b+c)					
					where a is Time running down after fuel cut−off for enabling lambda control					
					b is plant time constant of bank 2 for continuous air/fuel control					
					c is plant parameter of bank 2 for dead time for lambda control					
					)					
					)					
					)					
					LSU sensor upstream to catalyst ready for operation	=	TRUE	-		
					(					
					Level of lambda sensor 1, bank 2 signal quality	<=	12	-		
					)					
					Lambda control disabled by a fault	=	FALSE	-		
					(					
					Catalyst damaging misfire rate exceeded	=	FALSE	-		
					Injector power stage fault is active	=	FALSE	-		
					Camshaft fault in critical operating range present and MAF is main air charge sensor	=	FALSE	-		
					)					
					lambda control is active since warmup is finished	=	TRUE	-		
					Relative air charge	>	0	%		
					for time	>=	2	sec		
					)					
					Lamda control active due to GDI mode change	=	TRUE	-		
					(					
					GDI mode homogeneous	=	TRUE	-		
					for time	>=	0.8	sec		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
							)					
							)					
							Lambda set point	>=	0.6499	-		
							Minimum injection time limitation for GDI mode of bank 2 is active	=	FALSE	-		
							Width of dead zone for Width of dead zone for lambda control deviation	<	0.999969	-		
							(					
							Width of dead zone for lambda control deviation	=	0	-		
							OR					
							Lambda control continuos error	>	0	-		
							)					
							)					
							for time	>=	3	sec		
							)					
							(					
							Difference between lambda value referenced to sensor fitting of bank 1 and bank 2	>=	0	-		
							Lambda set point	<	1.04004	-		
							(					
							Detection of fuel mixture adaption	=	TRUE	-		
							(					
							Lambda set point of bank 2	>	0.8999	-		
							)					
							OR					
							Lambda set point of bank 2	>	0.95996	-		
							)					
							for time	>=	Max(A,B)	sec		
							where A - delay time for lambda fuel adaption (rich condition)		0	sec		
							where B - delay time for lambda fuel adaption (lean condition)		0	sec		
							)					
							Limitation due to fuel in oil is deactivated	=	TRUE	-		
							Limitation due to fuel in oil is deactivated for bank 2	=	TRUE	-		
							)					
							(					
							Half Engine mode is deactivated	=	TRUE	-		
							for time	>=	10	sec		
							)					
							)					
							Lambda closed loop control upstream catalyst, bank 2	=	TRUE	-		
							)					
							Multiplicative adaptation correction factor of bank 2	>	0	-		
							)					
							)					
							)					
							No pending or confirmed DTCs	=	see sheet inhibit tables	-		
							Basic enable conditions met	=	see sheet enable tables	-		
Fuel Trim Bank 1	P2E68	Multiplicative part of the Long Term Fuel Trim for Bank 1 in ZAS mode is greater than a calibrated threshold.	Multiplicative part of LTFT for bank 1 in ZAS mode	>	1.230011	-	LTFT Multiplicative mixture adaptation bank 1 in ZAS operation mode is active	=	TRUE	-	multiple	2 Trips
							(					
							LTFT multiplicative part Bank 1 Integrator is stable which is of the following conditions	=	TRUE	-		
							(					
							(					
							Condition diagnostic thresholds of multiplicative correction in ZAS mode currently exceeded of bank 1 is stable	=	TRUE	-		
							(					
							Multiplicative part of LTFT for bank 1 in ZAS mode	>	1.230011	-		
							OR					
							Multiplicative part of LTFT for bank 1 in ZAS mode	<	0.769989	-		
							)					
							OR					
							Similar conditions for multiplicative fuel adaptation fulfilled	=	TRUE	-		
							(					
							Difference between Measured and reference Engine speed	<=	375	rpm		
							Difference between reference and measured Engine speed	<=	375	rpm		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					Difference between measured load value to reference load	<=	20	-		
					Difference between reference load value to measured load	<=	20	-		
					)					
					)					
					LTFT multiplicative part Bank 1 is stable, which is the following conditions for time	>=	10	sec		
					(					
					(					
					Condition diagnostic thresholds of multiplicative correction in ZAS mode currently exceeded	=	TRUE	-		
					(					
					Absolute change of LTFT multiplicative part, Bank 1	<=	1.999969	-		
					)					
					OR					
					Absolute change of LTFT multiplicative part, Bank 1	<=	0.029999	-		
					)					
					(					
					Condition diagnostic thresholds of multiplicative correction in ZAS mode currently exceeded	=	TRUE	-		
					OR					
					Change in short term fuel trim, Bank 1	<=	0.049988	-		
					)					
					Absolute difference between LTFT additive part, Bank 1 and its fixed value at beginning of multiplicative steady state phase	<=	0.75	%		
					Multiplicative mixture adaptation in ZAS mode is active	=	TRUE	-		
					(					
					Multiplicative mixture adaptation is active, which is the following conditions:	=	TRUE	-		
					(					
					Fraz operational readiness independent of the operating mode is active, which is the following conditions for time	>=	2	sec		
					(					
					Fundamental operating mode independent operation readiness of mixture adaption	=	TRUE	-		
					(					
					(					
					Condition error suspicion in mixture adaptation	=	TRUE	-		
					(					
					Coolant Engine Temperature	>=	Min(C, D)	deg C		
					where C - cut-in temperature adaptive precontrol for lambda closed-loop control	=	54.8	deg C		
					where D - cut-in temperature fuel mixture adaptation in case of error suspicion	=	54.8	deg C		
					)					
					OR					
					Coolant Engine Temperature	>=	54.8	deg C		
					)					
					Basic willingness of fuel mixture adaptation, except engine temperature	=	TRUE	-		
					(					
					Intake air temperature	<	90	deg C		
					Conditiion of Wide Open Throttle	=	FALSE	-		
					(					
					Propulsion torque after driving assistance coordination	<	3276.7	Nm		
					)					
					Increased tolerances of air charge determination expected	=	FALSE	-		
					Maximum proportion of evaporating fuel from the engine oil to the fuel demand (model based)	<=	0	-		
					Ratio total charge to charge in cylinder	<	15	-		
					)					
					(					
					Number of injections since start	>=	1200	-		
					OR					
					Number of injections since start	>=	1000	-		
					)					
					)					
					FRAZ adaption physically enabled	=	TRUE	-		
					(					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					Torque commanded to charge control (see Look-Up-Table #P2E68-2)	>=	3.99933 to 99.98932	%		
					Torque commanded to charge control (see Look-Up-Table #P2E68-1)	<=	0 to 30.00031	%		
					)					
					)					
					Operating mode dependent Readiness LRA	=	TRUE	-		
					(					
					(					
					Lambda closed loop control upstream catalyst, bank 1	=	TRUE	-		
					(					
					Enleanment protection of lambda controller	=	FALSE	-		
					(					
					(					
					Large deceleration enleanment protection of lambda controller	=	FALSE	-		
					(					
					Relative fuel mass transient component threshold for deceleration enleanment	>=	-10.0078	%/seg		
					Relative fuel mass transient component threshold for deceleration enleanment in bank 2	>=	-10.0078	%/seg		
					)					
					for time (see Look-Up-Table #P2177-6)	>=	0.5 to 1	sec		
					)					
					OR					
					(					
					Large acceleration enrichment protection of lambda controller	=	FALSE	-		
					(					
					Relative fuel mass transient componet threshold for acceleration enrichment	<=	19.0078	%/seg		
					Relative fuel mass transient componet threshold for acceleration enrichmen	<=	19.0078	%/seg		
					)					
					for time (see Look-Up-Table #P2177-5)	>=	0.3 to 1	sec		
					)					
					)					
					Upstream Lambda closed loop control for bank 1	=	TRUE	-		
					(					
					Lambda control disabled during after cylinder cut−off	=	FALSE	-		
					Lambda swtiched ON after fuel cutoff	=	TRUE	-		
					(					
					Fuel cut off is active	=	FALSE	-		
					(					
					Time running down after fuel cut−off for enabling lambda control	>	8	sec		
					OR					
					(					
					Absolute value of diffence in lambda of bank 1	<=	0.1001	-		
					Difference of counter time and plant time constant a-(b+c) where a is Time running down after fuel cut−off for enabling lambda control b is plant time constant for continuous air/fuel control c is plant parameter for dead time for lambda control	>	0	sec		
					)					
					)					
					)					
					LSU sensor upstream to catalyst ready for operation	=	TRUE	-		
					(					
					Level of lambda sensor 1 signal quality	<=	12	-		
					)					
					Lambda control disabled by a fault	=	FALSE	-		
					(					
					Catalyst damaging misfire rate exceeded	=	FALSE	-		
					Injector power stage fault is active	=	FALSE	-		
					Camshaft fault in critical operating range present and MAF is main air charge sensor	=	FALSE	-		
					)					
					lambda control is active since warmup is finished	=	TRUE	-		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					Relative air charge	>	0	%		
					for time	>=	2	sec		
					)					
					Lamda control active due to GDI mode change	=	TRUE	-		
					(					
					GDI mode homogeneous	=	TRUE	-		
					for time	>=	0.8	sec		
					)					
					)					
					Lambda set point	>=	0.6499	-		
					Minimum injection time limitation for GDI mode is active	=	FALSE	-		
					Width of dead zone for lambda control deviation	<	0.999969	-		
					(					
					Width of dead zone for lambda control deviation	<	0	-		
					OR					
					Lambda control continuos error	>	0	-		
					)					
					)					
					OR					
					(					
					Unrestricted operation of Upstream closed loop lambda controller of bank 2 is active	=	TRUE	-		
					(					
					Enleanment protection of lambda controller	=	FALSE	-		
					(					
					(					
					Large deceleration enleanment protection of lambda controller	=	FALSE	-		
					(					
					Relative fuel mass transient component threshold for deceleration enleanment	>=	-10.0078	%/seg		
					Relative fuel mass transient component threshold for deceleration enleanment in bank 2	>=	-10.0078	%/seg		
					)					
					for time (see Look-Up-Table #P2177-6)	<=	0.5 to 1	sec		
					)					
					OR					
					(					
					Large acceleration enrichment protection of lambda controller	=	FALSE	-		
					(					
					Relative fuel mass transient componet threshold for acceleration enrichment	<=	19.0078	%/seg		
					Relative fuel mass transient componet threshold for acceleration enrichmen	<=	19.0078	%/seg		
					)					
					for time (see Look-Up-Table #P2177-5)	<=	0.3 to 1	sec		
					)					
					)					
					Upstream Lambda closed loop control for bank 2	=	TRUE	-		
					(					
					Lambda control disabled during after cylinder cut−off	=	FALSE	-		
					Lambda swtiched ON after fuel cutoff	=	TRUE	-		
					(					
					Fuel cut off is active	=	FALSE	-		
					(					
					Time running down after fuel cut−off for enabling lambda control	>	8	sec		
					OR					
					(					
					Absolute value of diffence in lambda of bank 2	<=	0.1001	-		
					Difference of counter time and plant time constant a-(b+c) where a is Time running down after fuel cut−off for enabling lambda control b is plant time constant of bank 2 for continuous air/fuel control c is plant parameter of bank 2 for dead time for lambda control	>	0	sec		
					)					
					)					
					)					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					LSU sensor upstream to catalyst ready for operation	= TRUE -		
					(			
					Level of lambda sensor 1, bank 2 signal quality	<= 12 -		
					)			
					Lambda control disabled by a fault	= FALSE -		
					(			
					Catalyst damaging misfire rate exceeded	= FALSE -		
					Injector power stage fault is active	= FALSE -		
					Camshaft fault in critical operating range present and MAF is main air charge sensor	= FALSE -		
					)			
					lambda control is active since warmup is finished	= TRUE -		
					Relative air charge	> 0 %		
					(			
					for time	>= 2 sec		
					)			
					Lamda control active due to GDI mode change	= TRUE -		
					(			
					GDI mode homogeneous	= TRUE -		
					for time	>= 0.8 sec		
					)			
					)			
					Lambda set point	>= 0.6499 -		
					Minimum injection time limitation for GDI mode of bank 2 is active	= FALSE -		
					Width of dead zone for Width of dead zone for lambda control deviation	< 0.999969 -		
					(			
					Width of dead zone for lambda control deviation	= 0 -		
					OR			
					Lambda control continuos error	> 0 -		
					)			
					)			
					for time	>= 3 sec		
					)			
					(			
					Difference between lambda value referenced to sensor fitting of bank 1 and bank 2	>= 0 -		
					Lambda set point	< 1.04004 -		
					(			
					Detection of fuel mixture adaption	= TRUE -		
					(			
					Lambda set point of bank 2	> 0.8999 -		
					)			
					OR			
					Lambda set point of bank 2	> 0.95996 -		
					)			
					for time	>= Max(A,B) sec		
					where A - delay time for lambda fuel adaption (rich condition)	0 sec		
					where B - delay time for lambda fuel adaption (lean condition)	0 sec		
					)			
					Limitation due to fuel in oil is deactivated	= TRUE -		
					Limitation due to fuel in oil is deactivated for bank 2	= TRUE -		
					)			
					Lambda closed loop control upstream catalyst, bank 1	= TRUE -		
					)			
					Multiplicative adaptation correction factor	> 0 -		
					)			
					)			
					)			
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
Fuel Trim Bank 1	P2E69	Multiplicative part of the Long Term Fuel Trim for Bank 1 in ZAS mode is less than a calibrated threshold.	Multiplicative part of LTFT for bank 1 in ZAS mode	< 0.769989 -	LTFT Multiplicative mixture adaptation bank 1 in ZAS operation mode is active	= TRUE -	multiple	2 Trips
					(			
					LTFT multiplicative part Bank 1 Integrator is stable which is of the following conditions	= TRUE -		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					(					
					(					
					Condition diagnostic thresholds of multiplicative correction in ZAS mode currently exceeded of bank 1 is stable	=	TRUE	-		
					(					
					Multiplicative part of LTFT for bank 1 in ZAS mode	>	1.230011	-		
					OR					
					Multiplicative part of LTFT for bank 1 in ZAS mode	<	0.769989	-		
					)					
					OR					
					Similar conditions for multiplicative fuel adaptation fulfilled	=	TRUE	-		
					(					
					Difference between Measured and reference Engine speed	<=	375	rpm		
					Difference between reference and measured Engine speed	<=	375	rpm		
					Difference between measured load value to reference load	<=	20	-		
					Difference between reference load value to measured load	<=	20	-		
					)					
					)					
					LTFT multiplicative part Bank 1 is stable, which is the following conditions for time	>=	10	sec		
					(					
					(					
					Condition diagnostic thresholds of multiplicative correction in ZAS mode currently exceeded	=	TRUE	-		
					(					
					Absolute change of LTFT multiplicative part, Bank 1	<=	1.999969	-		
					)					
					OR					
					Absolute change of LTFT multiplicative part, Bank 1	<=	0.029999	-		
					)					
					(					
					Condition diagnostic thresholds of multiplicative correction in ZAS mode currently exceeded	=	TRUE	-		
					OR					
					Change in short term fuel trim, Bank 1	<=	0.049988	-		
					)					
					Absolute difference between LTFT additive part, Bank 1 and its fixed value at beginning of multiplicative steady state phase	<=	0.75	%		
					Multiplicative mixture adaptation in ZAS mode is active	=	TRUE	-		
					(					
					Multiplicative mixture adaptation is active, which is the following conditions:	=	TRUE	-		
					(					
					Fraz operational readiness independent of the operating mode is active, which is the following conditions for time	>=	2	sec		
					(					
					Fundamental operating mode independent operation readiness of mixture adaption	=	TRUE	-		
					(					
					(					
					Condition error suspicion in mixture adaptation	=	TRUE	-		
					(					
					Coolant Engine Temperature	>=	Min(C, D)	deg C		
					where C - cut-in temperature adaptive precontrol for lambda closed-loop control	=	54.8	deg C		
					where D - cut-in temperature fuel mixture adaptation in case of error suspicion	=	54.8	deg C		
					)					
					OR					
					Coolant Engine Temperature	>=	54.8	deg C		
					)					
					Basic willingness of fuel mixture adaptation, except engine temperature	=	TRUE	-		
					(					
					Intake air temperature	<	90	deg C		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					Condition of Wide Open Throttle	=	FALSE	-		
					(					
					Propulsion torque after driving assistance coordination	<	3276.7	Nm		
					)					
					Increased tolerances of air charge determination expected	=	FALSE	-		
					Maximum proportion of evaporating fuel from the engine oil to the fuel demand (model based)	<=	0	-		
					Ratio total charge to charge in cylinder	<	15	-		
					)					
					(					
					Number of injections since start	>=	1200	-		
					OR					
					Number of injections since start	>=	1000	-		
					)					
					)					
					FRAZ adaption physically enabled	=	TRUE	-		
					(					
					Torque commanded to charge control (see Look-Up-Table #P2E68-2)	>=	3.99933 to 99.98932	%		
					Torque commanded to charge control (see Look-Up-Table #P2E68-1)	<=	0 to 30.00031	%		
					)					
					)					
					Operating mode dependent Readiness LRA	=	TRUE	-		
					(					
					(					
					Lambda closed loop control upstream catalyst, bank 1	=	TRUE	-		
					(					
					Enleanment protection of lambda controller	=	FALSE	-		
					(					
					(					
					Large deceleration enleanment protection of lambda controller	=	FALSE	-		
					(					
					Relative fuel mass transient component threshold for deceleration enleanment	>=	-10.0078	%/seg		
					Relative fuel mass transient component threshold for deceleration enleanment in bank 2	>=	-10.0078	%/seg		
					)					
					for time (see Look-Up-Table #P2177-6)	>=	0.5 to 1	sec		
					)					
					OR					
					(					
					Large acceleration enrichment protection of lambda controller	=	FALSE	-		
					(					
					Relative fuel mass transient componet threshold for acceleration enrichment	<=	19.0078	%/seg		
					Relative fuel mass transient componet threshold for acceleration enrichmen	<=	19.0078	%/seg		
					)					
					for time (see Look-Up-Table #P2177-5)	>=	0.3 to 1	sec		
					)					
					)					
					Upstream Lambda closed loop control for bank 1	=	TRUE	-		
					(					
					Lambda control disabled during after cylinder cut−off	=	FALSE	-		
					Lambda swtiched ON after fuel cutoff	=	TRUE	-		
					(					
					Fuel cut off is active	=	FALSE	-		
					(					
					Time running down after fuel cut−off for enabling lambda control	>	8	sec		
					OR					
					(					
					Absolute value of diffence in lambda of bank 1	<=	0.1001	-		
					Difference of counter time and plant time constant a-(b+c) where a is Time running down after fuel cut−off for enabling lambda control b is plant time constant for continuous air/fuel control	>	0	sec		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					c is plant parameter for dead time for lambda control			
					)			
					)			
					)			
					LSU sensor upstream to catalyst ready for operation	= TRUE -		
					(			
					Level of lambda sensor 1 signal quality	<= 12 -		
					)			
					Lambda control disabled by a fault	= FALSE -		
					(			
					Catalyst damaging misfire rate exceeded	= FALSE -		
					Injector power stage fault is active	= FALSE -		
					Camshaft fault in critical operating range present and MAF is main air charge sensor	= FALSE -		
					)			
					lambda control is active since warmup is finished	= TRUE -		
					Relative air charge	> 0 %		
					for time	>= 2 sec		
					)			
					Lamda control active due to GDI mode change	= TRUE -		
					(			
					GDI mode homogeneous	= TRUE -		
					for time	>= 0.8 sec		
					)			
					)			
					Lambda set point	>= 0.6499 -		
					Minimum injection time limitation for GDI mode is active	= FALSE -		
					Width of dead zone for lambda control deviation	< 0.999969 -		
					(			
					Width of dead zone for lambda control deviation	< 0 -		
					OR			
					Lambda control continuos error	> 0 -		
					)			
					)			
					OR			
					(			
					Unrestricted operation of Upstream closed loop lambda controller of bank 2 is active	= TRUE -		
					(			
					Enleanment protection of lambda controller	= FALSE -		
					(			
					(			
					Large deceleration enleanment protection of lambda controller	= FALSE -		
					(			
					Relative fuel mass transient component threshold for deceleration enleanment	>= -10.0078 %/seg		
					Relative fuel mass transient component threshold for deceleration enleanment in bank 2	>= -10.0078 %/seg		
					)			
					for time (see Look-Up-Table #P2177-6)	<= 0.5 to 1 sec		
					)			
					OR			
					(			
					Large acceleration enrichment protection of lambda controller	= FALSE -		
					(			
					Relative fuel mass transient componet threshold for acceleration enrichment	<= 19.0078 %/seg		
					Relative fuel mass transient componet threshold for acceleration enrichmen	<= 19.0078 %/seg		
					)			
					for time (see Look-Up-Table #P2177-5)	<= 0.3 to 1 sec		
					)			
					)			
					Upstream Lambda closed loop control for bank 2	= TRUE -		
					(			
					Lambda control disabled during after cylinder cut−off	= FALSE -		
					Lambda swtiched ON after fuel cutoff	= TRUE -		
					(			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					Fuel cut off is active	=	FALSE	-		
					(					
					Time running down after fuel cut−off for enabling lambda control	>	8	sec		
					OR					
					(					
					Absolute value of diffence in lambda of bank 2	<=	0.1001	-		
					Difference of counter time and plant time constant	>	0	sec		
					a-(b+c)					
					where a is Time running down after fuel cut−off for enabling lambda control					
					b is plant time constant of bank 2 for continuous air/fuel control					
					c is plant parameter of bank 2 for dead time for lambda control					
					)					
					)					
					)					
					LSU sensor upstream to catalyst ready for operation	=	TRUE	-		
					(					
					Level of lambda sensor 1, bank 2 signal quality	<=	12	-		
					)					
					Lambda control disabled by a fault	=	FALSE	-		
					(					
					Catalyst damaging misfire rate exceeded	=	FALSE	-		
					Injector power stage fault is active	=	FALSE	-		
					Camshaft fault in critical operating range present and MAF is main air charge sensor	=	FALSE	-		
					)					
					lambda control is active since warmup is finished	=	TRUE	-		
					Relative air charge	>	0	%		
					(					
					for time	>=	2	sec		
					)					
					Lamda control active due to GDI mode change	=	TRUE	-		
					(					
					GDI mode homogeneous	=	TRUE	-		
					for time	>=	0.8	sec		
					)					
					)					
					Lambda set point	>=	0.6499	-		
					Minimum injection time limitation for GDI mode of bank 2 is active	=	FALSE	-		
					Width of dead zone for Width of dead zone for lambda control deviation	<	0.999969	-		
					(					
					Width of dead zone for lambda control deviation	=	0	-		
					OR					
					Lambda control continuos error	>	0	-		
					)					
					)					
					for time	>=	3	sec		
					)					
					(					
					Difference between lambda value referenced to sensor fitting of bank 1 and bank 2	>=	0	-		
					Lambda set point	<	1.04004	-		
					(					
					Detection of fuel mixture adaption	=	TRUE	-		
					(					
					Lambda set point of bank 2	>	0.8999	-		
					)					
					OR					
					Lambda set point of bank 2	>	0.95996	-		
					)					
					for time	>=	Max(A,B)	sec		
					where A - delay time for lambda fuel adaption (rich condition)		0	sec		
					where B - delay time for lambda fuel adaption (lean condition)		0	sec		
					)					
					Limitation due to fuel in oil is deactivated	=	TRUE	-		
					Limitation due to fuel in oil is deactivated for bank 2	=	TRUE	-		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					)			
					Lambda closed loop control upstream catalyst, bank 1	= TRUE -		
					)			
					Multiplicative adaptation correction factor	> 0 -		
					)			
					)			
					)			
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
Fuel Trim Bank 2	P2E6A	Multiplicative part of the Long Term Fuel Trim for Bank 2 in ZAS mode is greater than a calibrated threshold.	Multiplicative part of LTFT for bank 2 in ZAS mode	> 1.230011 -	LTFT Multiplicative mixture adaptation bank 2 in ZAS operation mode is active	= TRUE -	multiple	2 Trips
					(			
					LTFT multiplicative part Bank 2 Integrator is stable which is of the following conditions	= TRUE -		
					(			
					(			
					Condition diagnostic thresholds of multiplicative correction in ZAS mode currently exceeded of bank 2 is stable	= TRUE -		
					(			
					Multiplicative part of LTFT for bank 2 in ZAS mode	> 1.230011 -		
					OR			
					Multiplicative part of LTFT for bank 2 in ZAS mode	< 0.769989 -		
					)			
					OR			
					Similar conditions for multiplicative fuel adaptation fulfilled for bank 2	= TRUE -		
					(			
					Difference between Measured and reference Engine speed, bank 2	<= 375 rpm		
					and			
					Difference between reference and measured Engine speed, bank 2	<= 375 rpm		
					and			
					Difference between measured load value to reference load, bank 2	<= 20 -		
					and			
					Difference between reference load value to measured load, bank 2	<= 20 -		
					)			
					)			
					and			
					LTFT multiplicative part Bank 2 is stable, which is the following conditions for time	>= 10 sec		
					(			
					(			
					Condition diagnostic thresholds of multiplicative correction in ZAS mode currently exceeded of bank 2 is stable	= TRUE -		
					(			
					Absolute change of LTFT multiplicative part, Bank 2	<= 1.999969 -		
					)			
					OR			
					Absolute change of LTFT multiplicative part, Bank 2	<= 0.029999 -		
					)			
					and			
					(			
					Condition diagnostic thresholds of multiplicative correction in ZAS mode currently exceeded of bank 2 is stable	= TRUE -		
					OR			
					Change in short term fuel trim, Bank 2	<= 0.049988 -		
					)			
					and			
					Absolute difference between LTFT additive part, Bank 2 and its fixed value at beginning of multiplicative steady state phase	<= 0.75 %		
					and			
					Multiplicative mixture adaptation in ZAS mode is active, bank 2	= TRUE -		
					(			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					Multiplicative mixture adaptation is active, which is the following conditions:	=	TRUE	-		
					(					
					Fraz operational readiness independent of the operating mode is active, which is the following conditions for time	>=	2	sec		
					(					
					Fundamental operating mode independent operation readiness of mixture adaption	=	TRUE	-		
					(					
					(					
					Condition error suspicion in mixture adaptation	=	TRUE	-		
					(					
					Coolant Engine Temperature	>=	Min(C, D)	deg C		
					where C - cut-in temperature adaptive precontrol for lambda closed-loop control	=	54.8	deg C		
					where D - cut-in temperature fuel mixture adaptation in case of error suspicion	=	54.8	deg C		
					)					
					OR					
					Coolant Engine Temperature	>=	54.8	deg C		
					)					
					and					
					Basic willingness of fuel mixture adaptation, except engine temperature	=	TRUE	-		
					(					
					Intake air temperature	<	90	deg C		
					and					
					Conditiion of Wide Open Throttle	=	FALSE	-		
					(					
					Propulsion torque after driving assistance coordination	<	3276.7	Nm		
					)					
					and					
					Increased tolerances of air charge determination expected	=	FALSE	-		
					and					
					Maximum proportion of evaporating fuel from the engine oil to the fuel demand (model based)	<=	0	-		
					and					
					Ratio total charge to charge in cylinder	<	15	-		
					)					
					and					
					(					
					Number of injections since start	>=	1200	-		
					OR					
					Number of injections since start	>=	1000	-		
					)					
					)					
					and					
					FRAZ adaption physically enabled	=	TRUE	-		
					(					
					Torque commanded to charge control (see Look-Up-Table #P2E68-2)	>=	3.99933 to 99.98932	%		
					and					
					Torque commanded to charge control (see Look-Up-Table #P2E68-1)	<=	0 to 30.00031	%		
					)					
					)					
					and					
					Operating mode dependent Readiness LRA	=	TRUE	-		
					(					
					(					
					Lambda closed loop control upstream catalyst, bank 1	=	TRUE	-		
					(					
					Enleanment protection of lambda controller	=	FALSE	-		
					(					
					(					
					Large deceleration enleanment protection of lambda controller	=	FALSE	-		
					(					
					Relative fuel mass transient component threshold for deceleration enleanment	>=	-10.0078	%/seg		
					Relative fuel mass transient component threshold for deceleration enleanment in bank 2	>=	-10.0078	%/seg		
					)					
					for time(see Look-Up-Table #P2177-6)	>=	0.5 to 1	sec		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					)			
					OR			
					(			
					Large acceleration enrichment protection of lambda controller	= FALSE -		
					(			
					Relative fuel mass transient componet threshold for acceleration enrichment	<= 19.0078 %/seg		
					Relative fuel mass transient componet threshold for acceleration enrichmen	<= 19.0078 %/seg		
					)			
					for time (see Look-Up-Table #P2177-5)	>= 0.3 to 1 sec		
					)			
					)			
					and			
					Upstream Lambda closed loop control for bank 1	= TRUE -		
					(			
					Lambda control disabled during after cylinder cut−off	= FALSE -		
					and			
					Lambda swtiched ON after fuel cutoff	= TRUE -		
					(			
					Fuel cut off is active	= FALSE -		
					and			
					(			
					Time running down after fuel cut−off for enabling lambda control	> 8 sec		
					OR			
					(			
					Absolute value of diffence in lambda of bank 1	<= 0.1001 -		
					and			
					Difference of counter time and plant time constant	> 0 sec		
					a-(b+c)			
					where a is Time running down after fuel cut−off for enabling lambda control			
					b is plant time constant for continuous air/fuel control			
					c is plant parameter for dead time for lambda control			
					)			
					)			
					)			
					and			
					LSU sensor upstream to catalyst ready for operation	= TRUE -		
					(			
					Level of lambda sensor 1 signal quality	<= 12 -		
					)			
					and			
					Lambda control disabled by a fault	= FALSE -		
					(			
					Catalyst damaging misfire rate exceeded	= FALSE -		
					and			
					Injector power stage fault is active	= FALSE -		
					and			
					Camshaft fault in critical operating range present and MAF is main air charge sensor	= FALSE -		
					)			
					and			
					lambda control is active since warmup is finished	= TRUE -		
					and			
					Relative air charge	> 0 %		
					for time	>= 2 sec		
					)			
					and			
					Lamda control active due to GDI mode change	= TRUE -		
					(			
					GDI mode homogeneous	= TRUE -		
					for time	>= 0.8 sec		
					)			
					)			
					and			
					Lambda set point	>= 0.6499 -		
					and			
					Minimum injection time limitation for GDI mode is active	= FALSE -		
					and			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					Width of dead zone for lambda control deviation	<	0.999969	-		
					and					
					(					
					Width of dead zone for lambda control deviation	<	0	-		
					OR					
					Lambda control continuos error	>	0	-		
					)					
					)					
					OR					
					(					
					Unrestricted operation of Upstream closed loop lambda controller of bank 2 is active	=	TRUE	-		
					(					
					Enleanment protection of lambda controller	=	FALSE	-		
					(					
					(					
					Large deceleration enleanment protection of lambda controller	=	FALSE	-		
					(					
					Relative fuel mass transient component threshold for deceleration enleanment	>=	-10.0078	%/seg		
					Relative fuel mass transient component threshold for deceleration enleanment in bank 2	>=	-10.0078	%/seg		
					)					
					for time(see Look-Up-Table #P2177-6)	<=	0.5 to 1	sec		
					)					
					OR					
					(					
					Large acceleration enrichment protection of lambda controller	=	FALSE	-		
					(					
					Relative fuel mass transient componet threshold for acceleration enrichment	<=	19.0078	%/seg		
					Relative fuel mass transient componet threshold for acceleration enrichmen	<=	19.0078	%/seg		
					)					
					for time (see Look-Up-Table #P2177-5)	<=	0.3 to 1	sec		
					)					
					)					
					and					
					Upstream Lambda closed loop control for bank 2	=	TRUE	-		
					(					
					Lambda control disabled during after cylinder cut−off	=	FALSE	-		
					and					
					Lambda swtiched ON after fuel cutoff	=	TRUE	-		
					(					
					Fuel cut off is active	=	FALSE	-		
					and					
					(					
					Time running down after fuel cut−off for enabling lambda control	>	8	sec		
					OR					
					(					
					Absolute value of diffence in lambda of bank 2	<=	0.1001	-		
					and					
					Difference of counter time and plant time constant	>	0	sec		
					a-(b+c)					
					where a is Time running down after fuel cut−off for enabling lambda control					
					b is plant time constant of bank 2 for continuous air/fuel control					
					c is plant parameter of bank 2 for dead time for lambda control					
					)					
					)					
					)					
					and					
					LSU sensor upstream to catalyst ready for operation	=	TRUE	-		
					(					
					Level of lambda sensor 1, bank 2 signal quality	<=	12	-		
					)					
					and					
					Lambda control disabled by a fault	=	FALSE	-		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 TEST GROUP: KGMXV04.2088 EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					(					
					Catalyst damaging misfire rate exceeded	=	FALSE	-		
					and					
					Injector power stage fault is active	=	FALSE	-		
					and					
					Camshaft fault in critical operating range present and MAF is main air charge sensor	=	FALSE	-		
					)					
					and					
					lambda control is active since warmup is finished	=	TRUE	-		
					and					
					Relative air charge	>	0	%		
					for time	>=	2	sec		
					)					
					and					
					Lamda control active due to GDI mode change	=	TRUE	-		
					(					
					GDI mode homogeneous	=	TRUE	-		
					for time	>=	0.8	sec		
					)					
					)					
					and					
					Lambda set point	>=	0.6499	-		
					and					
					Minimum injection time limitation for GDI mode of bank 2 is active	=	FALSE	-		
					and					
					Width of dead zone for Width of dead zone for lambda control deviation	<	0.999969	-		
					and					
					(					
					Width of dead zone for lambda control deviation	=	0	-		
					OR					
					Lambda control continuos error	>	0	-		
					)					
					)					
					for time	>=	3	sec		
					)					
					and					
					(					
					Difference between lambda value referenced to sensor fitting of bank 1 and bank 2	>=	0	-		
					and					
					Lambda set point	<	1.04004	-		
					and					
					(					
					Detection of fuel mixture adaption	=	TRUE	-		
					(					
					Lambda set point of bank 2	>	0.8999	-		
					)					
					OR					
					Lambda set point of bank 2	>	0.95996	-		
					)					
					for time	>=	Max(A,B)	sec		
					where A - delay time for lambda fuel adaption (rich condition)		0	sec		
					where B - delay time for lambda fuel adaption (lean condition)		0	sec		
					)					
					and					
					Limitation due to fuel in oil is deactivated	=	TRUE	-		
					and					
					Limitation due to fuel in oil is deactivated for bank 2	=	TRUE	-		
					)					
					and					
					Lambda closed loop control upstream catalyst, bank 2	=	TRUE	-		
					)					
					Multiplicative adaptation correction factor, bank 2	>	0	-		
					)					
					)					
					)					
					No pending or confirmed DTCs	=	see sheet inhibit tables	-		
					Basic enable conditions met	=	see sheet enable tables	-		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
Fuel Trim Bank 2	P2E6B	Multiplicative part of the Long Term Fuel Trim for Bank 2 in ZAS mode is less than a calibrated threshold.	Multiplicative part of LTFT for bank 2 in ZAS mode	<	0.769989	-	LTFT Multiplicative mixture adaptation bank 2 in ZAS operation mode is active	=	TRUE	-	multiple	2 Trips
							(					
							LTFT multiplicative part Bank 2 Integrator is stable which is of the following conditions	=	TRUE	-		
							(					
							(					
							Condition diagnostic thresholds of multiplicative correction in ZAS mode currently exceeded of bank 2 is stable	=	TRUE	-		
							(					
							Multiplicative part of LTFT for bank 2 in ZAS mode	>	1.230011	-		
							OR					
							Multiplicative part of LTFT for bank 2 in ZAS mode	<	0.769989	-		
							)					
							OR					
							Similar conditions for multiplicative fuel adaptation fulfilled for bank 2	=	TRUE	-		
							(					
							Difference between Measured and reference Engine speed, bank 2	<=	375	rpm		
							and					
							Difference between reference and measured Engine speed, bank 2	<=	375	rpm		
							and					
							Difference between measured load value to reference load, bank 2	<=	20	-		
							and					
							Difference between reference load value to measured load, bank 2	<=	20	-		
							)					
							)					
							and					
							LTFT multiplicative part Bank 2 is stable, which is the following conditions for time	>=	10	sec		
							(					
							(					
							Condition diagnostic thresholds of multiplicative correction in ZAS mode currently exceeded of bank 2 is stable	=	TRUE	-		
							(					
							Absolute change of LTFT multiplicative part, Bank 2	<=	1.999969	-		
							)					
							OR					
							Absolute change of LTFT multiplicative part, Bank 2	<=	0.029999	-		
							)					
							and					
							(					
							Condition diagnostic thresholds of multiplicative correction in ZAS mode currently exceeded of bank 2 is stable	=	TRUE	-		
							OR					
							Change in short term fuel trim, Bank 2	<=	0.049988	-		
							)					
							and					
							Absolute difference between LTFT additive part, Bank 2 and its fixed value at beginning of multiplicative steady state phase	<=	0.75	%		
							and					
							Multiplicative mixture adaptation in ZAS mode is active, bank 2	=	TRUE	-		
							(					
							Multiplicative mixture adaptation is active, which is the following conditions:	=	TRUE	-		
							(					
							Fraz operational readiness independent of the operating mode is active, which is the following conditions for time	>=	2	sec		
							(					
							Fundamental operating mode independent operation readiness of mixture adaption	=	TRUE	-		
							(					
							(					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					Condition error suspicion in mixture adaptation	=	TRUE	-		
					(					
					Coolant Engine Temperature	>=	Min(C, D)	deg C		
					where C - cut-in temperature adaptive precontrol for lambda closed-loop control	=	54.8	deg C		
					where D - cut-in temperature fuel mixture adaptation in case of error suspicion	=	54.8	deg C		
					)					
					OR					
					Coolant Engine Temperature	>=	54.8	deg C		
					)					
					and					
					Basic willingness of fuel mixture adaptation, except engine temperature	=	TRUE	-		
					(					
					Intake air temperature	<	90	deg C		
					and					
					Conditiion of Wide Open Throttle	=	FALSE	-		
					(					
					Propulsion torque after driving assistance coordination	<	3276.7	Nm		
					)					
					and					
					Increased tolerances of air charge determination expected	=	FALSE	-		
					and					
					Maximum proportion of evaporating fuel from the engine oil to the fuel demand (model based)	<=	0	-		
					and					
					Ratio total charge to charge in cylinder	<	15	-		
					)					
					and					
					(					
					Number of injections since start	>=	1200	-		
					OR					
					Number of injections since start	>=	1000	-		
					)					
					)					
					and					
					FRAZ adaption physically enabled	=	TRUE	-		
					(					
					Torque commanded to charge control (see Look-Up-Table #P2E68-2)	>=	3.99933 to 99.98932	%		
					and					
					Torque commanded to charge control (see Look-Up-Table #P2E68-1)	<=	0 to 30.00031	%		
					)					
					)					
					and					
					Operating mode dependent Readiness LRA	=	TRUE	-		
					(					
					(					
					Lambda closed loop control upstream catalyst, bank 1	=	TRUE	-		
					(					
					Enleanment protection of lambda controller	=	FALSE	-		
					(					
					(					
					Large deceleration enleanment protection of lambda controller	=	FALSE	-		
					(					
					Relative fuel mass transient component threshold for deceleration enleanment	>=	-10.0078	%/seg		
					Relative fuel mass transient component threshold for deceleration enleanment in bank 2	>=	-10.0078	%/seg		
					)					
					for time(see Look-Up-Table #P2177-6)	>=	0.5 to 1	sec		
					)					
					OR					
					(					
					Large acceleration enrichment protection of lambda controller	=	FALSE	-		
					(					
					Relative fuel mass transient componet threshold for acceleration enrichment	<=	19.0078	%/seg		
					Relative fuel mass transient componet threshold for acceleration enrichmen	<=	19.0078	%/seg		
					)					
					for time (see Look-Up-Table #P2177-5)	>=	0.3 to 1	sec		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					)					
					)					
					and					
					Upstream Lambda closed loop control for bank 1	=	TRUE	-		
					(					
					Lambda control disabled during after cylinder cut−off	=	FALSE	-		
					and					
					Lambda swtiched ON after fuel cutoff	=	TRUE	-		
					(					
					Fuel cut off is active	=	FALSE	-		
					and					
					(					
					Time running down after fuel cut−off for enabling lambda control	>	8	sec		
					OR					
					(					
					Absolute value of diffence in lambda of bank 1	<=	0.1001	-		
					and					
					Difference of counter time and plant time constant	>	0	sec		
					a-(b+c)					
					where a is Time running down after fuel cut−off for enabling lambda control					
					b is plant time constant for continuous air/fuel control					
					c is plant parameter for dead time for lambda control					
					)					
					)					
					)					
					and					
					LSU sensor upstream to catalyst ready for operation	=	TRUE	-		
					(					
					Level of lambda sensor 1 signal quality	<=	12	-		
					)					
					and					
					Lambda control disabled by a fault	=	FALSE	-		
					(					
					Catalyst damaging misfire rate exceeded	=	FALSE	-		
					and					
					Injector power stage fault is active	=	FALSE	-		
					and					
					Camshaft fault in critical operating range present and MAF is main air charge sensor	=	FALSE	-		
					)					
					and					
					lambda control is active since warmup is finished	=	TRUE	-		
					and					
					Relative air charge	>	0	%		
					for time	>=	2	sec		
					)					
					and					
					Lamda control active due to GDI mode change	=	TRUE	-		
					(					
					GDI mode homogeneous	=	TRUE	-		
					for time	>=	0.8	sec		
					)					
					)					
					and					
					Lambda set point	>=	0.6499	-		
					and					
					Minimum injection time limitation for GDI mode is active	=	FALSE	-		
					and					
					Width of dead zone for lambda control deviation	<	0.999969	-		
					and					
					(					
					Width of dead zone for lambda control deviation	<	0	-		
					OR					
					Lambda control continuos error	>	0	-		
					)					
					)					
					OR					
					(					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					Unrestricted operation of Upstream closed loop lambda controller of bank 2 is active	=	TRUE	-		
					(					
					Enleanment protection of lambda controller	=	FALSE	-		
					(					
					(					
					Large deceleration enleanment protection of lambda controller	=	FALSE	-		
					(					
					Relative fuel mass transient component threshold for deceleration enleanment	>=	-10.0078	%/seg		
					Relative fuel mass transient component threshold for deceleration enleanment in bank 2	>=	-10.0078	%/seg		
					)					
					for time(see Look-Up-Table #P2177-6)	<=	0.5 to 1	sec		
					)					
					OR					
					(					
					Large acceleration enrichment protection of lambda controller	=	FALSE	-		
					(					
					Relative fuel mass transient componet threshold for acceleration enrichment	<=	19.0078	%/seg		
					Relative fuel mass transient componet threshold for acceleration enrichmen	<=	19.0078	%/seg		
					)					
					for time (see Look-Up-Table #P2177-5)	<=	0.3 to 1	sec		
					)					
					)					
					and					
					Upstream Lambda closed loop control for bank 2	=	TRUE	-		
					(					
					Lambda control disabled during after cylinder cut−off	=	FALSE	-		
					and					
					Lambda swtiched ON after fuel cutoff	=	TRUE	-		
					(					
					Fuel cut off is active	=	FALSE	-		
					and					
					(					
					Time running down after fuel cut−off for enabling lambda control	>	8	sec		
					OR					
					(					
					Absolute value of diffence in lambda of bank 2	<=	0.1001	-		
					and					
					Difference of counter time and plant time constant a-(b+c) where a is Time running down after fuel cut−off for enabling lambda control b is plant time constant of bank 2 for continuous air/fuel control c is plant parameter of bank 2 for dead time for lambda control	>	0	sec		
					)					
					)					
					)					
					and					
					LSU sensor upstream to catalyst ready for operation	=	TRUE	-		
					(					
					Level of lambda sensor 1, bank 2 signal quality	<=	12	-		
					)					
					and					
					Lambda control disabled by a fault	=	FALSE	-		
					(					
					Catalyst damaging misfire rate exceeded	=	FALSE	-		
					and					
					Injector power stage fault is active	=	FALSE	-		
					and					
					Camshaft fault in critical operating range present and MAF is main air charge sensor	=	FALSE	-		
					)					
					and					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					lambda control is active since warmup is finished	= TRUE -		
					and			
					Relative air charge	> 0 %		
					for time	>= 2 sec		
					)			
					and			
					Lamda control active due to GDI mode change	= TRUE -		
					(			
					GDI mode homogeneous	= TRUE -		
					for time	>= 0.8 sec		
					)			
					)			
					and			
					Lambda set point	>= 0.6499 -		
					and			
					Minimum injection time limitation for GDI mode of bank 2 is active	= FALSE -		
					and			
					Width of dead zone for Width of dead zone for lambda control deviation	< 0.999969 -		
					and			
					(			
					Width of dead zone for lambda control deviation	= 0 -		
					OR			
					Lambda control continuos error	> 0 -		
					)			
					)			
					for time	>= 3 sec		
					)			
					and			
					(			
					Difference between lambda value referenced to sensor fitting of bank 1 and bank 2	>= 0 -		
					and			
					Lambda set point	< 1.04004 -		
					and			
					(			
					Detection of fuel mixture adaption	= TRUE -		
					(			
					Lambda set point of bank 2	> 0.8999 -		
					)			
					OR			
					Lambda set point of bank 2	> 0.95996 -		
					)			
					for time	>= Max(A,B) sec		
					where A - delay time for lambda fuel adaption (rich condition)	0 sec		
					where B - delay time for lambda fuel adaption (lean condition)	0 sec		
					)			
					and			
					Limitation due to fuel in oil is deactivated	= TRUE -		
					and			
					Limitation due to fuel in oil is deactivated for bank 2	= TRUE -		
					)			
					and			
					Lambda closed loop control upstream catalyst, bank 2	= TRUE -		
					)			
					Multiplicative adaptation correction factor, bank 2	> 0 -		
					)			
					)			
					)			
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
Fuel Trim Bank 1	P2187	Additive part of the Long Term Fuel Trim for Bank 1 in gasoline mode is greater than a calibrated threshold	Additive part of LTFT, Bank 1	> 5.484 %	LTFT Additive mixture adaptation bank 1 is active	= TRUE -	multiple	2 Trips
					(			
					(			
					LTFT multiplicative part Bank 1 Integrator is stable which is of the following conditions	= TRUE -		
					(			
					(			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Condition diagnostic thresholds of multiplicative correction currently exceeded of bank 1 is stable	= TRUE -		
					(			
					Multiplicative part of LTFT for bank 1	> 1.230011 -		
					OR			
					Multiplicative part of LTFT for bank 1	< 0.769989 -		
					)			
					OR			
					Similar conditions for multiplicative fuel adaptation fulfilled	= TRUE -		
					(			
					Difference between Measured and reference Engine speed	<= 375 rpm		
					and			
					Difference between reference and measured Engine speed	<= 375 rpm		
					and			
					Difference between measured load value to reference load	<= 20 -		
					and			
					Difference between reference load value to measured load	<= 20 -		
					)			
					)			
					and			
					LTFT multiplicative part Bank 1 is stable, which is the following conditions for time	>= 10 sec		
					(			
					(			
					Condition diagnostic thresholds of multiplicative correction currently exceeded of bank 1 is stable	= TRUE -		
					(			
					Absolute change of LTFT multiplicative part, Bank 1	<= 1.999969 -		
					)			
					OR			
					Absolute change of LTFT multiplicative part, Bank 1	<= 0.029999 -		
					)			
					and			
					(			
					Condition diagnostic thresholds of multiplicative correction currently exceeded of bank 1 is stable	= TRUE -		
					OR			
					Change in short term fuel trim, Bank 1	<= 0.049988 -		
					)			
					and			
					Absolute difference between LTFT additive part, Bank 1 and its fixed value at beginning of multiplicative steady state phase	<= 0.75 %		
					and			
					Multiplicative mixture adaptation is active	= TRUE -		
					(			
					(			
					Multiplicative mixture adaptation is active, which is the following conditions:	= TRUE -		
					(			
					Fra operational readiness independent of the operating mode is active, which is the following conditions for time	>= 2 sec		
					(			
					Fundamental operating mode independent operation readiness of mixture adaption	= TRUE -		
					(			
					(			
					Condition error suspicion in mixture adaptation	= TRUE -		
					(			
					Coolant Engine Temperature	>= Min(C, D) deg C		
					where C - cut-in temperature adaptive precontrol for lambda closed-loop control	= 54.8 deg C		
					where D - cut-in temperature fuel mixture adaptation in case of error suspicion	= 54.8 deg C		
					)			
					OR			
					Coolant Engine Temperature	>= 54.8 deg C		
					)			
					and			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					Basic willingness of fuel mixture adaptation, except engine temperature	=	TRUE	-		
					(					
					Intake air temperature	<	90	deg C		
					and					
					Condition of Wide Open Throttle	=	FALSE	-		
					(					
					Propulsion torque after driving assistance coordination	<	3276.7	Nm		
					)					
					and					
					Increased tolerances of air charge determination expected	=	FALSE	-		
					and					
					Maximum proportion of evaporating fuel from the engine oil to the fuel demand (model based)	<=	0	-		
					and					
					Ratio total charge to charge in cylinder	<	15	-		
					)					
					and					
					(					
					Number of injections since start	>=	1200	-		
					OR					
					Number of injections since start	>=	1000	-		
					)					
					)					
					and					
					FRA adaption physically enabled	=	TRUE	-		
					(					
					Torque commanded to charge control (see Look-Up-Table #P2177-2)	>=	8.00018 to 99.98932	%		
					and					
					Torque commanded to charge control (see Look-Up-Table #P2177-1)	<=	0 to 44.99969	%		
					)					
					)					
					and					
					Operating mode dependent Readiness LRA	=	TRUE	-		
					(					
					(					
					Lambda closed loop control upstream catalyst, bank 1	=	TRUE	-		
					(					
					Enleanment protection of lambda controller	=	FALSE	-		
					(					
					(					
					Large deceleration enleanment protection of lambda controller	=	FALSE	-		
					(					
					Relative fuel mass transient component threshold for deceleration enleanment	>=	-10.0078	%/seg		
					Relative fuel mass transient component threshold for deceleration enleanment in bank 2	>=	-10.0078	%/seg		
					)					
					for time (see Look-Up-Table #P2177-6)	>=	0.5 to 1	sec		
					)					
					OR					
					(					
					Large acceleration enrichment protection of lambda controller	=	FALSE	-		
					(					
					Relative fuel mass transient componet threshold for acceleration enrichment	<=	19.0078	%/seg		
					Relative fuel mass transient componet threshold for acceleration enrichmen	<=	19.0078	%/seg		
					)					
					for time (see Look-Up-Table #P2177-5)	>=	0.3 to 1	sec		
					)					
					)					
					and					
					Upstream Lambda closed loop control for bank 1	=	TRUE	-		
					(					
					Lambda control disabled during after cylinder cut−off	=	FALSE	-		
					and					
					Lambda swtiched ON after fuel cutoff	=	TRUE	-		
					(					
					Fuel cut off is active	=	FALSE	-		
					and					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					(					
					Time running down after fuel cut−off for enabling lambda control	>	8	sec		
					OR					
					(					
					Absolute value of diffence in lambda of bank 1	<=	0.1001	-		
					and					
					Difference of counter time and plant time constant a-(b+c) where a is Time running down after fuel cut−off for enabling lambda control b is plant time constant for continuous air/fuel control c is plant parameter for dead time for lambda control	>	0	sec		
					)					
					)					
					)					
					and					
					LSU sensor upstream to catalyst ready for operation	=	TRUE	-		
					(					
					Level of lambda sensor 1 signal quality	<=	12	-		
					)					
					and					
					Lambda control disabled by a fault	=	FALSE	-		
					(					
					Catalyst damaging misfire rate exceeded	=	FALSE	-		
					and					
					Injector power stage fault is active	=	FALSE	-		
					and					
					Camshaft fault in critical operating range present and MAF is main air charge sensor	=	FALSE	-		
					)					
					and					
					lambda control is active since warmup is finished	=	TRUE	-		
					and					
					Relative air charge	>	0	%		
					for time	>=	2	sec		
					)					
					and					
					Lamda control active due to GDI mode change	=	TRUE	-		
					(					
					GDI mode homogeneous	=	TRUE	-		
					for time	>=	0.8	sec		
					)					
					)					
					and					
					Lambda set point	>=	0.6499	-		
					and					
					Minimum injection time limitation for GDI mode is active	=	FALSE	-		
					and					
					Width of dead zone for lambda control deviation	<	0.999969	-		
					and					
					(					
					Width of dead zone for lambda control deviation	<	0	-		
					OR					
					Lambda control continuos error	>	0	-		
					)					
					)					
					OR					
					(					
					Unrestricted operation of Upstream closed loop lambda controller of bank 2 is active	=	TRUE	-		
					(					
					Enleanment protection of lambda controller	=	FALSE	-		
					(					
					(					
					Large deceleration enleanment protection of lambda controller	=	FALSE	-		
					(					
					Relative fuel mass transient component threshold for deceleration enleanment	>=	-10.0078	%/seg		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 TEST GROUP: KGMXV04.2088 EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					Relative fuel mass transient component threshold for deceleration enleanment in bank 2	>=	-10.0078	%/seg		
					)					
					for time (see Look-Up-Table #P2177-6)	<=	0.5 to 1	sec		
					)					
					OR					
					(					
					Large acceleration enrichment protection of lambda controller	=	FALSE	-		
					(					
					Relative fuel mass transient componet threshold for acceleration enrichment	<=	19.0078	%/seg		
					Relative fuel mass transient componet threshold for acceleration enrichmen	<=	19.0078	%/seg		
					)					
					for time (see Look-Up-Table #P2177-5)	<=	0.3 to 1	sec		
					)					
					)					
					and					
					Upstream Lambda closed loop control for bank 2	=	TRUE	-		
					(					
					Lambda control disabled during after cylinder cut−off	=	FALSE	-		
					and					
					Lambda swtiched ON after fuel cutoff	=	TRUE	-		
					(					
					Fuel cut off is active	=	FALSE	-		
					and					
					(					
					Time running down after fuel cut−off for enabling lambda control	>	8	sec		
					OR					
					(					
					Absolute value of diffence in lambda of bank 2	<=	0.1001	-		
					and					
					Difference of counter time and plant time constant	>	0	sec		
					a-(b+c)					
					where a is Time running down after fuel cut−off for enabling lambda control					
					b is plant time constant of bank 2 for continuous air/fuel control					
					c is plant parameter of bank 2 for dead time for lambda control					
					)					
					)					
					)					
					and					
					LSU sensor upstream to catalyst ready for operation	=	TRUE	-		
					(					
					Level of lambda sensor 1, bank 2 signal quality	<=	12	-		
					)					
					and					
					Lambda control disabled by a fault	=	FALSE	-		
					(					
					Catalyst damaging misfire rate exceeded	=	FALSE	-		
					and					
					Injector power stage fault is active	=	FALSE	-		
					and					
					Camshaft fault in critical operating range present and MAF is main air charge sensor	=	FALSE	-		
					)					
					and					
					lambda control is active since warmup is finished	=	TRUE	-		
					and					
					Relative air charge	>	0	%		
					for time	>=	2	sec		
					)					
					and					
					Lamda control active due to GDI mode change	=	TRUE	-		
					(					
					GDI mode homogeneous	=	TRUE	-		
					for time	>=	0.8	sec		
					)					
					)					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					and					
					Lambda set point	>=	0.6499	-		
					and					
					Minimum injection time limitation for GDI mode of bank 2 is active	=	FALSE	-		
					and					
					Width of dead zone for Width of dead zone for lambda control deviation	<	0.999969	-		
					and					
					(					
					Width of dead zone for lambda control deviation	=	0	-		
					OR					
					Lambda control continuos error	>	0	-		
					)					
					)					
					for time	>=	3	sec		
					)					
					and					
					(					
					Difference between lambda value referenced to sensor fitting of bank 1 and bank 2	>=	0	-		
					and					
					Lambda set point	<	1.04004	-		
					and					
					(					
					Detection of fuel mixture adaption	=	TRUE	-		
					(					
					Lambda set point of bank 2	>	0.8999	-		
					)					
					OR					
					Lambda set point of bank 2	>	0.95996	-		
					)					
					for time	>=	Max(A,B)	sec		
					where A - delay time for lambda fuel adaption (rich condition)		0	sec		
					where B - delay time for lambda fuel adaption (lean condition)		0	sec		
					)					
					and					
					Limitation due to fuel in oil is deactivated	=	TRUE	-		
					and					
					Limitation due to fuel in oil is deactivated for bank 2	=	TRUE	-		
					)					
					and					
					(					
					Half Engine mode is deactivated	=	TRUE	-		
					for time	>=	10	sec		
					)					
					)					
					and					
					Lambda closed loop control upstream catalyst, bank 1	=	TRUE	-		
					)					
					Multiplicative adaptation correction factor, bank 1	>	0	-		
					)					
					)					
					and					
					(					
					LTFT additive part Bank 1 Integrator is stable which is of the following conditions	=	TRUE	-		
					(					
					(					
					Condition diagnostic thresholds of additive correction currently exceeded of bank 1 is stable	=	TRUE	-		
					(					
					Additive part of LTFT for bank 1	>	5.484	%		
					OR					
					Additive part of LTFT for bank 1	<	-5.484	%		
					)					
					OR					
					Similar conditions for additive fuel adaptation fulfilled	=	TRUE	-		
					(					
					Difference between Measured and reference Engine speed	<=	375	rpm		
					and					
					Difference between reference and measured Engine speed	<=	375	rpm		
					and					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Difference between measured load value to reference load	<= 20 -		
					and			
					Difference between reference load value to measured load	<= 20 -		
					)			
					)			
					and			
					LTFT additive part Bank 1 is stable, which is the following conditions for time	>= 10 sec		
					(			
					(			
					Condition diagnostic thresholds of additive correction currently exceeded of bank 1 is stable	= TRUE -		
					(			
					Absolute change of LTFT additive part, Bank 1	<= 0.188 %		
					)			
					OR			
					Absolute change of LTFT additive part, Bank 1	<= 0.188 %		
					)			
					and			
					(			
					Condition diagnostic thresholds of additive correction currently exceeded of bank 1 is stable	= TRUE -		
					OR			
					Change in short term fuel trim, Bank 1	<= 0.049988 -		
					)			
					and			
					Absolute difference between LTFT multiplicative part, Bank 1 and its fixed value at beginning of additive steady state phase	<= 0.049988 %		
					and			
					Additive mixture adaptation is active	= TRUE -		
					(			
					(			
					Additive mixture adaptation is active, which is the following conditions:	= TRUE -		
					(			
					Ora operational readiness independent of the operating mode is active, which is the following conditions for time	>= 0 sec		
					(			
					Fundamental operating mode independent operation readiness of mixture adaption	= TRUE -		
					and			
					ORA adaption physically enabled	= TRUE -		
					(			
					Torque commanded to charge control (see Look-Up-Table #P2187-2)	>= 3.99933 to 99.98932 %		
					and			
					Torque commanded to charge control (see Look-Up-Table #P2187-1)	<= 0 to 14.99939 %		
					)			
					)			
					and			
					Operating mode dependent Readiness LRA	= TRUE -		
					)			
					and			
					Lambda closed loop control upstream catalyst, bank 1	= TRUE -		
					)			
					and			
					Additive adaptation correction factor, bank 1	> 0 -		
					)			
					)			
					)			
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
Fuel Trim Bank 1	P2188	Additive part of the Long Term Fuel Trim for Bank 1 in gasoline mode is less than a calibrated threshold	Additive part of LTFT, Bank 1	< -5.484 %	LTFT Additive mixture adaptation bank 1 is active	= TRUE -	multiple	2 Trips
					(			
					(			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					LTFT multiplicative part Bank 1 Integrator is stable which is of the following conditions	=	TRUE	-		
					(					
					(					
					Condition diagnostic thresholds of multiplicative correction currently exceeded of bank 1 is stable	=	TRUE	-		
					(					
					Multiplicative part of LTFT for bank 1	>	1.230011	-		
					OR					
					Multiplicative part of LTFT for bank 1	<	0.769989	-		
					)					
					OR					
					Similar conditions for multiplicative fuel adaptation fulfilled	=	TRUE	-		
					(					
					Difference between Measured and reference Engine speed	<=	375	rpm		
					and					
					Difference between reference and measured Engine speed	<=	375	rpm		
					and					
					Difference between measured load value to reference load	<=	20	-		
					and					
					Difference between reference load value to measured load	<=	20	-		
					)					
					)					
					and					
					LTFT multiplicative part Bank 1 is stable, which is the following conditions for time	>=	10	sec		
					(					
					(					
					Condition diagnostic thresholds of multiplicative correction currently exceeded of bank 1 is stable	=	TRUE	-		
					(					
					Absolute change of LTFT multiplicative part, Bank 1	<=	1.999969	-		
					)					
					OR					
					Absolute change of LTFT multiplicative part, Bank 1	<=	0.029999	-		
					)					
					and					
					(					
					Condition diagnostic thresholds of multiplicative correction currently exceeded of bank 1 is stable	=	TRUE	-		
					OR					
					Change in short term fuel trim, Bank 1	<=	0.049988	-		
					)					
					and					
					Absolute difference between LTFT additive part, Bank 1 and its fixed value at beginning of multiplicative steady state phase	<=	0.75	%		
					and					
					Multiplicative mixture adaptation is active	=	TRUE	-		
					(					
					(					
					Multiplicative mixture adaptation is active, which is the following conditions:	=	TRUE	-		
					(					
					Fra operational readiness independent of the operating mode is active, which is the following conditions for time	>=	2	sec		
					(					
					Fundamental operating mode independent operation readiness of mixture adaption	=	TRUE	-		
					(					
					(					
					Condition error suspicion in mixture adaptation	=	TRUE	-		
					(					
					Coolant Engine Temperature	>=	Min(C, D)	deg C		
					where C - cut-in temperature adaptive precontrol for lambda closed-loop control	=	54.8	deg C		
					where D - cut-in temperature fuel mixture adaptation in case of error suspicion	=	54.8	deg C		
					)					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					OR					
					Coolant Engine Temperature	>=	54.8	deg C		
					)					
					and					
					Basic willingness of fuel mixture adaptation, except engine temperature	=	TRUE	-		
					(					
					Intake air temperature	<	90	deg C		
					and					
					Conditiion of Wide Open Throttle	=	FALSE	-		
					(					
					Propulsion torque after driving assistance coordination	<	3276.7	Nm		
					)					
					and					
					Increased tolerances of air charge determination expected	=	FALSE	-		
					and					
					Maximum proportion of evaporating fuel from the engine oil to the fuel demand (model based)	<=	0	-		
					and					
					Ratio total charge to charge in cylinder	<	15	-		
					)					
					and					
					(					
					Number of injections since start	>=	1200	-		
					OR					
					Number of injections since start	>=	1000	-		
					)					
					)					
					and					
					FRA adaption physically enabled	=	TRUE	-		
					(					
					Torque commanded to charge control (see Look-Up-Table #P2177-2)	>=	8.00018 to 99.98932	%		
					and					
					Torque commanded to charge control (see Look-Up-Table #P2177-1)	<=	0 to 44.99969	%		
					)					
					)					
					and					
					Operating mode dependent Readiness LRA	=	TRUE	-		
					(					
					(					
					Lambda closed loop control upstream catalyst, bank 1	=	TRUE	-		
					(					
					Enleanment protection of lambda controller	=	FALSE	-		
					(					
					(					
					Large deceleration enleanment protection of lambda controller	=	FALSE	-		
					(					
					Relative fuel mass transient component threshold for deceleration enleanment	>=	-10.0078	%/seg		
					Relative fuel mass transient component threshold for deceleration enleanment in bank 2	>=	-10.0078	%/seg		
					)					
					for time (see Look-Up-Table #P2177-6)	>=	0.5 to 1	sec		
					)					
					OR					
					(					
					Large acceleration enrichment protection of lambda controller	=	FALSE	-		
					(					
					Relative fuel mass transient componet threshold for acceleration enrichment	<=	19.0078	%/seg		
					Relative fuel mass transient componet threshold for acceleration enrichmen	<=	19.0078	%/seg		
					)					
					for time (see Look-Up-Table #P2177-5)	>=	0.3 to 1	sec		
					)					
					)					
					and					
					Upstream Lambda closed loop control for bank 1	=	TRUE	-		
					(					
					Lambda control disabled during after cylinder cut~off	=	FALSE	-		
					and					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					Lambda swtiched ON after fuel cutoff	=	TRUE	-		
					(					
					Fuel cut off is active	=	FALSE	-		
					and					
					(					
					Time running down after fuel cut−off for enabling lambda control	>	8	sec		
					OR					
					(					
					Absolute value of diffence in lambda of bank 1	<=	0.1001	-		
					and					
					Difference of counter time and plant time constant a-(b+c) where a is Time running down after fuel cut−off for enabling lambda control b is plant time constant for continuous air/fuel control c is plant parameter for dead time for lambda control	>	0	sec		
					)					
					)					
					)					
					and					
					LSU sensor upstream to catalyst ready for operation	=	TRUE	-		
					(					
					Level of lambda sensor 1 signal quality	<=	12	-		
					)					
					and					
					Lambda control disabled by a fault	=	FALSE	-		
					(					
					Catalyst damaging misfire rate exceeded	=	FALSE	-		
					and					
					Injector power stage fault is active	=	FALSE	-		
					and					
					Camshaft fault in critical operating range present and MAF is main air charge sensor	=	FALSE	-		
					)					
					and					
					lambda control is active since warmup is finished	=	TRUE	-		
					and					
					Relative air charge	>	0	%		
					for time	>=	2	sec		
					)					
					and					
					Lamda control active due to GDI mode change	=	TRUE	-		
					(					
					GDI mode homogeneous	=	TRUE	-		
					for time	>=	0.8	sec		
					)					
					)					
					and					
					Lambda set point	>=	0.6499	-		
					and					
					Minimum injection time limitation for GDI mode is active	=	FALSE	-		
					and					
					Width of dead zone for lambda control deviation	<	0.999969	-		
					and					
					(					
					Width of dead zone for lambda control deviation	<	0	-		
					OR					
					Lambda control continuos error	>	0	-		
					)					
					)					
					OR					
					(					
					Unrestricted operation of Upstream closed loop lambda controller of bank 2 is active	=	TRUE	-		
					(					
					Enleanment protection of lambda controller	=	FALSE	-		
					(					
					(					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					Large deceleration enleanment protection of lambda controller	=	FALSE	-		
					(					
					Relative fuel mass transient component threshold for deceleration enleanment	>=	-10.0078	%/seg		
					Relative fuel mass transient component threshold for deceleration enleanment in bank 2	>=	-10.0078	%/seg		
					)					
					for time (see Look-Up-Table #P2177-6)	<=	0.5 to 1	sec		
					)					
					OR					
					(					
					Large acceleration enrichment protection of lambda controller	=	FALSE	-		
					(					
					Relative fuel mass transient componet threshold for acceleration enrichment	<=	19.0078	%/seg		
					Relative fuel mass transient componet threshold for acceleration enrichmen	<=	19.0078	%/seg		
					)					
					for time (see Look-Up-Table #P2177-5)	<=	0.3 to 1	sec		
					)					
					)					
					and					
					Upstream Lambda closed loop control for bank 2	=	TRUE	-		
					(					
					Lambda control disabled during after cylinder cut−off	=	FALSE	-		
					and					
					Lambda swtiched ON after fuel cutoff	=	TRUE	-		
					(					
					Fuel cut off is active	=	FALSE	-		
					and					
					(					
					Time running down after fuel cut−off for enabling lambda control	>	8	sec		
					OR					
					(					
					Absolute value of diffence in lambda of bank 2	<=	0.1001	-		
					and					
					Difference of counter time and plant time constant	>	0	sec		
					a-(b+c)					
					where a is Time running down after fuel cut−off for enabling lambda control					
					b is plant time constant of bank 2 for continuous air/fuel control					
					c is plant parameter of bank 2 for dead time for lambda control					
					)					
					)					
					)					
					and					
					LSU sensor upstream to catalyst ready for operation	=	TRUE	-		
					(					
					Level of lambda sensor 1, bank 2 signal quality	<=	12	-		
					)					
					and					
					Lambda control disabled by a fault	=	FALSE	-		
					(					
					Catalyst damaging misfire rate exceeded	=	FALSE	-		
					and					
					Injector power stage fault is active	=	FALSE	-		
					and					
					Camshaft fault in critical operating range present and MAF is main air charge sensor	=	FALSE	-		
					)					
					and					
					lambda control is active since warmup is finished	=	TRUE	-		
					and					
					Relative air charge	>	0	%		
					for time	>=	2	sec		
					)					
					and					
					Lamda control active due to GDI mode change	=	TRUE	-		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					(			
					GDI mode homogeneous	= TRUE -		
					for time	>= 0.8 sec		
					)			
					)			
					and			
					Lambda set point	>= 0.6499 -		
					and			
					Minimum injection time limitation for GDI mode of bank 2 is active	= FALSE -		
					and			
					Width of dead zone for Width of dead zone for lambda control deviation	< 0.999969 -		
					and			
					(			
					Width of dead zone for lambda control deviation	= 0 -		
					OR			
					Lambda control continuos error	> 0 -		
					)			
					)			
					for time	>= 3 sec		
					)			
					and			
					(			
					Difference between lambda value referenced to sensor fitting of bank 1 and bank 2	>= 0 -		
					and			
					Lambda set point	< 1.04004 -		
					and			
					(			
					Detection of fuel mixture adaption	= TRUE -		
					(			
					Lambda set point of bank 2	> 0.8999 -		
					)			
					OR			
					Lambda set point of bank 2	> 0.95996 -		
					)			
					for time	>= Max(A,B) sec		
					where A - delay time for lambda fuel adaption (rich condition)	0 sec		
					where B - delay time for lambda fuel adaption (lean condition)	0 sec		
					)			
					and			
					Limitation due to fuel in oil is deactivated	= TRUE -		
					and			
					Limitation due to fuel in oil is deactivated for bank 2	= TRUE -		
					)			
					and			
					(			
					Half Engine mode is deactivated	= TRUE -		
					for time	>= 10 sec		
					)			
					)			
					and			
					Lambda closed loop control upstream catalyst, bank 1	= TRUE -		
					)			
					Multiplicative adaptation correction factor, bank 1	> 0 -		
					)			
					)			
					and			
					(			
					LTFT additive part Bank 1 Integrator is stable which is of the following conditions	= TRUE -		
					(			
					(			
					Condition diagnostic thresholds of additive correction currently exceeded of bank 1 is stable	= TRUE -		
					(			
					Additive part of LTFT for bank 1	> 5.484 %		
					OR			
					Additive part of LTFT for bank 1	< -5.484 %		
					)			
					OR			
					Similar conditions for additive fuel adaptation fulfilled	= TRUE -		
					(			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					Difference between Measured and reference Engine speed	<=	375	rpm		
					and					
					Difference between reference and measured Engine speed	<=	375	rpm		
					and					
					Difference between measured load value to reference load	<=	20	-		
					and					
					Difference between reference load value to measured load	<=	20	-		
					)					
					)					
					and					
					LTFT additive part Bank 1 is stable, which is the following conditions for time	>=	10	sec		
					(					
					(					
					Condition diagnostic thresholds of additive correction currently exceeded of bank 1 is stable	=	TRUE	-		
					(					
					Absolute change of LTFT additive part, Bank 1	<=	0.188	%		
					)					
					OR					
					Absolute change of LTFT additive part, Bank 1	<=	0.188	%		
					)					
					and					
					(					
					Condition diagnostic thresholds of additive correction currently exceeded of bank 1 is stable	=	TRUE	-		
					OR					
					Change in short term fuel trim, Bank 1	<=	0.049988	-		
					)					
					and					
					Absolute difference between LTFT multiplicative part, Bank 1 and its fixed value at beginning of additive steady state phase	<=	0.049988	%		
					and					
					Additive mixture adaptation is active	=	TRUE	-		
					(					
					(					
					Additive mixture adaptation is active, which is the following conditions:	=	TRUE	-		
					(					
					Ora operational readiness independent of the operating mode is active, which is the following conditions for time	>=	0	sec		
					(					
					Fundamental operating mode independent operation readiness of mixture adaption	=	TRUE	-		
					and					
					ORA adaption physically enabled	=	TRUE	-		
					(					
					Torque commanded to charge control (see Look-Up-Table #P2187-2)	>=	3.99933 to 99.98932	%		
					and					
					Torque commanded to charge control (see Look-Up-Table #P2187-1)	<=	0 to 14.99939	%		
					)					
					)					
					and					
					Operating mode dependent Readiness LRA	=	TRUE	-		
					)					
					and					
					Lambda closed loop control upstream catalyst, bank 1	=	TRUE	-		
					)					
					and					
					Additive adaptation correction factor, bank 1	>	0	-		
					)					
					)					
					)					
					No pending or confirmed DTCs	=	see sheet inhibit tables	-		
					Basic enable conditions met	=	see sheet enable tables	-		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
Fuel Trim Bank 2	P2189	Additive part of the Long Term Fuel Trim for Bank 2 in gasoline mode is greater than a calibrated threshold	Additive part of LTFT, Bank 2	>	5.484	%	LTFT Additive mixture adaptation bank 2 is active	=	TRUE	-	multiple	2 Trips
							(					
							(					
							LTFT multiplicative part Bank 2 Integrator is stable which is of the following conditions	=	TRUE	-		
							(					
							(					
							Condition diagnostic thresholds of multiplicative correction currently exceeded of bank 2 is stable	=	TRUE	-		
							(					
							Multiplicative part of LTFT for bank 2	>	1.230011	-		
							OR					
							Multiplicative part of LTFT for bank 2	<	0.769989	-		
							)					
							OR					
							Similar conditions for multiplicative fuel adaptation fulfilled for bank 2	=	TRUE	-		
							(					
							Difference between Measured and reference Engine speed, bank 2	<=	375	rpm		
							and					
							Difference between reference and measured Engine speed, bank 2	<=	375	rpm		
							and					
							Difference between measured load value to reference load, bank 2	<=	20	-		
							and					
							Difference between reference load value to measured load, bank 2	<=	20	-		
							)					
							)					
							and					
							LTFT multiplicative part Bank 2 is stable, which is the following conditions for time	>=	10	sec		
							(					
							(					
							Condition diagnostic thresholds of multiplicative correction currently exceeded of bank 2 is stable	=	TRUE	-		
							(					
							Absolute change of LTFT multiplicative part, Bank 2	<=	1.999969	-		
							)					
							OR					
							Absolute change of LTFT multiplicative part, Bank 2	<=	0.029999	-		
							)					
							and					
							(					
							Condition diagnostic thresholds of multiplicative correction currently exceeded of bank 2 is stable	=	TRUE	-		
							OR					
							Change in short term fuel trim, Bank 2	<=	0.049988	-		
							)					
							and					
							Absolute difference between LTFT additive part, Bank 1 and its fixed value at beginning of multiplicative steady state phase	<=	0.75	%		
							and					
							Multiplicative mixture adaptation is active, bank 2	=	TRUE	-		
							(					
							(					
							Multiplicative mixture adaptation is active, which is the following conditions:	=	TRUE	-		
							(					
							Fra operational readiness independent of the operating mode is active, which is the following conditions for time	>=	2	sec		
							(					
							Fundamental operating mode independent operation readiness of mixture adaption	=	TRUE	-		
							(					
							(					
							Condition error suspicion in mixture adaptation	=	TRUE	-		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					(					
					Coolant Engine Temperature	>=	Min(C, D)	deg C		
					where C - cut-in temperature adaptive precontrol for lambda closed-loop control	=	54.8	deg C		
					where D - cut-in temperature fuel mixture adaptation in case of error suspicion	=	54.8	deg C		
					)					
					OR					
					Coolant Engine Temperature	>=	54.8	deg C		
					)					
					and					
					Basic willingness of fuel mixture adaptation, except engine temperature	=	TRUE	-		
					(					
					Intake air temperature	<	90	deg C		
					and					
					Conditiion of Wide Open Throttle	=	FALSE	-		
					(					
					Propulsion torque after driving assistance coordination	<	3276.7	Nm		
					)					
					and					
					Increased tolerances of air charge determination expected	=	FALSE	-		
					and					
					Maximum proportion of evaporating fuel from the engine oil to the fuel demand (model based)	<=	0	-		
					and					
					Ratio total charge to charge in cylinder	<	15	-		
					)					
					and					
					(					
					Number of injections since start	>=	1200	-		
					OR					
					Number of injections since start	>=	1000	-		
					)					
					)					
					and					
					FRA adaption physically enabled	=	TRUE	-		
					(					
					Torque commanded to charge control (see Look-Up-Table #P2177-2)	>=	8.00018 to 99.98932	%		
					and					
					Torque commanded to charge control (see Look-Up-Table #P2177-1)	<=	0 to 44.99969	%		
					)					
					)					
					and					
					Operating mode dependent Readiness LRA	=	TRUE	-		
					(					
					(					
					Lambda closed loop control upstream catalyst, bank 1	=	TRUE	-		
					(					
					Enleanment protection of lambda controller	=	FALSE	-		
					(					
					(					
					Large deceleration enleanment protection of lambda controller	=	FALSE	-		
					(					
					Relative fuel mass transient component threshold for deceleration enleanment	>=	-10.0078	%/seg		
					Relative fuel mass transient component threshold for deceleration enleanment in bank 2	>=	-10.0078	%/seg		
					)					
					for time (see Look-Up-Table #P2177-6)	>=	0.5 to 1	sec		
					)					
					OR					
					(					
					Large acceleration enrichment protection of lambda controller	=	FALSE	-		
					(					
					Relative fuel mass transient componet threshold for acceleration enrichment	<=	19.0078	%/seg		
					Relative fuel mass transient componet threshold for acceleration enrichmen	<=	19.0078	%/seg		
					)					
					for time (see Look-Up-Table #P2177-5)	>=	0.3 to 1	sec		
					)					
					)					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					and					
					Upstream Lambda closed loop control for bank 1	=	TRUE	-		
					(					
					Lambda control disabled during after cylinder cut−off	=	FALSE	-		
					and					
					Lambda swtiched ON after fuel cutoff	=	TRUE	-		
					(					
					Fuel cut off is active	=	FALSE	-		
					and					
					(					
					Time running down after fuel cut−off for enabling lambda control	>	8	sec		
					OR					
					(					
					Absolute value of diffence in lambda of bank 1	<=	0.1001	-		
					and					
					Difference of counter time and plant time constant	>	0	sec		
					a-(b+c)					
					where a is Time running down after fuel cut−off for enabling lambda control					
					b is plant time constant for continuous air/fuel control					
					c is plant parameter for dead time for lambda control					
					)					
					)					
					)					
					and					
					LSU sensor upstream to catalyst ready for operation	=	TRUE	-		
					(					
					Level of lambda sensor 1 signal quality	<=	12	-		
					)					
					and					
					Lambda control disabled by a fault	=	FALSE	-		
					(					
					Catalyst damaging misfire rate exceeded	=	FALSE	-		
					and					
					Injector power stage fault is active	=	FALSE	-		
					and					
					Camshaft fault in critical operating range present and MAF is main air charge sensor	=	FALSE	-		
					)					
					and					
					lambda control is active since warmup is finished	=	TRUE	-		
					and					
					Relative air charge	>	0	%		
					for time	>=	2	sec		
					)					
					and					
					Lamda control active due to GDI mode change	=	TRUE	-		
					(					
					GDI mode homogeneous	=	TRUE	-		
					for time	>=	0.8	sec		
					)					
					)					
					and					
					Lambda set point	>=	0.6499	-		
					and					
					Minimum injection time limitation for GDI mode is active	=	FALSE	-		
					and					
					Width of dead zone for lambda control deviation	<	0.999969	-		
					and					
					(					
					Width of dead zone for lambda control deviation	<	0	-		
					OR					
					Lambda control continuos error	>	0	-		
					)					
					)					
					OR					
					(					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Unrestricted operation of Upstream closed loop lambda controller of bank 2 is active	= TRUE -		
					(			
					Enleanment protection of lambda controller	= FALSE -		
					(			
					(			
					Large deceleration enleanment protection of lambda controller	= FALSE -		
					(			
					Relative fuel mass transient component threshold for deceleration enleanment	>= -10.0078 %/seg		
					Relative fuel mass transient component threshold for deceleration enleanment in bank 2	>= -10.0078 %/seg		
					)			
					for time (see Look-Up-Table #P2177-6)	<= 0.5 to 1 sec		
					)			
					OR			
					(			
					Large acceleration enrichment protection of lambda controller	= FALSE -		
					(			
					Relative fuel mass transient componet threshold for acceleration enrichment	<= 19.0078 %/seg		
					Relative fuel mass transient componet threshold for acceleration enrichmen	<= 19.0078 %/seg		
					)			
					for time (see Look-Up-Table #P2177-5)	<= 0.3 to 1 sec		
					)			
					)			
					and			
					Upstream Lambda closed loop control for bank 2	= TRUE -		
					(			
					Lambda control disabled during after cylinder cut−off	= FALSE -		
					and			
					Lambda swtiched ON after fuel cutoff	= TRUE -		
					(			
					Fuel cut off is active	= FALSE -		
					and			
					(			
					Time running down after fuel cut−off for enabling lambda control	> 8 sec		
					OR			
					(			
					Absolute value of diffence in lambda of bank 2	<= 0.1001 -		
					and			
					Difference of counter time and plant time constant a-(b+c) where a is Time running down after fuel cut−off for enabling lambda control b is plant time constant of bank 2 for continuous air/fuel control c is plant parameter of bank 2 for dead time for lambda control	> 0 sec		
					)			
					)			
					)			
					and			
					LSU sensor upstream to catalyst ready for operation	= TRUE -		
					(			
					Level of lambda sensor 1, bank 2 signal quality	<= 12 -		
					)			
					and			
					Lambda control disabled by a fault	= FALSE -		
					(			
					Catalyst damaging misfire rate exceeded	= FALSE -		
					and			
					Injector power stage fault is active	= FALSE -		
					and			
					Camshaft fault in critical operating range present and MAF is main air charge sensor	= FALSE -		
					)			
					and			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					lambda control is active since warmup is finished	=	TRUE	-		
					and					
					Relative air charge	>	0	%		
					(					
					for time	>=	2	sec		
					)					
					and					
					Lamda control active due to GDI mode change	=	TRUE	-		
					(					
					GDI mode homogeneous	=	TRUE	-		
					for time	>=	0.8	sec		
					)					
					)					
					and					
					Lambda set point	>=	0.6499	-		
					and					
					Minimum injection time limitation for GDI mode of bank 2 is active	=	FALSE	-		
					and					
					Width of dead zone for Width of dead zone for lambda control deviation	<	0.999969	-		
					and					
					(					
					Width of dead zone for lambda control deviation	=	0	-		
					OR					
					Lambda control continuos error	>	0	-		
					)					
					)					
					for time	>=	3	sec		
					)					
					and					
					(					
					Difference between lambda value referenced to sensor fitting of bank 1 and bank 2	>=	0	-		
					and					
					Lambda set point	<	1.04004	-		
					and					
					(					
					Detection of fuel mixture adaption	=	TRUE	-		
					(					
					Lambda set point of bank 2	>	0.8999	-		
					)					
					OR					
					Lambda set point of bank 2	>	0.95996	-		
					)					
					for time	>=	Max(A,B)	sec		
					where A - delay time for lambda fuel adaption (rich condition)		0	sec		
					where B - delay time for lambda fuel adaption (lean condition)		0	sec		
					)					
					and					
					Limitation due to fuel in oil is deactivated	=	TRUE	-		
					and					
					Limitation due to fuel in oil is deactivated for bank 2	=	TRUE	-		
					)					
					and					
					(					
					Half Engine mode is deactivated	=	TRUE	-		
					for time	>=	10	sec		
					)					
					)					
					and					
					Lambda closed loop control upstream catalyst, bank 2	=	TRUE	-		
					)					
					Multiplicative adaptation correction factor, bank 2	>	0	-		
					)					
					)					
					and					
					(					
					LTFT additive part Bank 2 Integrator is stable which is of the following conditions	=	TRUE	-		
					(					
					(					
					Condition diagnostic thresholds of additive correction currently exceeded of bank 2 is stable	=	TRUE	-		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					(			
					Additive part of LTFT for bank 2	> 5.484 %		
					OR			
					Additive part of LTFT for bank 2	< -5.484 %		
					)			
					OR			
					Similar conditions for additive fuel adaptation fulfilled, bank 2	= TRUE -		
					(			
					Difference between Measured and reference Engine speed, bank 2	<= 375 rpm		
					and			
					Difference between reference and measured Engine speed, bank 2	<= 375 rpm		
					and			
					Difference between measured load value to reference load, bank 2	<= 20 -		
					and			
					Difference between reference load value to measured load, bank 2	<= 20 -		
					)			
					)			
					and			
					LTFT additive part Bank 2 is stable, which is the following conditions for time	>= 10 sec		
					(			
					(			
					Condition diagnostic thresholds of additive correction currently exceeded of bank 2 is stable	= TRUE -		
					(			
					Absolute change of LTFT additive part, Bank 2	<= 0.188 %		
					)			
					OR			
					Absolute change of LTFT additive part, Bank 2	<= 0.188 %		
					)			
					and			
					(			
					Condition diagnostic thresholds of additive correction currently exceeded of bank 2 is stable	= TRUE -		
					OR			
					Change in short term fuel trim, Bank 2	<= 0.049988 -		
					)			
					and			
					Absolute difference between LTFT multiplicative part, Bank 2 and its fixed value at beginning of additive steady state phase	<= 0.049988 %		
					and			
					Additive mixture adaptation is active, bank2	= TRUE -		
					(			
					(			
					Additive mixture adaptation is active, which is the following conditions:	= TRUE -		
					(			
					Ora operational readiness independent of the operating mode is active, which is the following conditions for time	>= 0 sec		
					(			
					Fundamental operating mode independent operation readiness of mixture adaption	= TRUE -		
					and			
					ORA adaption physically enabled	= TRUE -		
					(			
					Torque commanded to charge control (see Look-Up-Table #P2187-2)	>= 3.99933 to 99.98932 %		
					and			
					Torque commanded to charge control (see Look-Up-Table #P2187-1)	<= 0 to 14.99939 %		
					)			
					)			
					and			
					Operating mode dependent Readiness LRA	= TRUE -		
					)			
					and			
					Lambda closed loop control upstream catalyst, bank 2	= TRUE -		
					)			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
							and					
							Additive adaptation correction factor, bank 2	>	0	-		
							)					
							)					
							)					
							No pending or confirmed DTCs	=	see sheet inhibit tables	-		
							Basic enable conditions met	=	see sheet enable tables	-		
Fuel Trim Bank 2	P2190	Additive part of the Long Term Fuel Trim for Bank 2 in gasoline mode is less than a calibrated threshold	Additive part of LTFT, Bank 2	<	-5.484	%	LTFT Additive mixture adaptation bank 2 is active	=	TRUE	-	multiple	2 Trips
							(					
							(					
							LTFT multiplicative part Bank 2 Integrator is stable which is of the following conditions	=	TRUE	-		
							(					
							(					
							Condition diagnostic thresholds of multiplicative correction currently exceeded of bank 2 is stable	=	TRUE	-		
							(					
							Multiplicative part of LTFT for bank 2	>	1.230011	-		
							OR					
							Multiplicative part of LTFT for bank 2	<	0.769989	-		
							)					
							OR					
							Similar conditions for multiplicative fuel adaptation fulfilled for bank 2	=	TRUE	-		
							(					
							Difference between Measured and reference Engine speed, bank 2	<=	375	rpm		
							and					
							Difference between reference and measured Engine speed, bank 2	<=	375	rpm		
							and					
							Difference between measured load value to reference load, bank 2	<=	20	-		
							and					
							Difference between reference load value to measured load, bank 2	<=	20	-		
							)					
							)					
							and					
							LTFT multiplicative part Bank 2 is stable, which is the following conditions for time	>=	10	sec		
							(					
							(					
							Condition diagnostic thresholds of multiplicative correction currently exceeded of bank 2 is stable	=	TRUE	-		
							(					
							Absolute change of LTFT multiplicative part, Bank 2	<=	1.999969	-		
							)					
							OR					
							Absolute change of LTFT multiplicative part, Bank 2	<=	0.029999	-		
							)					
							and					
							(					
							Condition diagnostic thresholds of multiplicative correction currently exceeded of bank 2 is stable	=	TRUE	-		
							OR					
							Change in short term fuel trim, Bank 2	<=	0.049988	-		
							)					
							and					
							Absolute difference between LTFT additive part, Bank 1 and its fixed value at beginning of multiplicative steady state phase	<=	0.75	%		
							and					
							Multiplicative mixture adaptation is active, bank 2	=	TRUE	-		
							(					
							(					
							Multiplicative mixture adaptation is active, which is the following conditions:	=	TRUE	-		
							(					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					Fra operational readiness independent of the operating mode is active, which is the following conditions for time	>=	2	sec		
					(					
					Fundamental operating mode independent operation readiness of mixture adaption	=	TRUE	-		
					(					
					(					
					Condition error suspicion in mixture adaptation	=	TRUE	-		
					(					
					Coolant Engine Temperature	>=	Min(C, D)	deg C		
					where C - cut-in temperature adaptive precontrol for lambda closed-loop control	=	54.8	deg C		
					where D - cut-in temperature fuel mixture adaptation in case of error suspicion	=	54.8	deg C		
					)					
					OR					
					Coolant Engine Temperature	>=	54.8	deg C		
					)					
					and					
					Basic willingness of fuel mixture adaptation, except engine temperature	=	TRUE	-		
					(					
					Intake air temperature	<	90	deg C		
					and					
					Conditiion of Wide Open Throttle	=	FALSE	-		
					(					
					Propulsion torque after driving assistance coordination	<	3276.7	Nm		
					)					
					and					
					Increased tolerances of air charge determination expected	=	FALSE	-		
					and					
					Maximum proportion of evaporating fuel from the engine oil to the fuel demand (model based)	<=	0	-		
					and					
					Ratio total charge to charge in cylinder	<	15	-		
					)					
					and					
					(					
					Number of injections since start	>=	1200	-		
					OR					
					Number of injections since start	>=	1000	-		
					)					
					)					
					and					
					FRA adaption physically enabled	=	TRUE	-		
					(					
					Torque commanded to charge control (see Look-Up-Table #P2177-2)	>=	8.00018 to 99.98932	%		
					and					
					Torque commanded to charge control (see Look-Up-Table #P2177-1)	<=	0 to 44.99969	%		
					)					
					)					
					and					
					Operating mode dependent Readiness LRA	=	TRUE	-		
					(					
					(					
					Lambda closed loop control upstream catalyst, bank 1	=	TRUE	-		
					(					
					Enleanment protection of lambda controller	=	FALSE	-		
					(					
					(					
					Large deceleration enleanment protection of lambda controller	=	FALSE	-		
					(					
					Relative fuel mass transient component threshold for deceleration enleanment	>=	-10.0078	%/seg		
					Relative fuel mass transient component threshold for deceleration enleanment in bank 2	>=	-10.0078	%/seg		
					)					
					for time (see Look-Up-Table #P2177-6)	>=	0.5 to 1	sec		
					)					
					OR					
					(					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					Large acceleration enrichment protection of lambda controller	=	FALSE	-		
					(					
					Relative fuel mass transient componet threshold for acceleration enrichment	<=	19.0078	%/seg		
					Relative fuel mass transient componet threshold for acceleration enrichmen	<=	19.0078	%/seg		
					)					
					for time (see Look-Up-Table #P2177-5)	>=	0.3 to 1	sec		
					)					
					)					
					and					
					Upstream Lambda closed loop control for bank 1	=	TRUE	-		
					(					
					Lambda control disabled during after cylinder cut−off	=	FALSE	-		
					and					
					Lambda swtiched ON after fuel cutoff	=	TRUE	-		
					(					
					Fuel cut off is active	=	FALSE	-		
					and					
					(					
					Time running down after fuel cut−off for enabling lambda control	>	8	sec		
					OR					
					(					
					Absolute value of diffence in lambda of bank 1	<=	0.1001	-		
					and					
					Difference of counter time and plant time constant	>	0	sec		
					a-(b+c)					
					where a is Time running down after fuel cut−off for enabling lambda control					
					b is plant time constant for continuous air/fuel control					
					c is plant parameter for dead time for lambda control					
					)					
					)					
					)					
					and					
					LSU sensor upstream to catalyst ready for operation	=	TRUE	-		
					(					
					Level of lambda sensor 1 signal quality	<=	12	-		
					)					
					and					
					Lambda control disabled by a fault	=	FALSE	-		
					(					
					Catalyst damaging misfire rate exceeded	=	FALSE	-		
					and					
					Injector power stage fault is active	=	FALSE	-		
					and					
					Camshaft fault in critical operating range present and MAF is main air charge sensor	=	FALSE	-		
					)					
					and					
					lambda control is active since warmup is finished	=	TRUE	-		
					and					
					Relative air charge	>	0	%		
					(					
					for time	>=	2	sec		
					)					
					and					
					Lamda control active due to GDI mode change	=	TRUE	-		
					(					
					GDI mode homogeneous	=	TRUE	-		
					for time	>=	0.8	sec		
					)					
					)					
					and					
					Lambda set point	>=	0.6499	-		
					and					
					Minimum injection time limitation for GDI mode is active	=	FALSE	-		
					and					
					Width of dead zone for lambda control deviation	<	0.999969	-		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					and					
					(					
					Width of dead zone for lambda control deviation	<	0	-		
					OR					
					Lambda control continuos error	>	0	-		
					)					
					)					
					OR					
					(					
					Unrestricted operation of Upstream closed loop lambda controller of bank 2 is active	=	TRUE	-		
					(					
					Enleanment protection of lambda controller	=	FALSE	-		
					(					
					(					
					Large deceleration enleanment protection of lambda controller	=	FALSE	-		
					(					
					Relative fuel mass transient component threshold for deceleration enleanment	>=	-10.0078	%/seg		
					Relative fuel mass transient component threshold for deceleration enleanment in bank 2	>=	-10.0078	%/seg		
					)					
					for time (see Look-Up-Table #P2177-6)	<=	0.5 to 1	sec		
					)					
					OR					
					(					
					Large acceleration enrichment protection of lambda controller	=	FALSE	-		
					(					
					Relative fuel mass transient componet threshold for acceleration enrichment	<=	19.0078	%/seg		
					Relative fuel mass transient componet threshold for acceleration enrichmen	<=	19.0078	%/seg		
					)					
					for time (see Look-Up-Table #P2177-5)	<=	0.3 to 1	sec		
					)					
					)					
					and					
					Upstream Lambda closed loop control for bank 2	=	TRUE	-		
					(					
					Lambda control disabled during after cylinder cut−off	=	FALSE	-		
					and					
					Lambda swtiched ON after fuel cutoff	=	TRUE	-		
					(					
					Fuel cut off is active	=	FALSE	-		
					and					
					(					
					Time running down after fuel cut−off for enabling lambda control	>	8	sec		
					OR					
					(					
					Absolute value of diffence in lambda of bank 2	<=	0.1001	-		
					and					
					Difference of counter time and plant time constant	>	0	sec		
					a-(b+c)					
					where a is Time running down after fuel cut−off for enabling lambda control					
					b is plant time constant of bank 2 for continuous air/fuel control					
					c is plant parameter of bank 2 for dead time for lambda control					
					)					
					)					
					)					
					and					
					LSU sensor upstream to catalyst ready for operation	=	TRUE	-		
					(					
					Level of lambda sensor 1, bank 2 signal quality	<=	12	-		
					)					
					and					
					Lambda control disabled by a fault	=	FALSE	-		
					(					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					Catalyst damaging misfire rate exceeded	=	FALSE	-		
					and					
					Injector power stage fault is active	=	FALSE	-		
					and					
					Camshaft fault in critical operating range present and MAF is main air charge sensor	=	FALSE	-		
					)					
					and					
					lambda control is active since warmup is finished	=	TRUE	-		
					and					
					Relative air charge	>	0	%		
					for time	>=	2	sec		
					)					
					and					
					Lamda control active due to GDI mode change	=	TRUE	-		
					(					
					GDI mode homogeneous	=	TRUE	-		
					for time	>=	0.8	sec		
					)					
					)					
					and					
					Lambda set point	>=	0.6499	-		
					and					
					Minimum injection time limitation for GDI mode of bank 2 is active	=	FALSE	-		
					and					
					Width of dead zone for Width of dead zone for lambda control deviation	<	0.999969	-		
					and					
					(					
					Width of dead zone for lambda control deviation	=	0	-		
					OR					
					Lambda control continuos error	>	0	-		
					)					
					)					
					for time	>=	3	sec		
					)					
					and					
					(					
					Difference between lambda value referenced to sensor fitting of bank 1 and bank 2	>=	0	-		
					and					
					Lambda set point	<	1.04004	-		
					and					
					(					
					Detection of fuel mixture adaption	=	TRUE	-		
					(					
					Lambda set point of bank 2	>	0.8999	-		
					)					
					OR					
					Lambda set point of bank 2	>	0.95996	-		
					)					
					for time	>=	Max(A,B)	sec		
					where A - delay time for lambda fuel adaption (rich condition)		0	sec		
					where B - delay time for lambda fuel adaption (lean condition)		0	sec		
					)					
					and					
					Limitation due to fuel in oil is deactivated	=	TRUE	-		
					and					
					Limitation due to fuel in oil is deactivated for bank 2	=	TRUE	-		
					)					
					and					
					(					
					Half Engine mode is deactivated	=	TRUE	-		
					for time	>=	10	sec		
					)					
					)					
					and					
					Lambda closed loop control upstream catalyst, bank 2	=	TRUE	-		
					)					
					Multiplicative adaptation correction factor, bank 2	>	0	-		
					)					
					)					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					and					
					(					
					LTFT additive part Bank 2 Integrator is stable which is of the following conditions	=	TRUE	-		
					(					
					(					
					Condition diagnostic thresholds of additive correction currently exceeded of bank 2 is stable	=	TRUE	-		
					(					
					Additive part of LTFT for bank 2	>	5.484	%		
					OR					
					Additive part of LTFT for bank 2	<	-5.484	%		
					)					
					OR					
					Similar conditions for additive fuel adaptation fulfilled, bank 2	=	TRUE	-		
					(					
					Difference between Measured and reference Engine speed, bank 2	<=	375	rpm		
					and					
					Difference between reference and measured Engine speed, bank 2	<=	375	rpm		
					and					
					Difference between measured load value to reference load, bank 2	<=	20	-		
					and					
					Difference between reference load value to measured load, bank 2	<=	20	-		
					)					
					)					
					and					
					LTFT additive part Bank 2 is stable, which is the following conditions for time	>=	10	sec		
					(					
					(					
					Condition diagnostic thresholds of additive correction currently exceeded of bank 2 is stable	=	TRUE	-		
					(					
					Absolute change of LTFT additive part, Bank 2	<=	0.188	%		
					)					
					OR					
					Absolute change of LTFT additive part, Bank 2	<=	0.188	%		
					)					
					and					
					(					
					Condition diagnostic thresholds of additive correction currently exceeded of bank 2 is stable	=	TRUE	-		
					OR					
					Change in short term fuel trim, Bank 2	<=	0.049988	-		
					)					
					and					
					Absolute difference between LTFT multiplicative part, Bank 2 and its fixed value at beginning of additive steady state phase	<=	0.049988	%		
					and					
					Additive mixture adaptation is active, bank2	=	TRUE	-		
					(					
					(					
					Additive mixture adaptation is active, which is the following conditions:	=	TRUE	-		
					(					
					Ora operational readiness independent of the operating mode is active, which is the following conditions for time	>=	0	sec		
					(					
					Fundamental operating mode independent operation readiness of mixture adaption	=	TRUE	-		
					and					
					ORA adaption physically enabled	=	TRUE	-		
					(					
					Torque commanded to charge control (see Look-Up-Table #P2187-2)	>=	3.99933 to 99.98932	%		
					and					
					Torque commanded to charge control (see Look-Up-Table #P2187-1)	<=	0 to 14.99939	%		
					)					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
							)					
							and					
							Operating mode dependent Readiness LRA	=	TRUE	-		
							)					
							and					
							Lambda closed loop control upstream catalyst, bank 2	=	TRUE	-		
							)					
							and					
							Additive adaptation correction factor, bank 2	>	0	-		
							)					
							)					
							)					
							No pending or confirmed DTCs	=	see sheet inhibit tables	-		
							Basic enable conditions met	=	see sheet enable tables	-		
Upstream Exhaust Gas sensor, Bank 1	P2096	Fuel trim fault diagnosis of upstream exhaust gas sensor when the lambda offset is not within the calibrated threshold range - out of range low	(				Debounce condition for fault confirmation by offset adaptation (sensor 1, bank 1)	=	TRUE	-	once per driving cycle	2 Trips
			Lambda offset of upstream exhaust gas sensor	<	-0.03009	-	(					
			Lambda offset of upstream exhaust gas sensor	>=	-0.059998	-	Debouncing of offset fault by slow offset adaptation	=	TRUE	-		
			Difference between lambda offset of the sensor and lambda offset at the beginning of the driving cycle	<	0.002991	-	(					
			(				Slow offset adaptation	=	TRUE	-		
			(				(					
			Maximum offset fault is healed in the current driving cycle	=	TRUE	-	Bit p-part controlability primary control enable	=	TRUE	-		
			Minimum offset fault is healed in the current driving cycle	=	TRUE	-	(					
			)				(					
			OR				Lambda regulator setpoint active	=	TRUE	-		
			(				(					
			Maximum offset fault is set in the previous driving cycle	=	TRUE	-	Width of dead zone for lambda control deviation	>=	0.999969	-		
			OR				OR					
			Minimum offset fault is set in the previous driving cycle	=	TRUE	-	(					
			)				Lambda closed loop control (upstream catalyst), bank 1	=	TRUE	-		
			OR				OR					
			(				(					
			Fuel trim maximum fault is set in the previous driving cycle	=	TRUE	-	Lambda setpoint for sensor after addition of trim control action is not eqaul to 0	=	TRUE	-		
			OR				Difference between upper limit action value lambda control and temporary value before test for enleanment protection	>=	0	-		
			Fuel trim minimum fault is set in the previous driving cycle	=	TRUE	-	Difference between temporary value before test for enleanment protection and lower bound of dfr during enleanmant protection	>=	0	-		
			)				Lambda (measured and setpoint) is below minimal measurable lambda (bank 1)	=	FALSE	-		
			)				TEMIN-limitation active, bench 1	=	FALSE	-		
			)				)					
			OR				)					
			(				)					
			(				Current lowpass value of p-part control upstream primary control enable	>	0	%		
			Fuel trim maximum fault is set in the previous driving cycle	=	TRUE	-	Lambda closed loop control (upstream catalyst), bank 1	=	TRUE	-		
			OR				(					
			Fuel trim minimum fault is set in the previous driving cycle	=	TRUE	-	Lambda control disabled during or after cylinder cut−off	=	FALSE	-		
			)				Lambda swtiched ON after fuel cutoff	=	TRUE	-		
			Lambda offset of upstream exhaust gas sensor	<	0.059998	-	(					
			)				Fuel cut off is active	=	FALSE	-		
							(					
							Time running down after fuel cut−off for enabling lambda control	>	8	sec		
							OR					
							(					
							Absolute value of control difference in lambda, bank 1	<=	0.1001	-		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					Difference of counter time and plant time constant	>	0	sec		
					a-(b+c)					
					where a is Time running down after fuel cut−off for enabling lambda control					
					b is plant time constant for continuous air/fuel control					
					c is plant parameter for dead time for lambda control					
					)					
					)					
					)					
					LSU sensor upstream to catalyst ready for operation	=	TRUE	-		
					(					
					lambda sensor 1 temperature, bank 1	>=	654.998	deg C		
					)					
					Lambda control disabled by a fault	=	FALSE	-		
					lambda control is active since warmup is finished	=	TRUE	-		
					Relative air charge	>	0	%		
					for time	>=	2	sec		
					)					
					HEM condition to block lambda closed loop control upstream catalyst	=	FALSE	-		
					Lamda control active due to GDI mode change	=	TRUE	-		
					(					
					GDI mode homogeneous	=	TRUE	-		
					for time	>=	0.8	sec		
					)					
					)					
					(					
					Lambda control enabled for Cold operation sensor 2 bank 1	=	TRUE	-		
					OR					
					HEGO sensor 2 bank 1, signal valid	=	TRUE	-		
					(					
					Status of heating enable conditions for the sensor operating readiness	=	TRUE	-		
					(					
					Protective heating is finished	=	TRUE	-		
					for time	>=	15	sec		
					OR					
					Internal resistance OK for operating readiness	=	TRUE	-		
					(					
					Unfiltered internal resistance of HEGO sensor	<=	2000	Ohm		
					Protective heating is finished	=	TRUE	-		
					Counter for valid internal resistance measurements	>=	3	counts		
					)					
					)					
					Status of sensor signal enable conditions for the sensor operating readiness	=	TRUE	-		
					(					
					Internal resistance OK for operating readiness	=	TRUE	-		
					OR					
					(					
					(					
					Output voltage of HEGO Sensor	>=	0.551758	V		
					Output voltage of HEGO Sensor	<=	1.201172	V		
					)					
					OR					
					Output voltage of HEGO Sensor	<=	0.322266	V		
					)					
					OR					
					Sensor voltage stuck in countervoltage band	=	TRUE	-		
					(					
					(					
					(					
					Output voltage of HEGO Sensor	<	0.551758	V		
					Output voltage of HEGO Sensor	>	0.322266	V		
					)					
					(					
					Sensor open circuit fault existed in previous trip	=	TRUE	-		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 TEST GROUP: KGMXV04.2088 EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					OR			
					Sensor open circuit fault currently not detected	= TRUE -		
					)			
					Electrical diagnostics enabled	= TRUE -		
					)			
					for time	>= 20 sec		
					)			
					)			
					for time	>= 0.2 sec		
					)			
					)			
					)			
					Bit p-part system balanced primary control enable	= TRUE -		
					(			
					(			
					Lambda setpoint for sensor is set equal to 1	= TRUE -		
					OR			
					Lambda setpoint for sensor is set equal to 1	= FALSE -		
					for time	>= 10 sec		
					)			
					Rich catalyst purge	= FALSE -		
					Mass flow of exhaust gas, sensor 2	> 25 g		
					)			
					P-part active from temperature and dynamic diagnosis	= TRUE -		
					(			
					Temperature of catalyst 1	>= 349.96 deg C		
					Temperature of catalyst 1	< 899.96 deg C		
					)			
					)			
					Bit I-part global primary control enable	= TRUE -		
					(			
					(			
					Current lowpass value of I-part load primary control enable	> -1.5938 %		
					Current lowpass value of I-part load primary control enable	<= 1.5938 %		
					)			
					Diagnosis of canister purge system is active	= FALSE -		
					Ratio total charge to charge in cylinder	<= 1 -		
					Width of dead zone for lambda control deviation	= 0 -		
					Maximum value among the engine coolant temperature and model-based substitute value for engine temperature signal in case of error	> 34.96 deg C		
					(			
					Bit I-part global load and engine speed control enable	= TRUE -		
					(			
					Engine speed with low resolution	< 2600 rpm		
					Engine speed with low resolution	>= 1000 rpm		
					(			
					Half engine mode active	= TRUE -		
					(			
					Relative air mass during half engine mode (see Look-Up table #P2096-2)	< 30 to 90 %		
					Relative air mass during half engine mode (see Look-Up table #P2096-3)	>= 15 to 20.3 %		
					)			
					OR			
					Half engine mode active	= FALSE -		
					(			
					Relative air mass (see Look-Up table #P2096-4)	< 30 to 90 %		
					Relative air mass (see Look-Up table #P2096-5)	>= 15 to 20.3 %		
					)			
					)			
					)			
					)			
					)			
					(			
					Bit i-part system primary control enable	= TRUE -		
					(			
					Current integrator value of P-part balanced primary control enable	> 150 g		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					(					
					(					
					Dew point end of sensor 2 Bank1 is reached	=	TRUE	-		
					End of start is reached	=	TRUE	-		
					Exhaust gas mass flow sensor 2 Bank 1	>	179.91	g		
					)					
					OR					
					(					
					(					
					Dew point end of sensor 2 reached	=	FALSE	-		
					OR					
					End of start is reached	=	FALSE	-		
					)					
					Exhaust gas mass flow sensor 2	>	199.82	g		
					)					
					)					
					)					
					Bit i-part system temperature primary control enable	=	TRUE	-		
					(					
					Temperature of catalyst 1	>	349.96	deg C		
					Temperature of catalyst 1	<	869.96	deg C		
					)					
					)					
					)					
					Cumulated time in which slow offset adaptation was active	>=	150	sec		
					)					
					Debounce condition for fault confirmation by fast offset adaptation (sensor 1, bank 1)	=	TRUE	-		
					General enabling condition of fast offset adaptation					
					(					
					Enabling condition of fast offset adaptation due to catalyst conditioning	=	TRUE	-		
					(					
					(					
					Bit signal valid, HEGO sensor 2 bank 1	=	TRUE	-		
					Flag lambda setpoint for sensor equal to 1	=	TRUE	-		
					Rich catalyst purge	=	FALSE	-		
					Bank-independent disabling conditions of fast offset adaptation	=	FALSE	-		
					(					
					Fuel cut-off	=	TRUE	-		
					Mass flow exhaust gas catalyst 1	>	300	g		
					)					
					OR					
					(					
					Fuel cut-off	=	FALSE	-		
					Mass flow exhaust gas catalyst 1	>	180	g		
					)					
					)					
					(					
					(					
					Parallelization done at least once from LSU plausibility diagnosis point of view (sensor 1, bank 1)	=	TRUE	-		
					(					
					(					
					Target sensor voltage for rich during active parallelisation reached once, sensor 1, bank 2	=	TRUE	-		
					Oil gas mass flow by active lambda shifting minus the maximal possible influence of LSU offset part, segment 1, bank 1	>=	1.5	g		
					for time	>=	1	sec		
					)					
					OR					
					(					
					Lean target sensor voltage during active parallelisation reached once, sensor 1, bank 2	=	TRUE	-		
					Oxygen mass flow in catalyst 1, deduct from maximum present LSU Offset in a fault free system	>=	1.2	g		
					for time	>=	1	sec		
					)					
					)					
					OR					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					Dynamic diagnosis error of upstream exhaust gas sensor is not set	=	TRUE	-		
					)					
					OR					
					(					
					(					
					lambda control is set when lambda controller reaches lower limit FRMIN	=	TRUE	-		
					Lambda actual value sensor 1 bank 1	<	1	-		
					Output voltage of HEGO sensor 2 bank 1	<	0.4	-		
					)					
					OR					
					(					
					lambda control is set when lambda controller reaches lower limit FRMAX	=	TRUE	-		
					Lambda actual value sensor 1 bank 1	>	1			
					Output voltage of HEGO sensor 2 bank 1	>	0.6			
					)					
					for time	>=	2	sec		
					Condition for Lambda closed loop control upstream catalyst; bank 1	=	TRUE	-		
					)					
					for time	>=	1	sec		
					)					
					(					
					(					
					Temperature of catalyst 1	>	499.96	deg C		
					Temperature of catalyst 1	<	899.96	deg C		
					)					
					for time	=	0	sec		
					)					
					(					
					(					
					Mass flow exhaust gas catalyst 1	>	3.888888889	g/sec		
					Mass flow exhaust gas catalyst 1	<	69.44444444	g/sec		
					)					
					OR					
					(					
					(					
					Mass flow exhaust gas catalyst 1	>	2.083333333	g/sec		
					Mass flow exhaust gas catalyst 1	<=	3.888888889	g/sec		
					)					
					for time	>=	4	sec		
					)					
					)					
					Condition for upstream cat LSU ready for operation f(lamsons_w)	=	TRUE	-		
					(					
					lambda sensor 1 temperature, bank 1	>=	654.998	deg C		
					)					
					Hydrogen-correction-voltage, HEGO sensor 2 bank 1 with high resolution	<=	0.08057	V		
					(					
					CAT damage during past interval	=	FALSE	-		
					(					
					Ratio total charge to charge in cylinder	<=	1.02002	-		
					Width of dead zone for lambda control deviation	=	0	-		
					)					
					)					
					Mass flow of exhaust gas catalyst 1	>=	200	g		
					Difference betweeen Lambda offset (sensor 1, bank 1) and Lambda offset (delayed by one calculation raster)	<=	0.0079956	-		
					(					
					Counter for no step in offset or increasing offset in a row	>=	2	counts		
					OR					
					Counter for exhaust masses to debounce fault with fast offset adaptation	>=	4	counts		
					)					
					)					
					)					
					)					
					)					
					No pending or confirmed DTCs	=	see sheet inhibit table	-		
					Basic enable conditions met	=	see sheet enable tables	-		
Upstream Exhaust Gas sensor, Bank 1	P2097	Fuel trim fault diagnosis of upstream exhaust gas sensor when the lambda offset is not within the calibrated threshold range- out of range high	(		Debounce condition for fault confirmation by offset adaptation (sensor 1, bank 1)	=	TRUE	-	once per driving cycle	2 Trips

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
			Lambda offset of upstream exhaust gas sensor	>	0.03009	-	(					
			Lambda offset of upstream exhaust gas sensor	<=	0.059998	-	Debouncing of offset fault by slow offset adaptation	=	TRUE	-		
			Difference between lambda offset at the beginning of the driving cycle and lambda offset of the sensor	<	0.002991	-	(					
			(				Slow offset adaptation	=	TRUE	-		
			(				(					
			Maximum offset fault is healed in the current driving cycle	=	TRUE	-	Bit p-part controlability primary control enable	=	TRUE	-		
			Minimum offset fault is healed in the current driving cycle	=	TRUE	-	(					
			)				(					
			OR				Lambda regulator setpoint active	=	TRUE	-		
			(				(					
			Maximum offset fault is set in the previous driving cycle	=	TRUE	-	Width of dead zone for lambda control deviation	>=	0.999969	-		
			OR				OR					
			Minimum offset fault is set in the previous driving cycle	=	TRUE	-	(					
			)				Lambda closed loop control (upstream catalyst), bank 1	=	TRUE	-		
			OR				OR					
			(				(					
			Fuel trim maximum fault is set in the previous driving cycle	=	TRUE	-	Lambda setpoint for sensor after addition of trim control action is not eqaul to 0	=	TRUE	-		
			OR				Difference between upper limit action value lambda control and temporary value before test for enleanment protection	>=	0	-		
			Fuel trim minimum fault is set in the previous driving cycle	=	TRUE	-	Difference between temporary value before test for enleanment protection and lower bound of dfr during enleanmant protection	>=	0	-		
			)				Lambda (measured and setpoint) is below minimal measurable lambda (bank 1)	=	FALSE	-		
			)				TEMIN-limitation active, bench 1	=	FALSE	-		
			)				)					
			OR				)					
			(				)					
			(				Current lowpass value of p-part control upstream primary control enable	>	0	%		
			Fuel trim maximum fault is set in the previous driving cycle	=	TRUE	-	Lambda closed loop control (upstream catalyst), bank 1	=	TRUE	-		
			OR				(					
			Fuel trim minimum fault is set in the previous driving cycle	=	TRUE	-	Lambda control disabled during or after cylinder cut−off	=	FALSE	-		
			)				Lambda swtiched ON after fuel cutoff	=	TRUE	-		
			Lambda offset of upstream exhaust gas sensor	>	0.059998	-	(					
			)				Fuel cut off is active	=	FALSE	-		
							(					
							Time running down after fuel cut−off for enabling lambda control	>	8	sec		
							OR					
							(					
							Absolute value of control difference in lambda, bank 1	<=	0.1001	-		
							Difference of counter time and plant time constant a-(b+c) where a is Time running down after fuel cut−off for enabling lambda control b is plant time constant for continuous air/fuel control c is plant parameter for dead time for lambda control	>	0	sec		
							)					
							)					
							)					
							LSU sensor upstream to catalyst ready for operation	=	TRUE	-		
							(					
							lambda sensor 1 temperature, bank 1	>=	654.998	deg C		
							)					
							Lambda control disabled by a fault	=	FALSE	-		
							lambda control is active since warmup is finished	=	TRUE	-		
							Relative air charge	>	0	%		
							for time	>=	2	sec		
							)					
							HEM condition to block lambda closed loop control upstream catalyst	=	FALSE	-		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					Lamda control active due to GDI mode change	=	TRUE	-		
					(					
					GDI mode homogeneous	=	TRUE	-		
					for time	>=	0.8	sec		
					)					
					)					
					(					
					Lambda control enabled for Cold operation sensor 2 bank 1	=	TRUE	-		
					OR					
					HEGO sensor 2 bank 1, signal valid	=	TRUE	-		
					(					
					Status of heating enable conditions for the sensor operating readiness	=	TRUE	-		
					(					
					Protective heating is finished	=	TRUE	-		
					for time	>=	15	sec		
					OR					
					Internal resistance OK for operating readiness	=	TRUE	-		
					(					
					Unfiltered internal resistance of HEGO sensor	<=	2000	Ohm		
					Protective heating is finished	=	TRUE	-		
					Counter for valid internal resistance measurements	>=	3	counts		
					)					
					)					
					Status of sensor signal enable conditions for the sensor operating readiness	=	TRUE	-		
					(					
					Internal resistance OK for operating readiness	=	TRUE	-		
					OR					
					(					
					(					
					Output voltage of HEGO Sensor	>=	0.551758	V		
					Output voltage of HEGO Sensor	<=	1.201172	V		
					)					
					OR					
					Output voltage of HEGO Sensor	<=	0.322266	V		
					)					
					OR					
					Sensor voltage stuck in countervoltage band	=	TRUE	-		
					(					
					(					
					(					
					Output voltage of HEGO Sensor	<	0.551758	V		
					Output voltage of HEGO Sensor	>	0.322266	V		
					)					
					(					
					Sensor open circuit fault existed in previous trip	=	TRUE	-		
					OR					
					Sensor open circuit fault currently not detected	=	TRUE	-		
					)					
					Electrical diagnostics enabled	=	TRUE	-		
					)					
					for time	>=	20	sec		
					)					
					)					
					for time	>=	0.2	sec		
					)					
					)					
					)					
					Bit p-part system balanced primary control enable	=	TRUE	-		
					(					
					(					
					Lambda setpoint for sensor is set equal to 1	=	TRUE	-		
					OR					
					Lambda setpoint for sensor is set equal to 1	=	FALSE	-		
					for time	>=	10	sec		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					)					
					Rich catalyst purge	=	FALSE	-		
					Mass flow of exhaust gas, sensor 2	>	25	g		
					)					
					P-part active from temperature and dynamic diagnosis	=	TRUE	-		
					(					
					Temperature of catalyst 1	>=	349.96	deg C		
					Temperature of catalyst 1	<	899.96	deg C		
					)					
					)					
					Bit I-part global primary control enable	=	TRUE	-		
					(					
					(					
					Current lowpass value of I-part load primary control enable	>	-1.5938	%		
					Current lowpass value of I-part load primary control enable	<=	1.5938	%		
					)					
					Diagnosis of canister purge system is active	=	FALSE	-		
					Ratio total charge to charge in cylinder	<=	1	-		
					Width of dead zone for lambda control deviation	=	0	-		
					Maximum value among the engine coolant temperature and model-based substitute value for engine temperature signal in case of error	>	34.96	deg C		
					(					
					Bit I-part global load and engine speed control enable	=	TRUE	-		
					(					
					Engine speed with low resolution	<	2600	rpm		
					Engine speed with low resolution	>=	1000	rpm		
					(					
					Half engine mode active	=	TRUE	-		
					(					
					Relative air mass during half engine mode (see Look-Up table #P2096-2)	<	30 to 90	%		
					Relative air mass during half engine mode (see Look-Up table #P2096-3)	>=	15 to 20.3	%		
					)					
					OR					
					Half engine mode active	=	FALSE	-		
					(					
					Relative air mass (see Look-Up table #P2096-4)	<	30 to 90	%		
					Relative air mass (see Look-Up table #P2096-5)	>=	15 to 20.3	%		
					)					
					)					
					)					
					)					
					)					
					(					
					Bit i-part system primary control enable	=	TRUE	-		
					(					
					Current integrator value of P-part balanced primary control enable	>	150	g		
					(					
					(					
					Dew point end of sensor 2 Bank1 is reached	=	TRUE	-		
					End of start is reached	=	TRUE	-		
					Exhaust gas mass flow sensor 2 Bank 1	>	179.91	g		
					)					
					OR					
					(					
					(					
					Dew point end of sensor 2 reached	=	FALSE	-		
					OR					
					End of start is reached	=	FALSE	-		
					)					
					Exhaust gas mass flow sensor 2	>	199.82	g		
					)					
					)					
					)					
					Bit i-part system temperature primary control enable	=	TRUE	-		
					(					
					Temperature of catalyst 1	>	349.96	deg C		
					Temperature of catalyst 1	<	869.96	deg C		
					)					
					)					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					)					
					Cumulated time in which slow offset adaptation was active	>=	150	sec		
					)					
					Debounce condition for fault confirmation by fast offset adaptation (sensor 1, bank 1)	=	TRUE	-		
					General enabling condition of fast offset adaptation					
					(					
					Enabling condition of fast offset adaptation due to catalyst conditioning	=	TRUE	-		
					(					
					(					
					Bit signal valid, HEGO sensor 2 bank 1	=	TRUE	-		
					Flag lambda setpoint for sensor equal to 1	=	TRUE	-		
					Rich catalyst purge	=	FALSE	-		
					Bank-independent disabling conditions of fast offset adaptation	=	FALSE	-		
					(					
					Fuel cut-off	=	TRUE	-		
					Mass flow exhaust gas catalyst 1	>	300	g		
					)					
					OR					
					(					
					Fuel cut-off	=	FALSE	-		
					Mass flow exhaust gas catalyst 1	>	180	g		
					)					
					)					
					(					
					(					
					Parallelization done at least once from LSU plausibility diagnosis point of view (sensor 1, bank 1)	=	TRUE	-		
					(					
					(					
					Target sensor voltage for rich during active parallelisation reached once, sensor 1, bank 2	=	TRUE	-		
					Oil gas mass flow by active lambda shifting minus the maximal possible influence of LSU offset part, segment 1, bank 1	>=	1.5	g		
					for time	>=	1	sec		
					)					
					OR					
					(					
					Lean target sensor voltage during active parallelisation reached once, sensor 1, bank 2	=	TRUE	-		
					Oxygen mass flow in catalyst 1, deduct from maximum present LSU Offset in a fault free system	>=	1.2	g		
					for time	>=	1	sec		
					)					
					)					
					OR					
					Dynamic diagnosis error of upstream exhaust gas sensor is not set	=	TRUE	-		
					)					
					OR					
					(					
					(					
					lambda control is set when lambda controller reaches lower limit FRMIN	=	TRUE	-		
					Lambda actual value sensor 1 bank 1	<	1	-		
					Output voltage of HEGO sensor 2 bank 1	<	0.4	-		
					)					
					OR					
					(					
					lambda control is set when lambda controller reaches lower limit FRMAX	=	TRUE	-		
					Lambda actual value sensor 1 bank 1	>	1			
					Output voltage of HEGO sensor 2 bank 1	>	0.6			
					)					
					for time	>=	2	sec		
					Condition for Lambda closed loop control upstream catalyst; bank 1	=	TRUE	-		
					)					
					for time	>=	1	sec		
					)					
					(					
					(					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Temperature of catalyst 1	> 499.96 deg C		
					Temperature of catalyst 1	< 899.96 deg C		
					)			
					for time	= 0 sec		
					)			
					(			
					(			
					Mass flow exhaust gas catalyst 1	> 3.888888889 g/sec		
					Mass flow exhaust gas catalyst 1	< 69.44444444 g/sec		
					)			
					OR			
					(			
					(			
					Mass flow exhaust gas catalyst 1	> 2.083333333 g/sec		
					Mass flow exhaust gas catalyst 1	<= 3.888888889 g/sec		
					)			
					for time	>= 4 sec		
					)			
					)			
					Condition for upstream cat LSU ready for operation f(lamsons_w)	= TRUE -		
					(			
					lambda sensor 1 temperature, bank 1	>= 654.998 deg C		
					)			
					Hydrogen-correction-voltage, HEGO sensor 2 bank 1 with high resolution	<= 0.08057 V		
					(			
					CAT damage during past interval	= FALSE -		
					(			
					Ratio total charge to charge in cylinder	<= 1.02002 -		
					Width of dead zone for lambda control deviation	= 0 -		
					)			
					)			
					Mass flow of exhaust gas catalyst 1	>= 200 g		
					Difference betweeen Lambda offset (sensor 1, bank 1) and Lambda offset (delayed by one calculation raster)	<= 0.0079956 -		
					(			
					Counter for no step in offset or increasing offset in a row	>= 2 counts		
					OR			
					Counter for exhaust masses to debounce fault with fast offset adaptation	>= 4 counts		
					)			
					)			
					)			
					)			
					)			
					No pending or confirmed DTCs	= see sheet inhibit table -		
					Basic enable conditions met	= see sheet enable tables -		
Upstream Exhaust Gas sensor, Bank 2	P2098	Fuel trim fault diagnosis of upstream exhaust gas sensor when the lambda offset is not within the calibrated threshold range - out of range low	(		Debounce condition for fault confirmation by offset adaptation (sensor 1, bank 2)	= TRUE -	once per driving cycle	2 Trips
			Lambda offset of upstream exhaust gas sensor, bank 2	< -0.03009 -	(			
			Lambda offset of upstream exhaust gas sensor, bank 2	>= -0.059998 -	Debouncing of offset fault by slow offset adaptation, bank 2	= TRUE -		
			Difference between lambda offset of the sensor, bank 2 and lambda offset at the beginning of the driving cycle, bank 2	< 0.002991 -	(			
			(		Slow offset adaptation, bank 2	= TRUE -		
			(		(			
			Maximum offset fault of the bank 2 sensor is healed in the current driving cycle	= TRUE -	Bit p-part controlability primary control enable 2	= TRUE -		
			Minimum offset fault of the bank 2 sensor is healed in the current driving cycle	= TRUE -	(			
			)		(			
			OR		Lambda regulator setpoint active, bank 2	= TRUE -		
			(		(			
			Maximum offset fault of the bank 2 sensor is set in the previous driving cycle	= TRUE -	Width of dead zone for lambda control deviation	>= 0.999969 -		
			OR		OR			
			Minimum offset fault of the bank 2 sensor is set in the previous driving cycle	= TRUE -	(			
			)		Lambda closed loop control (upstream catalyst), bank 2	= TRUE -		
			OR		OR			
			(		(			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
			Fuel trim maximum fault of the bank 2 sensor is set in the previous driving cycle	=	TRUE	-	Lambda setpoint for sensor after addition of trim control action, bank 2 is not eqaul to 0	=	TRUE	-		
			OR				Difference between upper limit action value lambda control and temporary value before test for enleanment protection, bank 2	>=	0	-		
			Fuel trim minimum fault of the bank 2 sensor is set in the previous driving cycle	=	TRUE	-	Difference between temporary value before test for enleanment protection, bank 2 and lower bound of dfr during enleanmant protection	>=	0	-		
			)				Lambda (measured and setpoint) is below minimal measurable lambda (bank 2)	=	FALSE	-		
			)				TEMIN-limitation active, bench 2	=	FALSE	-		
			)				)					
			OR				)					
			(				)					
			(				Current lowpass value of p-part control upstream primary control enable 2	>	0	%		
			Fuel trim maximum fault of the bank 2 sensor is set in the previous driving cycle	=	TRUE	-	Lambda closed loop control (upstream catalyst), bank 2	=	TRUE	-		
			OR				(					
			Fuel trim minimum fault of the bank 2 sensor is set in the previous driving cycle	=	TRUE	-	Lambda control disabled during or after cylinder cut−off, bank 2	=	FALSE	-		
			)				Lambda swtiched ON after fuel cutoff, bank 2	=	TRUE	-		
			Lambda offset of upstream exhaust gas sensor, bank 2	>	0.059998	-	(					
			)				Fuel cut off is active, bank 2	=	FALSE	-		
							(					
							Time running down after fuel cut−off for enabling lambda control	>	8	sec		
							OR					
							(					
							Absolute value of control difference in lambda, bank 2	<=	0.1001	-		
							Difference of counter time and plant time constant a-(b+c) where a is Time running down after fuel cut−off for enabling lambda control b is plant time constant for continuous air/fuel control, bank 2 c is plant parameter for dead time for lambda control, bank 2	>	0	sec		
							)					
							)					
							)					
							LSU sensor upstream to catalyst ready for operation, bank 2	=	TRUE	-		
							(					
							lambda sensor 1 temperature, bank 2	>=	654.998	deg C		
							)					
							Lambda control disabled by a fault, bank 2	=	FALSE	-		
							lambda control is active since warmup is finished	=	TRUE	-		
							Relative air charge	>	0	%		
							for time	>=	2	sec		
							)					
							HEM condition to block lambda closed loop control upstream catalyst, bank 2	=	FALSE	-		
							Lamda control active due to GDI mode change	=	TRUE	-		
							(					
							GDI mode homogeneous	=	TRUE	-		
							for time	>=	0.8	sec		
							)					
							)					
							(					
							Lambda control enabled for Cold operation sensor 2 bank 2	=	TRUE	-		
							OR					
							HEGO sensor 2 bank 2, signal valid	=	TRUE	-		
							(					
							Status of heating enable conditions for the sensor operating readiness	=	TRUE	-		
							(					
							Protective heating is finished, bank 2	=	TRUE	-		
							for time	>=	15	sec		
							OR					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 TEST GROUP: KGMXV04.2088 EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					Internal resistance OK for operating readiness, bank 2	=	TRUE	-		
					(					
					Unfiltered internal resistance of HEGO sensor, bank 2	<=	2000	Ohm		
					Protective heating is finished, bank 2	=	TRUE	-		
					Counter for valid internal resistance measurements, bank 2	>=	3	counts		
					)					
					)					
					Status of sensor signal enable conditions for the sensor operating readiness, bank 2	=	TRUE	-		
					(					
					Internal resistance OK for operating readiness	=	TRUE	-		
					OR					
					(					
					(					
					Output voltage of HEGO Sensor, bank 2	>=	0.551758	V		
					Output voltae of HEGO Sensor, bank 2	<=	1.201172	V		
					)					
					OR					
					Output voltae of HEGO Sensor, bank 2	<=	0.322266	V		
					)					
					OR					
					Sensor voltage stuck in countervoltage band	=	TRUE	-		
					(					
					(					
					(					
					Output voltage of HEGO Sensor, bank 2	<	0.551758	V		
					Output voltage of HEGO Sensor, bank 2	>	0.322266	V		
					)					
					(					
					Sensor open circuit fault existed in previous trip	=	TRUE	-		
					OR					
					Sensor open circuit fault currently not detected	=	TRUE	-		
					)					
					Electrical diagnostics enabled, bank 2	=	TRUE	-		
					)					
					for time	>=	20	sec		
					)					
					)					
					for time	>=	0.2	sec		
					)					
					)					
					)					
					Bit p-part system balanced primary control enable 2	=	TRUE	-		
					(					
					(					
					Lambda setpoint for sensor is set equal to 1, bank 2	=	TRUE	-		
					OR					
					Lambda setpoint for sensor is set equal to 1, bank 2	=	FALSE	-		
					for time	>=	10	sec		
					)					
					Rich catalyst purge, bank 2	=	FALSE	-		
					Mass flow of exhaust gas, sensor 1, bank 2	>	25	g		
					)					
					P-part active from temperature and dynamic diagnosis, bank 2	=	TRUE	-		
					(					
					Temperature of catalyst 1, bank 2	>=	349.96	deg C		
					Temperature of catalyst 1, bank 2	<	899.96	deg C		
					)					
					)					
					Bit I-part global primary control enable	=	TRUE	-		
					(					
					(					
					Current lowpass value of I-part load primary control enable	>	-1.5938	%		
					Current lowpass value of I-part load primary control enable	<=	1.5938	%		
					)					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					Diagnosis of canister purge system is active	=	FALSE	-		
					Ratio total charge to charge in cylinder	<=	1	-		
					Width of dead zone for lambda control deviation	=	0	-		
					Maximum value among the engine coolant temperature and model-based substitute value for engine temperature signal in case of error	>	34.96	deg C		
					(					
					Bit I-part global load and engine speed control enable	=	TRUE	-		
					(					
					Engine speed with low resolution	<	2600	rpm		
					Engine speed with low resolution	>=	1000	rpm		
					(					
					Half engine mode active	=	TRUE	-		
					(					
					Relative air mass during half engine mode (see Look-Up table #P2096-2)	<	30 to 90	%		
					Relative air mass during half engine mode (see Look-Up table #P2096-3)	>=	15 to 20.3	%		
					)					
					OR					
					Half engine mode active	=	FALSE	-		
					(					
					Relative air mass (see Look-Up table #P2096-4)	<	30 to 90	%		
					Relative air mass (see Look-Up table #P2096-5)	>=	15 to 20.3	%		
					)					
					)					
					)					
					)					
					)					
					(					
					Bit i-part system primary control enable, bank 2	=	TRUE	-		
					(					
					Current integrator value of P-part balanced primary control enable, bank 2	>	150	g		
					(					
					(					
					Dew point end of sensor 1 Bank 2 is reached	=	TRUE	-		
					End of start is reached	=	TRUE	-		
					Exhaust gas mass flow sensor 1 Bank 2	>	179.91	g		
					)					
					OR					
					(					
					(					
					Dew point end of sensor 2 reached, bank 2	=	FALSE	-		
					OR					
					End of start is reached	=	FALSE	-		
					)					
					Exhaust gas mass flow sensor 1 Bank 2	>	199.82	g		
					)					
					)					
					)					
					Bit i-part system temperature primary control enable, bank 2	=	TRUE	-		
					(					
					Temperature of catalyst 1, bank 2	>	349.96	deg C		
					Temperature of catalyst 1, bank 2	<	869.96	deg C		
					)					
					)					
					)					
					Cumulated time in which slow offset adaptation was active, bank 2	>=	150	sec		
					)					
					Debounce condition for fault confirmation by fast offset adaptation (sensor 1, bank 2)	=	TRUE	-		
					General enabling condition of fast offset adaptation, bank 2					
					(					
					Enabling condition of fast offset adaptation due to catalyst conditioning, bank 2	=	TRUE	-		
					(					
					(					
					Bit signal valid, HEGO sensor 2 bank 2	=	TRUE	-		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					Flag lambda setpoint for sensor equal to 1, bank 2	=	TRUE	-		
					and					
					Rich catalyst purge, bank 2	=	FALSE	-		
					Bank-independent disabling conditions of fast offset adaptation	=	FALSE	-		
					(					
					Fuel cut-off, bank	=	TRUE	-		
					Mass flow exhaust gas catalyst 1, bank 2	>	300	g		
					)					
					OR					
					(					
					Fuel cut-off	=	FALSE	-		
					Mass flow exhaust gas catalyst 1, bank 2	>	180	g		
					)					
					)					
					(					
					(					
					Parallelization done at least once from LSU plausibility diagnosis point of view (sensor 1, bank 2)	=	TRUE	-		
					(					
					(					
					Target sensor voltage for rich during active parallelisation reached once, sensor 1, bank 2	=	TRUE	-		
					Oil gas mass flow by active lambda shifting minus the maximal possible influence of LSU offset part, segment 1, bank 2	>=	1500			
					for time	>=	1	sec		
					)					
					OR					
					(					
					Lean target sensor voltage during active parallelisation reached once, sensor 1, bank 2	=	TRUE	-		
					Oxygen mass flow in catalyst 1, deduct from maximum present LSU Offset in a fault free system, bank 2	>=	1.2	g		
					for time	>=	1	sec		
					)					
					)					
					OR					
					Dynamic diagnosis error of upstream exhaust gas sensor is not set	=	FALSE	-		
					)					
					OR					
					(					
					(					
					lambda control is set when lambda controller reaches lower limit FRMIN, bank 2	=	TRUE	-		
					Lambda actual value sensor 1 bank 2	<	1	-		
					Output voltage of HEGO sensor 2 bank 2	<	0.4	-		
					)					
					OR					
					(					
					lambda control is set when lambda controller reaches lower limit FRMAX, bank 2	=	TRUE	-		
					Lambda actual value sensor 1 bank 2	>	1			
					Output voltage of HEGO sensor 2 bank 2	>	0.6			
					)					
					for time	>=	2	sec		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Condition for Lambda closed loop control upstream catalyst; bank 2	= TRUE -		
					)			
					for time	>= 1 sec		
					)			
					(			
					(			
					Temperature of catalyst 1, bank 2	> 499.96 deg C		
					Temperature of catalyst 1, bank 2	< 899.96 deg C		
					)			
					for time	= 0 sec		
					)			
					(			
					(			
					Mass flow exhaust gas catalyst 1, bank 2	> 3.888888889 g/sec		
					Mass flow exhaust gas catalyst 1, bank 2	< 69.44444444 g/sec		
					)			
					OR			
					(			
					(			
					Mass flow exhaust gas catalyst 1, bank 2	> 2.083333333 g/sec		
					Mass flow exhaust gas catalyst 1, bank 2	<= 3.888888889 g/sec		
					)			
					for time	>= 4 sec		
					)			
					)			
					Condition for upstream cat LSU ready for operation f(lamsons_w), bank 2	= TRUE -		
					(			
					lambda sensor 1 temperature, bank 2	>= 654.998 deg C		
					)			
					Hydrogen-correction-voltage, HEGO sensor 2 bank 2 with high resolution	<= 0.08057 V		
					(			
					CAT damage during past interval	= FALSE -		
					(			
					Ratio total charge to charge in cylinder	<= 1.02002 -		
					Width of dead zone for lambda control deviation	= 0 -		
					)			
					)			
					Mass flow of exhaust gas catalyst 1, bank 2	>= 200 g		
					Difference betweeen Lambda offset (sensor 1, bank 2) and Lambda offset (delayed by one calculation raster)	<= 0.0079956 -		
					(			
					Counter for no step in offset or increasing offset in a row, bank 2	>= 2 counts		
					OR			
					Counter for exhaust masses to debounce fault with fast offset adaptation, bank 2	>= 4 counts		
					)			
					)			
					)			
					)			
					)			
					No pending or confirmed DTCs	= see sheet inhibit table -		
					Basic enable conditions met	= see sheet enable tables -		
Upstream Exhaust Gas sensor, Bank 2	P2099	Fuel trim fault diagnosis of upstream exhaust gas sensor when the lambda offset is not within the calibrated threshold range - out of range high	(		Debounce condition for fault confirmation by offset adaptation (sensor 1, bank 2)	= TRUE -	once per driving cycle	2 Trips
			Lambda offset of upstream exhaust gas sensor, bank 2	> 0.03009 -	(			
			Lambda offset of upstream exhaust gas sensor, bank 2	<= 0.059998 -	Debouncing of offset fault by slow offset adaptation, bank 2	= TRUE -		
			Difference between lambda offset at the beginning of the driving cycle, bank 2 and lambda offset of the sensor, bank 2	< 0.002991 -	(			
			(		Slow offset adaptation, bank 2	= TRUE -		
			(		(			
			Maximum offset fault of the bank 2 sensor is healed in the current driving cycle	= TRUE -	Bit p-part controlability primary control enable 2	= TRUE -		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
			Minimum offset fault of the bank 2 sensor is healed in the current driving cycle	=	TRUE	-	(					
			)				(					
			OR				Lambda regulator setpoint active, bank 2	=	TRUE	-		
			(				(					
			Maximum offset fault of the bank 2 sensor is set in the previous driving cycle	=	TRUE	-	Width of dead zone for lambda control deviation	>=	0.999969	-		
			OR				OR					
			Minimum offset fault of the bank 2 sensor is set in the previous driving cycle	=	TRUE	-	(					
			)				Lambda closed loop control (upstream catalyst), bank 2	=	TRUE	-		
			OR				OR					
			(				(					
			Fuel trim maximum fault of the bank 2 sensor is set in the previous driving cycle	=	TRUE	-	Lambda setpoint for sensor after addition of trim control action, bank 2 is not eqaul to 0	=	TRUE	-		
			OR				Difference between upper limit action value lambda control and temporary value before test for enleanment protection, bank 2	>=	0	-		
			Fuel trim minimum fault of the bank 2 sensor is set in the previous driving cycle	=	TRUE	-	Difference between temporary value before test for enleanment protection, bank 2 and lower bound of dfr during enleanmant protection	>=	0	-		
			)				Lambda (measured and setpoint) is below minimal measurable lambda (bank 2)	=	FALSE	-		
			)				and					
			)				TEMIN-limitation active, bench 2	=	FALSE	-		
			OR				)					
			(				)					
			(				)					
			Fuel trim maximum fault of the bank 2 sensor is set in the previous driving cycle	=	TRUE	-	Current lowpass value of p-part control upstream primary control enable 2	>	0	%		
			OR				Lambda closed loop control (upstream catalyst), bank 2	=	TRUE	-		
			Fuel trim minimum fault of the bank 2 sensor is set in the previous driving cycle	=	TRUE	-	(					
			)				Lambda control disabled during or after cylinder cut−off, bank 2	=	FALSE	-		
			Lambda offset of upstream exhaust gas sensor, bank 2	>	0.059998	-	Lambda swtiched ON after fuel cutoff, bank 2	=	TRUE	-		
			)				(					
							Fuel cut off is active, bank 2	=	FALSE	-		
							(					
							Time running down after fuel cut−off for enabling lambda control	>	8	sec		
							OR					
							(					
							Absolute value of control difference in lambda, bank 2	<=	0.1001	-		
							Difference of counter time and plant time constant a-(b+c) where a is Time running down after fuel cut−off for enabling lambda control b is plant time constant for continuous air/fuel control, bank 2 c is plant parameter for dead time for lambda control, bank 2	>	0	sec		
							)					
							)					
							)					
							LSU sensor upstream to catalyst ready for operation, bank 2	=	TRUE	-		
							(					
							lambda sensor 1 temperature, bank 1	>=	654.998	deg C		
							)					
							Lambda control disabled by a fault, bank 2	=	FALSE	-		
							lambda control is active since warmup is finished	=	TRUE	-		
							Relative air charge	>	0	%		
							for time	>=	2	sec		
							)					
							HEM condition to block lambda closed loop control upstream catalyst, bank 2	=	FALSE	-		
							Lamda control active due to GDI mode change	=	TRUE	-		
							(					
							GDI mode homogeneous	=	TRUE	-		
							for time	>=	0.8	sec		
							)					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					)					
					(					
					Lambda control enabled for Cold operation sensor 2 bank 2	=	TRUE	-		
					OR					
					HEGO sensor 2 bank 2, signal valid	=	TRUE	-		
					(					
					Status of heating enable conditions for the sensor operating readiness	=	TRUE	-		
					(					
					Protective heating is finished, bank 2	=	TRUE	-		
					for time	>=	15	sec		
					OR					
					Internal resistance OK for operating readiness, bank 2	=	TRUE	-		
					(					
					Unfiltered internal resistance of HEGO sensor, bank 2	<=	2000	Ohm		
					Protective heating is finished, bank 2	=	TRUE	-		
					Counter for valid internal resistance measurements, bank 2	>=	3	counts		
					)					
					)					
					Status of sensor signal enable conditions for the sensor operating readiness, bank 2	=	TRUE	-		
					(					
					Internal resistance OK for operating readiness	=	TRUE	-		
					OR					
					(					
					(					
					Output voltage of HEGO Sensor, bank 2	>=	0.551758	V		
					Output voltae of HEGO Sensor, bank 2	<=	1.201172	V		
					)					
					OR					
					Output voltae of HEGO Sensor, bank 2	<=	0.322266	V		
					)					
					OR					
					Sensor voltage stuck in countervoltage band	=	TRUE	-		
					(					
					(					
					(					
					Output voltage of HEGO Sensor, bank 2	<	0.551758	V		
					Output voltage of HEGO Sensor, bank 2	>	0.322266	V		
					)					
					(					
					Sensor open circuit fault existed in previous trip	=	TRUE	-		
					OR					
					Sensor open circuit fault currently not detected	=	TRUE	-		
					)					
					Electrical diagnostics enabled, bank 2	=	TRUE	-		
					)					
					for time	>=	20	sec		
					)					
					)					
					for time	>=	0.2	sec		
					)					
					)					
					)					
					Bit p-part system balanced primary control enable 2	=	TRUE	-		
					(					
					(					
					Lambda setpoint for sensor is set equal to 1, bank 2	=	TRUE	-		
					OR					
					Lambda setpoint for sensor is set equal to 1, bank 2	=	FALSE	-		
					for time	>=	10	sec		
					)					
					Rich catalyst purge, bank 2	=	FALSE	-		
					Mass flow of exhaust gas, sensor 1, bank 2	>	25	g		
					)					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					P-part active from temperature and dynamic diagnosis, bank 2	=	TRUE	-		
					(					
					Temperature of catalyst 1, bank 2	>=	349.96	deg C		
					Temperature of catalyst 1, bank 2	<	899.96	deg C		
					)					
					)					
					Bit I-part global primary control enable	=	TRUE	-		
					(					
					(					
					Current lowpass value of I-part load primary control enable	>	-1.5938	%		
					Current lowpass value of I-part load primary control enable	<=	1.5938	%		
					)					
					Diagnosis of canister purge system is active	=	FALSE	-		
					Ratio total charge to charge in cylinder	<=	1	-		
					Width of dead zone for lambda control deviation	=	0	-		
					Maximum value among the engine coolant temperature and model-based substitute value for engine temperature signal in case of error	>	34.96	deg C		
					(					
					Bit I-part global load and engine speed control enable	=	TRUE	-		
					(					
					Engine speed with low resolution	<	2600	rpm		
					Engine speed with low resolution	>=	1000	rpm		
					(					
					Half engine mode active	=	TRUE	-		
					(					
					Relative air mass during half engine mode (see Look-Up table #P2096-2)	<	30 to 90	%		
					Relative air mass during half engine mode (see Look-Up table #P2096-3)	>=	15 to 20.3	%		
					)					
					OR					
					Half engine mode active	=	FALSE	-		
					(					
					Relative air mass (see Look-Up table #P2096-4)	<	30 to 90	%		
					Relative air mass (see Look-Up table #P2096-5)	>=	15 to 20.3	%		
					)					
					)					
					)					
					)					
					)					
					(					
					Bit i-part system primary control enable, bank 2	=	TRUE	-		
					(					
					Current integrator value of P-part balanced primary control enable, bank 2	>	150	g		
					(					
					(					
					Dew point end of sensor 1 Bank 2 is reached	=	TRUE	-		
					End of start is reached	=	TRUE	-		
					Exhaust gas mass flow sensor 1 Bank 2	>	179.91	g		
					)					
					OR					
					(					
					(					
					Dew point end of sensor 2 reached, bank 2	=	FALSE	-		
					OR					
					End of start is reached	=	FALSE	-		
					)					
					Exhaust gas mass flow sensor 1 Bank 2	>	199.82	g		
					)					
					)					
					)					
					Bit i-part system temperature primary control enable, bank 2	=	TRUE	-		
					(					
					Temperature of catalyst 1, bank 2	>	349.96	deg C		
					Temperature of catalyst 1, bank 2	<	869.96	deg C		
					)					
					)					
					)					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					Cumulated time in which slow offset adaptation was active, bank 2	>=	150	sec		
					)					
					Debounce condition for fault confirmation by fast offset adaptation (sensor 1, bank 2)	=	TRUE	-		
					General enabling condition of fast offset adaptation, bank 2					
					(					
					Enabling condition of fast offset adaptation due to catalyst conditioning, bank 2	=	TRUE	-		
					(					
					(					
					Bit signal valid, HEGO sensor 2 bank 2	=	TRUE	-		
					Flag lambda setpoint for sensor equal to 1, bank 2	=	TRUE	-		
					Rich catalyst purge, bank 2	=	FALSE	-		
					Bank-independent disabling conditions of fast offset adaptation	=	FALSE	-		
					(					
					Fuel cut-off, bank	=	TRUE	-		
					Mass flow exhaust gas catalyst 1, bank 2	>	300	g		
					)					
					OR					
					(					
					Fuel cut-off	=	FALSE	-		
					Mass flow exhaust gas catalyst 1, bank 2	>	180	g		
					)					
					)					
					(					
					(					
					Parallelization done at least once from LSU plausibility diagnosis point of view (sensor 1, bank 2)	=	TRUE	-		
					(					
					(					
					Target sensor voltage for rich during active parallelisation reached once, sensor 1, bank 2	=	TRUE	-		
					Oil gas mass flow by active lambda shifting minus the maximal possible influence of LSU offset part, segment 1, bank 2	>=	1.5	g		
					for time	>=	1	sec		
					)					
					OR					
					(					
					Lean target sensor voltage during active parallelisation reached once, sensor 1, bank 2	=	TRUE	-		
					Oxygen mass flow in catalyst 1, deduct from maximum present LSU Offset in a fault free system, bank 2	>=	1.2	g		
					for time	>=	1	sec		
					)					
					)					
					OR					
					Dynamic diagnosis error of upstream exhaust gas sensor is not set	=	FALSE	-		
					)					
					OR					
					(					
					(					
					lambda control is set when lambda controller reaches lower limit FRMIN, bank 2	=	TRUE	-		
					Lambda actual value sensor 1 bank 2	<	1	-		
					Output voltage of HEGO sensor 2 bank 2	<	0.4	-		
					)					
					OR					
					(					
					lambda control is set when lambda controller reaches lower limit FRMAX, bank 2	=	TRUE	-		
					Lambda actual value sensor 1 bank 2	>	1			
					Output voltage of HEGO sensor 2 bank 2	>	0.6			
					)					
					for time	>=	2	sec		
					Condition for Lambda closed loop control upstream catalyst; bank 2	=	TRUE	-		
					)					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					for time	>= 1 sec		
					)			
					(			
					(			
					Temperature of catalyst 1, bank 2	> 499.96 deg C		
					Temperature of catalyst 1, bank 2	< 899.96 deg C		
					)			
					for time	= 0 sec		
					)			
					(			
					(			
					Mass flow exhaust gas catalyst 1, bank 2	> 3.888888889 g/sec		
					Mass flow exhaust gas catalyst 1, bank 2	< 69.44444444 g/sec		
					)			
					OR			
					(			
					(			
					Mass flow exhaust gas catalyst 1, bank 2	> 2.083333333 g/sec		
					Mass flow exhaust gas catalyst 1, bank 2	<= 3.888888889 g/sec		
					)			
					for time	>= 4 sec		
					)			
					)			
					Condition for upstream cat LSU ready for operation f(lamsons_w), bank 2	= TRUE -		
					(			
					lambda sensor 1 temperature, bank 2	>= 654.998 deg C		
					)			
					Hydrogen-correction-voltage, HEGO sensor 2 bank 2 with high resolution	<= 0.08057 V		
					(			
					CAT damage during past interval	= FALSE -		
					(			
					Ratio total charge to charge in cylinder	<= 1.02002 -		
					Width of dead zone for lambda control deviation	= 0 -		
					)			
					)			
					Mass flow of exhaust gas catalyst 1, bank 2	>= 200 g		
					Difference betweeen Lambda offset (sensor 1, bank 2) and Lambda offset (delayed by one calculation raster)	<= 0.0079956 -		
					(			
					Counter for no step in offset or increasing offset in a row, bank 2	>= 2 counts		
					OR			
					Counter for exhaust masses to debounce fault with fast offset adaptation, bank 2	>= 4 counts		
					)			
					)			
					)			
					)			
					)			
					No pending or confirmed DTCs	= see sheet inhibit table -		
					Basic enable conditions met	= see sheet enable tables -		
Air Fuel Imbalance Monitor	P219C	Cylinder Specific air-fuel imbalance detection too lean	Cylinder individual air-fuel ratio considering deviation from bank average air-fuel ratio	> 1.179993 -	Enable conditions for lambda imbalance diagnosis	= TRUE -	once per driving cycle	2 Trips
					(			
					(			
	P219D				Basic enable conditions	= TRUE -		
					(			
	P219E				Engine roughness signal is valid, which is the following conditions:	= TRUE -		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					(			
	P219F				Status of trigger wheel adaptation for segment time correction for cylinder individual lambda control function	= TRUE -		
					and			
	P21A0				Condition segment duration plausible	= TRUE -		
					and			
	P21A1				Active rough road detection	= FALSE -		
					and			
	P21A2				Clutch operator is active	= FALSE -		
					and			
	P21A3				Engine synchronisation is completed and engine is in normal operation mode	= TRUE -		
					)			
					and			
					Engine operation point is within calibrated range (low or high operating range), as decribed below:	= TRUE -		
					(			
					Relative air charge (with AT)	< A-B %		
					where			
					A is Upper threshold for the relative air charge in order to determine the operating range LOW depending on the engine speed nmot for automatic transmission	= 60 %		
					B is the upper thresholds of the relative air charge for determining the operating ranges LOW and HIGH for automatic transmission	= 0.8 %		
					and			
					Relative air charge (with AT)	> 24.8 %		
					and			
					Engine speed (with AT)	< A-B rpm		
					where			
					A is Upper engine speed threshold for determining for operating range LOW, AT (See Look-Up-Table #1)	= 2160 rpm		
					B is the hystersis for upper thresholds of the relative air charge for determining the operating ranges LOW and HIGH for automatic transmission	= 40 rpm		
					and			
					Engine speed (with AT)	> 1280 rpm		
					)			
					OR			
					(			
					High operation range is released	= TRUE -		
					and			
					(			
					Relative air charge (with AT)	< A-B %		
					where			
					A is Upper threshold for the relative air charge in order to determine the operating range LOW depending on the engine speed nmot for automatic transmission	= 0 %		
					B is the upper thresholds of the relative air charge for determining the operating ranges LOW and HIGH for automatic transmission	= 0.8 %		
					and			
					Relative air charge (with AT)	> 191.3 %		
					and			
					Engine speed (with AT)	< A-B rpm		
					where			
					A is Upper engine speed threshold for determining for operating range HIGH, AT	= 0 rpm		
					B is the hysterisis for upper engine speed thresholds for determining the operating ranges LOW and HIGH for automatic transmission	= 40 rpm		
					and			
					Engine speed (with AT)	> 10200 rpm		
					)			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					)			
					for time	>= 0.5 sec		
					and			
					Environmental conditions are within calibrated range:	= TRUE -		
					(			
					Ambient pressure	> 50 kPa		
					and			
					Environment temperature	> -40.04 deg C		
					)			
					and			
					Engine coolant temperature is within calibrated range:	= TRUE -		
					(			
					Engine coolant temperature	> 57.96 deg C		
					and			
					Engine coolant temperature	< 143.26 deg C		
					)			
					and			
					Catalyst temperature is within calibrated range, which is the following conditions:	= TRUE -		
					(			
					max(a,b) Where: a is Maximum catalyst 1 temperature at bank 1 b is Maximum catalyst 1 temperature at bank 2	< 949.96 deg C		
					and			
					max(a,b) Where: a is Minimum catalyst 1 temperature at bank 1 b is Minimum catalyst 1 temperature at bank 2	> 399.96 deg C		
					)			
					and			
					Inlet/outlet camshaft adjustment is released as follows:	= TRUE -		
					(			
					Condition release of intake camshaft control is valid	= TRUE -		
					and			
					State of camshaftw control is not in ready state	= TRUE -		
					and			
					Condition release of outlet camshaft control is valid	= TRUE -		
					and			
					State of camshaftw control is not in ready state	= TRUE -		
					and			
					)			
					and			
					The following combustion conditions are fulfilled:	= TRUE -		
					(			
					Closed loop lambda control is active for bank 1	= TRUE -		
					and			
					Flag lambda setpoint for sensor equal to 1	= TRUE -		
					and			
					Closed loop lambda control is active for bank 2	= TRUE -		
					and			
					Flag lambda setpoint for sensor equal to 1, bank 2	= TRUE -		
					and			
					Catalyst heating is active	= FALSE -		
					and			
					Homogenous mode is activated	= 1 -		
					and			
					Air fuel ratio commanded rich for component protection is active	= FALSE -		
					)			
					and			
					Current gear position	>= 6 -		
					and			
					Current gear position	<= 10 -		
					and			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Waiting time after first end of start in a driving cycle	> 0 sec		
					)			
					and			
					Sum of high and low range adaptions in current driving cycle	>= 1 -		
					and			
					Deviation of the worst test cylinder	<= 0.999969 -		
					)			
					for time	>= 15 sec		
					and			
					(			
					Switching state of intake camshaft position for the diagnosis for AFIM has been reached	= TRUE -		
					and			
					Switching state of outlet camshaft position for the diagnosis for AFIM has been reached	= TRUE -		
					and			
					Actual rail pressure is adjusted to set point	= TRUE -		
					and			
					Actual value of fuel part purge control	< 0.008 -		
					and			
					Half Engine Mode is active	= FALSE -		
					and			
					Switching of half engine mode is in instationary state	= FALSE -		
					and			
					Engine roughness signal is released	= TRUE -		
					)			
					for time	>= 0.1 sec		
					)			
					Counter for adaption time	>= 4294967295		
					and			
					Maximum number of cylinder enrichment is achieved	= FALSE -		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
	P219C	Cylinder Specific air-fuel imbalance detection too rich	Cylinder individual air-fuel ratio considering deviation from bank average air-fuel ratio	< 0.829987 -	Enable conditions for lambda imbalance diagnosis	= TRUE -	once per driving cycle	2 Trips
					(			
					(			
	P219D				Basic enable conditions	= TRUE -		
					(			
	P219E				Engine roughness signal is valid, which is the following conditions:	= TRUE -		
					(			
	P219F				Status of trigger wheel adaptation for segment time correction for cylinder individual lambda control function	= TRUE -		
					and			
	P21A0				Condition segment duration plausible	= TRUE -		
					and			
	P21A1				Active rough road detection	= FALSE -		
					and			
	P21A2				Clutch operator is active	= FALSE -		
					and			
	P21A3				Engine synchronisation is completed and engine is in normal operation mode	= TRUE -		
					)			
					and			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Engine operation point is within calibrated range (low or high operating range), as decribed below:	= TRUE -		
					(			
					Relative air charge (with AT)	< A-B %		
					where			
					A is Upper threshold for the relative air charge in order to determine the operating range LOW depending on the engine speed nmot for automatic transmission	= 60 %		
					B is the upper thresholds of the relative air charge for determining the operating ranges LOW and HIGH for automatic transmission	= 0.8 %		
					and			
					Relative air charge (with AT)	> 24.8 %		
					and			
					Engine speed (with AT)	< A-B rpm		
					where			
					A is Upper engine speed threshold for determining for operating range LOW, AT (See Look-Up-Table #1)	= 2160 rpm		
					B is the hystersis for upper thresholds of the relative air charge for determining the operating ranges LOW and HIGH for	= 40 rpm		
					and			
					Engine speed (with AT)	> 1280 rpm		
					)			
					OR			
					(			
					High operation range is released	= TRUE -		
					and			
					(			
					Relative air charge (with AT)	< A-B %		
					where			
					A is Upper threshold for the relative air charge in order to determine the operating range LOW depending on the engine speed nmot for automatic transmission	= 0 %		
					B is the upper thresholds of the relative air charge for determining the operating ranges LOW and HIGH for automatic transmission	= 0.8 %		
					and			
					Relative air charge (with AT)	> 191.3 %		
					and			
					Engine speed (with AT)	< A-B rpm		
					where			
					A is Upper engine speed threshold for determining for operating range HIGH, AT	= 0 rpm		
					B is the hysterisis for upper engine speed thresholds for determining the operating ranges LOW and HIGH for automatic transmission	= 40 rpm		
					and			
					Engine speed (with AT)	> 10200 rpm		
					)			
					)			
					for time	>= 0.5 sec		
					and			
					Environmental conditions are within calibrated range:	= TRUE -		
					(			
					Ambient pressure	> 50 kPa		
					and			
					Environment temperature	> -40.04 deg C		
					)			
					and			
					Engine coolant temperature is within calibrated range:	= TRUE -		
					(			
					Engine coolant temperature	> 57.96 deg C		
					and			
					Engine coolant temperature	< 143.26 deg C		
					)			
					and			
					Catalyst temperature is within calibrated range, which is the following conditions:	= TRUE -		
					(			
					max(a,b)	< 949.96 deg C		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					Where: a is Maximum catalyst 1 temperature at bank 1 b is Maximum catalyst 1 temperature at bank 2 and max(a,b)	>	399.96	deg C		
					Where: a is Minimum catalyst 1 temperature at bank 1 b is Minimum catalyst 1 temperature at bank 2) and					
					Inlet/outlet camshaft adjustment is released as follows:	=	TRUE	-		
					(Condition release of intake camshaft control is valid	=	TRUE	-		
					and State of camshaftw control is not in ready state	=	TRUE	-		
					and Condition release of outlet camshaft control is valid	=	TRUE	-		
					and State of camshaftw control is not in ready state	=	TRUE	-		
					and) and					
					The following combustion conditions are fulfilled:	=	TRUE	-		
					(Closed loop lambda control is active for bank 1	=	TRUE	-		
					and Flag lambda setpoint for sensor equal to 1	=	TRUE	-		
					and Closed loop lambda control is active for bank 2	=	TRUE	-		
					and Flag lambda setpoint for sensor equal to 1, bank 2	=	TRUE	-		
					and Catalyst heating is active	=	FALSE	-		
					and Homogenous mode is activated	=	1	-		
					and Air fuel ratio commanded rich for component protection is active	=	FALSE	-		
					) and Current gear position	>=	6	-		
					and Current gear position	>=	10	-		
					and Waiting time after first end of start in a driving cycle	>	0	sec		
					) and Sum of high and low range adaptions in current driving cycle	>=	1	-		
					and Deviation of the worst test cylinder	<=	0.999969	-		
					) for time	>=	15	sec		
					and (Switching state of intake camshaft position for the diagnosis for AFIM has been reached	=	TRUE	-		
					and Switching state of outlet camshaft position for the diagnosis for AFIM has been reached	=	TRUE	-		
					and Actual rail pressure is adjusted to set point	=	TRUE	-		
					and Actual value of fuel part purge control	<	0.008	-		
					and					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 TEST GROUP: KGMXV04.2088 EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Half Engine Mode is active	= FALSE -		
					and			
					Switching of half engine mode is in instationary state	= FALSE -		
					and			
					Engine roughness signal is released	= TRUE -		
					)			
					for time	>= 0.1 sec		
					)			
					Counter for adaption time	>= 4294967295		
					and			
					Maximum number of cylinder enrichment is achieved	= FALSE -		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
Fuel System	P10A4	**Monitor 1:** Rationality check of valve opening time delay (tantot) against default value	Difference between current opening time delay and default opening time delay	> 100 us	Base Adaption is active	= TRUE -	2 events continuous	2 Trips
	P10A6				No pending or confirmed DTCs	= see sheet inhibit tables -		2 Trips
	P10A8				Basic enable conditions met	= see sheet enable tables -		2 Trips
	P10AA							2 Trips
	P10AC	**Monitor 4:** Rationality check of the total calculated injection time correction (dti) value	(		Pulse type of current injection is ballistic	= 0 -	20 events	2 Trips
	P10AE		Desired Open time(ti) on ballisitic area for CVO base adaption	>= 200 us	and			2 Trips
	P10B0		and		Base Adaption is active	= FALSE -		2 Trips
	P10B2		Total calculated injection time correction (dti)	> 79 us	and			2 Trips
			)		(			
			OR		Pause time	= 0 -		
			(		OR			
			Desired Open time(ti) on ballisitic area for CVO base adaption	< 200 us	Pause time	>= 0.003 sec		
			and		)			
			Total calculated injection time correction (dti)	> 39 us	No pending or confirmed DTCs	= see sheet inhibit tables -		
			)		Basic enable conditions met	= see sheet enable tables -		
		Monitor 5: Rationality check of the Full−Lift closing time	Current Full−Lift closing time (tab)	< 620 us	Base Adaption is active	= FALSE -	20 events	
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
		Monitor 7: Rationality check of the ballistic dTi at the adjustment−point	Integrated dti value after the controller is stable during base adaption	> 39 us	Base Adaption is active	= TRUE -		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
Fuel System	P10A3	**Monitor 1:** Rationality check of valve opening time delay (tantot) against default value	Difference between current opening time delay and default opening time delay	< -100 us	Base Adaption is active	= TRUE -	2 events continuous	2 Trips
	P10A5		OR		No pending or confirmed DTCs	= see sheet inhibit tables -		2 Trips
	P10A7		Opening time delay is found	= FALSE -	Basic enable conditions met	= see sheet enable tables -		2 Trips
	P10A9							2 Trips
	P10AB	**Monitor 4:** Rationality check of the total calculated injection time correction (dti) value	(		Pulse type of current injection is ballistic	= 0 -	20 events	2 Trips
	P10AD		Desired Open time(ti) on ballisitic area for CVO base adaption	>= 200 us	and			2 Trips
	P10AF		and		Base Adaption is active	= FALSE -		2 Trips
	P10B1		Total calculated injection time correction (dti)	< -79 us	and			2 Trips
			)		(			
			OR		Pause time	= 0 -		
			(		OR			
			Desired Open time(ti) on ballisitic area for CVO base adaption	< 200 us	Pause time	>= 0.003 sec		
			and		)			
			Total calculated injection time correction (dti)	< -39 us	No pending or confirmed DTCs	= see sheet inhibit tables -		
			)		Basic enable conditions met	= see sheet enable tables -		
		Monitor 5: Rationality check of the Full−Lift closing time	Current Full−Lift closing time (tab)	> 200 us	Base Adaption is active	= FALSE -	20 events	
					No pending or confirmed DTCs	= see sheet inhibit tables -		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Basic enable conditions met	= see sheet enable tables -		
		Monitor 6: Detection of Full−lift closing time	CVO controller is faulty and full lift closing could not be detected	= TRUE -	Base Adaption is active	= FALSE -	20 events	
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
		Monitor 7: Rationality check of the ballistic dTi at the adjustment−point	Integrated dti value after the controller is stable during base adaption	< -39 us	Base Adaption is active	= TRUE -		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
Upstream Exhaust Gas Sensor	P064D	**ECU: Self Check for Sensor ASIC of UEGO Sensor 1 Bank 1** An error is reported if the ASIC detects it or it delivers unplausible measurement values	**Monitoring of ASIC power supply:** Undervoltage at UB: Battery voltage < 6V		Diagnosis register of the ASIC is valid	= TRUE -	0.01 sec continuously	2 Trips
			ASIC has shut off due to low battery voltage (failure transition into IDLE state) **OR**	= TRUE -	(Battery voltage	<= 655.34 V		
					Battery voltage)	>= 10.9 V		
			Tests for production checks are active		for time	>= 0.1 sec		
			SPI test access port active	= TRUE -	Basic enable conditions met	= see sheet enable tables -		
			OR		No pending or confirmed DTCs	= see sheet inhibit tables -		
			Built-in self-test failed **OR**	= TRUE -				
			Monitoring of ASIC internal sequencing Internal sequencing does not work					
			Error of watchdog signal of the sequencer OR	= TRUE -				
			Watchdog signal of the SP-unit Interrupt to close OR	= TRUE -				
			Watchdog signal of the SP-unit reading error of the Program rom if set without Over- or Undervoltage Flags **OR**	= TRUE -				
			Check ASIC Chip					
			ASIC chip ID is lower than BA-step	= TRUE -				
			Monitoring of ASIC interrupt handling Interrupt handling at ASIC base software does not work		Validity of IRQ diagnosis information	= TRUE -		
					(Battery voltage	<= 655.34 V		
			Bidirectional interrupt signal between ASIC and ECU-Microcontroller: too slow- or too fast response or no response	= TRUE -	Battery voltage)	>= 10.9 V		
					for time	>= 0.1 sec		
					Basic enable conditions met	= see sheet enable tables -		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
			Monitoring of quantification of the analog digital converter Causes for error: ADC defect, 3,3V source not operational, low-pass defect		Cj135 is neither in IDLE nor in SWITCHON mode	= TRUE -		
					(Battery voltage	<= 655.34 V		
			Conversion value of the analog digital converter (amplifier mode 1) OR	< 0.00040007 V	Battery voltage)	>= 10.9 V		
					for time	>= 0.1 sec		
			Conversion value of the analog digital converter (amplifier mode 1) OR	> 0.0007 V	Basic enable conditions met	= see sheet enable tables -		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
			Conversion value of the analog digital converter (amplifier mode 2) OR	< 0.00110006 V				
			Conversion value of the analog digital converter (amplifier mode 2)	> 0.00189996 V				

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
			OR Conversion value of the analog digital converter (amplifier mode 3)	< 0.00309992 V				
			OR Conversion value of the analog digital converter (amplifier mode 3)	> 0.00539994 V				
			Current source Isq/ Rgnd resistance check Causes for error: Isq defect, Rgnd damaged or wrong calibration value of Rgnd		Cj135 is not in IDLE mode	= TRUE -		
			Ratio of requested amplitude of the pump current source and measured pump current source	< 0.807447 -	Adjustment bits ISQ reference of sensor 1 bank 1 is same as register value of desired Isq sensor 1 bank 1	= TRUE -		
			OR		(Battery voltage	<= 655.34 V		
			Ratio of requested amplitude of the pump current source and measured pump current source	> 1.192553 -	Battery voltage)	>= 10.9 V		
					for time	>= 0.1 sec		
					Basic enable conditions met	= see sheet enable tables -		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
			Current source Isqr/ Rcal resistance check Causes for error: Isqr defect, Rcal damaged		Cj135 is neither in IDLE nor in SWITCHON mode	= TRUE -		
			Ratio of requested amplitude of the pump current source and measured pump current source	< 0.807447 -	(Battery voltage	<= 655.34 V		
			OR		Battery voltage)	>= 10.9 V		
			Ratio of requested amplitude of the pump current source and measured pump current source	> 1.192553 -	for time	>= 0.1 sec		
					Basic enable conditions met	= see sheet enable tables -		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
			Rmeas resistance check Since Rmeas cannot be alone measured by ECU, then the entire resistance between pin APE and MES (Rparl) will be checked here		Cj135 is in SWITCHON mode	= TRUE -		
					Calculated parallel resistance is valid	= TRUE -		
			Calculated parallel resistance between APE and MES	< 24 Ohm	(Battery voltage	<= 655.34 V		
			Calculated parallel resistance between APE and MES	> 360 Ohm	Battery voltage)	>= 10.9 V		
					for time	>= 0.1 sec		
					Basic enable conditions met	= see sheet enable tables -		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
			Monitoring of ASIC supply voltage deviations from 3.3V		(Battery voltage	<= 655.34 V		
			Measured reference voltage VCC3	< 2.96992 V	Battery voltage)	>= 10.9 V		
			Measured reference voltage VCC3	> 3.66656 V	for time	>= 0.1 sec		
					Basic enable conditions met	= see sheet enable tables -		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
	P064E	**ECU: Self Check for Sensor ASIC of UEGO Sensor 1 Bank 2** An error is reported if the ASIC detects it or it delivers unplausible measurement values	**Monitoring of ASIC power supply:**		Diagnosis register of the ASIC is valid	= TRUE -	0.01 sec continuously	2 Trips
			Undervoltage at UB: Battery voltage < 6V. ASIC has shut off due to low battery voltage (failure transition into IDLE state) **OR**	= TRUE -	(Battery voltage	<= 655.34 V		
					Battery voltage)	>= 10.9 V		
			Tests for production checks are active		for time	>= 0.1 sec		
			SPI test access port active	= TRUE -	Basic enable conditions met	= see sheet enable tables -		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
			OR				No pending or confirmed DTCs	=	see sheet inhibit tables	-		
			Built-in self-test failed	=	TRUE	-						
			OR									
			Monitoring of ASIC internal sequencing									
			Internal sequencing does not work									
			Error of watchdog signal of the sequencer	=	TRUE	-						
			OR									
			Watchdog signal of the SP-unit Interrupt to close	=	TRUE	-						
			OR									
			Watchdog signal of the SP-unit reading error of the Program rom if set without Over- or Undervoltage Flags	=	TRUE	-						
			OR									
			Check ASIC Chip									
			ASIC chip ID is lower than BA-step	=	TRUE	-						
			Monitoring of ASIC interrupt handling				Validity of IRQ diagnosis information	=	TRUE	-		
			Interrupt handling at ASIC base software does not work									
							(Battery voltage	<=	655.34	V		
			Bidirectional interrupt signal between ASIC and ECU-Microcontroller: too slow- or too fast response or no response	=	TRUE	-	Battery voltage	>=	10.9	V		
							)					
							for time	>=	0.1	sec		
							Basic enable conditions met	=	see sheet enable tables	-		
							No pending or confirmed DTCs	=	see sheet inhibit tables	-		
			Monitoring of quantification of the analog digital converter				Cj135 is neither in IDLE nor in SWITCHON mode	=	TRUE	-		
			Causes for error: ADC defect, 3,3V source not operational, low-pass defect									
							(Battery voltage	<=	655.34	V		
			Conversion value of the analog digital converter (amplifier mode 1)	<	0.00040007	V	Battery voltage	>=	10.9	V		
							)					
			OR				for time	>=	0.1	sec		
			Conversion value of the analog digital converter (amplifier mode 1)	>	0.0007	V	Basic enable conditions met	=	see sheet enable tables	-		
			OR				No pending or confirmed DTCs	=	see sheet inhibit tables	-		
			Conversion value of the analog digital converter (amplifier mode 2)	<	0.00110006	V						
			OR									
			Conversion value of the analog digital converter (amplifier mode 2)	>	0.00189996	V						
			OR									
			Conversion value of the analog digital converter (amplifier mode 3)	<	0.00309992	V						
			OR									
			Conversion value of the analog digital converter (amplifier mode 3)	>	0.00539994	V						
			Current source Isq/ Rgnd resistance check				Cj135 is not in IDLE mode	=	TRUE	-		
			Causes for error: Isq defect, Rgnd damaged or wrong calibration value of Rgnd									
			Ratio of requested amplitude of the pump current source and measured pump current source	<	0.807447	-	Adjustment bits ISQ reference of sensor 1 bank 2 is same as register value of desired Isq sensor 1 bank 2	=	TRUE	-		
			OR				(Battery voltage	<=	655.34	V		
			Ratio of requested amplitude of the pump current source and measured pump current source	>	1.192553	-	Battery voltage	>=	10.9	V		
							)					
							for time	>=	0.1	sec		
							Basic enable conditions met	=	see sheet enable tables	-		
							No pending or confirmed DTCs	=	see sheet inhibit tables	-		
			Current source Isqr/ Rcal resistance check				Cj135 is neither in IDLE nor in SWITCHON mode	=	TRUE	-		
			Causes for error: Isqr defect, Rcal damaged									
			Ratio of requested amplitude of the pump current source and measured pump current source	<	0.807447	-	(Battery voltage	<=	655.34	V		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
			OR		Battery voltage	>= 10.9 V		
					)			
			Ratio of requested amplitude of the pump current source and measured pump current source	> 1.192553 -	for time	>= 0.1 sec		
					Basic enable conditions met	= see sheet enable tables -		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
			Rmeas resistance check Since Rmeas cannot be alone measured by ECU, then the entire resistance between pin APE and MES (Rparl) will be checked here		Cj135 is in SWITCHON mode	= TRUE -		
					Calculated parallel resistance is valid	= TRUE -		
			Calculated parallel resistance between APE and MES	< 24 Ohm	(Battery voltage	<= 655.34 V		
			Calculated parallel resistance between APE and MES	> 360 Ohm	Battery voltage	>= 10.9 V		
					)			
					for time	>= 0.1 sec		
					Basic enable conditions met	= see sheet enable tables -		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
			Monitoring of ASIC supply voltage deviations from 3.3V		(Battery voltage	<= 655.34 V		
			Measured reference voltage VCC3	< 2.96992 V	Battery voltage	>= 10.9 V		
					)			
			Measured reference voltage VCC3	> 3.66656 V	for time	>= 0.1 sec		
					Basic enable conditions met	= see sheet enable tables -		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
O2 Sensor Heater Circuit Bank 1 Sensor 1	P0130	**Path 1: Start diagnosis** Monitoring of ceramic temperature after engine start from end of dew point onwards	Ceramic temperature of upstream O2 sensor	< 719.991 deg C	Engine start has finished	= TRUE -	28 to 28 sec once per driving cycle	2 Trips
					and			
					Dew point end for O2 sensor 1 bank 1 has reached (heating up is released)	= TRUE -		
					and			
					(			
					Engine is running	= TRUE -		
					(			
					Coolant temperature at engine start	>= -40.04 deg C		
					)			
					OR			
					Engine is running	= FALSE -		
					(			
					Coolant temperature at engine output	>= -40.04 deg C		
					)			
					)			
					and			
					(			
					Battery voltage	>= 10.9 V		
					and			
					Battery voltage	<= 655.34 V		
					)			
					for time	>= 0.1 sec		
					and			
					Deactivation after release of Start Check Start Check will be aborted and deactivated for the rest of the driving cycle if any of the following conditions is not fulfilled for integrated sum time:	> 10 sec		
					(			
					Battery voltage	<= 655.34 V		
					and			
					(			
					All injectors active in operation by running engine	= TRUE -		
					OR			
					Engine is running	= FALSE -		
					)			
					)			
					Basic enable conditions met	= see sheet enable tables -		
					and			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					No pending or confirmed DTCs	= see sheet inhibit tables -		
		Path 2: Permanent diagnosis Monitoring of ceramic temperature against low rationality threshold	Ceramic temperature of upstream O2 sensor	< 719.991 deg C	(Battery voltage	<= 10.9 V	60 sec continuous	2 Trips
					and Battery voltage	>= 655.34 V		
					) for time	>= 0.1 sec		
					and Engine is running	= TRUE -		
					and Modelled exhaust gas temperature at upstream O2 sensor bank 1	>= 349.96 deg C		
					and Fuel cut off is active	= FALSE -		
					for time	>= 50 sec		
					and HO2S closed loop heating control (inaccurate), which is the following condition for time:	>= 50 sec		
					(Deviation between actual temperature value and set point)	> 64.9922 deg C		
					and Basic enable conditions met	= see sheet enable tables -		
					and No pending or confirmed DTCs	= see sheet inhibit tables -		
		Path 3: Low Temperature Diagnosis Monitoring of ceramic temperature against very low rationality threshold (drops quickly to a critical low level)	Temperature of ceramic upstream O2 sensor	< 639.998 deg C	(Battery voltage	<= 10.9 V	10 sec continuous	2 Trips
					and Battery voltage	>= 655.34 V		
					) for time	>= 0.1 sec		
					and Engine is running	= TRUE -		
					and Modelled exhaust gas temperature at upstream O2 sensor bank 1	>= 349.96 deg C		
					and Fuel cut off is active	= FALSE -		
					for time	>= 50 sec		
					and HO2S closed loop heating control (inaccurate), which is the following condition for time:	>= 50 sec		
					(Deviation between temperature value and set point)	> 64.9922 deg C		
					and Basic enable conditions met	= see sheet enable tables -		
					and No pending or confirmed DTCs	= see sheet inhibit tables -		
	P0130	Lambda sensor wire diagnosis Circuit countinuity - open load at pin RE detected by means of aborted RAM check at WARMUP mode	**Aborted RAM check at ASIC shut-off when CJ135 in WARMUP mode** Open load at pin RE detected if countinuiuty measurement was done before ASIC abort		(Battery voltage	<= 655.34 V	continuous	2 Trips
			Short circuit to battery fault is detected at sensor lines IPE/APE/MES as per last accessed ASIC diagnostic register, means	= FALSE -	Battery voltage)	>= 10.9 V		
					for time	>= 0.1 sec		
			Voltage at least at one of the sensor lines IPE/APE/MES	<= 9.1 to 10.3 V	Requested mode of UEGO sensor 1 Bank 1 is in WARMUP mode	= TRUE -		
			Result of continuity measurement of sensor pumpcell using current source ISQ (in a state, where the ASIC-internal current source ISQr is connected to the sensor line "RE" via internal switches and the sensor line "IPE" is directly connected to RGnd) is available in RAM	= TRUE -	Upstream HO2S Sensor is heated up, which is the following conditions: (	= TRUE -		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Upstream HO2S Sensor ceramic temperature	> 789.998 deg C		
					OR			
					Heating−up phase of the sensor is completed	= TRUE -		
					)			
					Basic enable conditions met	= see sheet enable tables -		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
		Lambda sensor wire diagnosis Circuit countinuity - open load at pin RE detected by means of aborted RAM check at NORMAL mode	**Aborted RAM check at ASIC shut-off when CJ135 in NORMAL mode** Open load at pin RE detected if current via Nernst cell is not OK Current source ISQr is active: current via Nernst cell is OK	= FALSE -	(Battery voltage	<= 655.34 V		
					Battery voltage	>= 10.9 V		
					)			
					for time	>= 0.1 sec		
					Upstream HO2S Sensor is heated up, which is the following conditions:	= TRUE -		
					(			
					Upstream HO2S Sensor ceramic temperature	> 789.998 deg C		
					OR			
					Heating−up phase of the sensor is completed	= TRUE -		
					)			
					UEGO Signal ASIC mode request of sensor 1 bank 1 is in NORMAL operation mode	= TRUE -		
					Validity of REFPAT register sensor 1 bank 1	= TRUE -		
					Basic enable conditions met	= see sheet enable tables -		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
		Circuit continuity check - open circuit by means of nernst voltage monitoring during pump current operation	**Monitoring of abnormalities at sensor line IPE during normal ASIC operation** Open load at pin RE detected by means of nernst voltage monitoring Electrically corrected nernst voltage	> 1.8 V	(Battery voltage	<= 655.34 V		
					Battery voltage	>= 10.9 V		
					)			
					for time	>= 0.1 sec		
					Upstream HO2S Sensor is heated up, which is the following conditions:	= TRUE -		
					(			
					Upstream HO2S Sensor ceramic temperature	> 789.998 deg C		
					OR			
					Heating−up phase of the sensor is completed	= TRUE -		
					)			
					UEGO Signal ASIC mode request of sensor 1 bank 1 is not in IDLE mode (pumping current is active)	= TRUE -		
					Counter of verifications of the actual mode of the ASIC for sensor 1 bank 1	>= 10 -		
					Basic enable conditions met	= see sheet enable tables -		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
		Circuit continuity check - open circuit by means of continuity measurements of sensor pumpsell respectively nernst cell during normal or aborted ASIC operation in WARMUP mode	**Monitoring of abnormalities at sensor line RE during normal ASIC operation when CJ135 is in WARMUP mode** Open load at pin RE detected by means of continuity measurements of sensor pumpcell and sensor nernst cell using current source ISQr Difference of voltage drop at ECU-internal resistor RG in a state, where the ASIC-internal current source ISQr is connected to the sensor line "APE" and the sensor line "IPE" is directly connected to RGnd and voltage drop at ECU-internal resistor RG in a state, where all sensor lines are opened (Ug0iai - Ug0)	>= E * F	(Battery voltage	<= 655.34 V		
					Battery voltage	>= 10.9 V		
					)			
					for time	>= 0.1 sec		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
			Difference of voltage drop at ECU-internal resistor RG in a state, where the ASIC-internal current source ISQr is connected to the sensor line "RE" and the sensor line "IPE" is directly connected to RGnd and voltage drop at ECU-internal resistor RG in a state, where all sensor lines are opened (Ug0iei - Ug0)	<	E * F		Upstream HO2S Sensor is heated up, which is the following conditions:	=	TRUE	-		
			(E) Measured amplitude of the reference pump current source	=	measured value		(					
			(F) Minimum sensitivity of the continuiuity measurements to resistance RGnd	=	66	Ohm	Upstream HO2S Sensor ceramic temperature	>	789.998	deg C		
							OR					
							Heating−up phase of the sensor is completed	=	TRUE	-		
							)					
							Requested mode of UEGO sensor 1 Bank 1 is in WARMUP mode	=	TRUE	-		
							and					
							(					
							(Last packet transfer aborted of sensor 1 bank 1	=	FALSE	-		
							Counter of verifications of the actual mode of the ASIC for sensor 1 bank 2	>=	10	counts		
							Display for the validity of Isqr for UEGO sensor 1 Bank 1	=	TRUE	-		
							)					
							OR					
							(Last packet transfer aborted of sensor 1 bank 1	=	TRUE	-		
							Result of continuity measurement of sensor pumpcell using current source ISQ (in a state, where the ASIC-internal current source ISQr is connected to the sensor line "APE" via internal switches and the sensor line "IPE" is directly connected to RGnd) is available in RAM	=	TRUE	-		
							Short circuit to battery fault is detected at sensor lines RE/IPE/APE/MES as per last accessed ASIC diagnostic register, means	=	TRUE	-		
							Voltage at least at one of the sensor lines (RE/IPE/APE/MES)	>	9.1 to 10.3	V		
							)					
							)					
							Basic enable conditions met	=	see sheet enable tables	-		
							No pending or confirmed DTCs	=	see sheet inhibit tables	-		
O2 Sensor Heater Circuit Bank 2 Sensor 1	P0150	**Path 1: Start diagnosis** Monitoring of ceramic temperature after engine start from end of dew point onwards	Ceramic temperature of upstream O2 sensor	<	719.991	deg C	Engine start has finished	=	TRUE	-	28 to 28 sec once per driving cycle	2 Trips
							and					
							Dew point end for O2 sensor 1 bank 2 has reached (heating up is released)	=	TRUE	-		
							and					
							(					
							Engine is running	=	TRUE	-		
							(					
							Coolant temperature at engine start	>=	-40.04	deg C		
							)					
							OR					
							Engine is running	=	FALSE	-		
							(					
							Coolant temperature at engine output	>=	-40.04	deg C		
							)					
							)					
							and					
							(					
							Battery voltage	>=	10.9	V		
							and					
							Battery voltage	<=	655.34	V		
							)					
							for time	>=	0.1	sec		
							and					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Deactivation after release of Start Check Start Check will be aborted and deactivated for the rest of the driving cycle if any of the following conditions is not fulfilled for integrated sum time:	> 10 sec		
					(Battery voltage	<= 655.34 V		
					and (All injectors active in operation by running engine	= TRUE -		
					OR Engine is running))	= FALSE -		
					Basic enable conditions met	= see sheet enable tables -		
					and No pending or confirmed DTCs	= see sheet inhibit tables -		
		Path 2: Permanent diagnosis Monitoring of ceramic temperature against low rationality threshold	Ceramic temperature of upstream O2 sensor	< 719.991 deg C	(Battery voltage	<= 10.9 V	60 sec continuous	2 Trips
					and Battery voltage)	>= 655.34 V		
					for time	>= 0.1 sec		
					and Engine is running	= TRUE -		
					and Modelled exhaust gas temperature at upstream O2 sensor bank 2	>= 349.96 deg C		
					and Fuel cut off is active	= FALSE -		
					for time	>= 50 sec		
					and HO2S closed loop heating control (inaccurate), which is the following condition for time:	>= 50 sec		
					(Deviation between actual temperature value and set point)	> 64.9922 deg C		
					and Basic enable conditions met	= see sheet enable tables -		
					and No pending or confirmed DTCs	= see sheet inhibit tables -		
		Path 3: Low Temperature Diagnosis Monitoring of ceramic temperature against very low rationality threshold (drops quickly to a critical low level)	Temperature of ceramic upstream O2 sensor	< 639.998 deg C	(Battery voltage	<= 10.9 V	10 sec continuous	2 Trips
					and Battery voltage)	>= 655.34 V		
					for time	>= 0.1 sec		
					and Engine is running	= TRUE -		
					and Modelled exhaust gas temperature at upstream O2 sensor bank 2	>= 349.96 deg C		
					and Fuel cut off is active	= FALSE -		
					for time	>= 50 sec		
					and HO2S closed loop heating control (inaccurate), which is the following condition for time:	>= 50 sec		
					(Deviation between temperature value and set point)	> 64.9922 deg C		
					and Basic enable conditions met	= see sheet enable tables -		
					and No pending or confirmed DTCs	= see sheet inhibit tables -		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
	P0150	Lambda sensor wire diagnosis Circuit countinuity - open load at pin RE detected by means of aborted RAM check at WARMUP mode	**Aborted RAM check at ASIC shut-off when CJ135 in WARMUP mode**				(	<=	655.34	V		2 Trips
			Open load at pin RE detected if countinuiuty measurement was done before ASIC abort				Battery voltage					
			Short circuit to battery fault is detected at sensor lines IPE/APE/MES as per last accessed ASIC diagnostic register, means	=	FALSE	-	Battery voltage	>=	10.9	V		
							)					
							for time	>=	0.1	sec		
			Voltage at least at one of the sensor lines IPE/APE/MES	<=	9.1 to 10.3	V	Requested mode of UEGO sensor 1 Bank 2 is in WARMUP mode	=	TRUE	-		
			Result of continuity measurement of sensor pumpcell using current source ISQ (in a state, where the ASIC-internal current source ISQr is connected to the sensor line "RE" via internal switches and the sensor line "IPE" is directly connected to RGnd) is available in RAM	=	TRUE	-	Upstream HO2S Sensor is heated up, which is the following conditions:	=	TRUE	-		
							(					
							Upstream HO2S Sensor ceramic temperature	>	789.998	deg C		
							OR					
							Heating−up phase of the sensor is completed	=	TRUE	-		
							)					
							Basic enable conditions met	=	see sheet enable tables	-		
							No pending or confirmed DTCs	=	see sheet inhibit tables	-		
		Lambda sensor wire diagnosis Circuit countinuity - open load at pin RE detected by means of aborted RAM check at NORMAL mode	**Aborted RAM check at ASIC shut-off when CJ135 in NORMAL mode**				(	<=	655.34	V		
			Open load at pin RE detected if current via Nernst cell is not OK				Battery voltage					
			Current source ISQr is active: current via Nernst cell is OK	=	FALSE	-	Battery voltage	>=	10.9	V		
							)					
							for time	>=	0.1	sec		
							Upstream HO2S Sensor is heated up, which is the following conditions:	=	TRUE	-		
							(					
							Upstream HO2S Sensor ceramic temperature	>	789.998	deg C		
							OR					
							Heating−up phase of the sensor is completed	=	TRUE	-		
							)					
							UEGO Signal ASIC mode request of sensor 1 bank 2 is in NORMAL operation mode	=	TRUE	-		
							Validity of REFPAT register sensor 1 bank 2	=	TRUE	-		
							Basic enable conditions met	=	see sheet enable tables	-		
							No pending or confirmed DTCs	=	see sheet inhibit tables	-		
		Circuit continuity check - open circuit by means of nernst voltage monitoring during pump current operation	**Monitoring of abnormalities at sensor line IPE during normal ASIC operation**				(	<=	655.34	V		
			Open load at pin RE detected by means of nernst voltage monitoring				Battery voltage					
			Electrically corrected nernst voltage	>	1.8	V	Battery voltage	>=	10.9	V		
							)					
							for time	>=	0.1	sec		
							Upstream HO2S Sensor is heated up, which is the following conditions:	=	TRUE	-		
							(					
							Upstream HO2S Sensor ceramic temperature	>	789.998	deg C		
							OR					
							Heating−up phase of the sensor is completed	=	TRUE	-		
							)					
							UEGO Signal ASIC mode request of sensor 1 bank 2 is not in IDLE mode (pumping current is active)	=	TRUE	-		
							Counter of verifications of the actual mode of the ASIC for sensor 1 bank 2	>=	10	-		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Basic enable conditions met	= see sheet enable tables -		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
		Circuit continuity check - open circuit by means of continuity measurements of sensor pumpsell respectively nernst cell during normal or aborted ASIC operation in WARMUP mode	**Monitoring of abnormalities at sensor line RE during normal ASIC operation when CJ135 is in WARMUP mode** Open load at pin RE detected by means of continuity measurements of sensor pumpcell and sensor nernst cell using current source ISQr		(Battery voltage	<= 655.34 V		
			Difference of voltage drop at ECU-internal resistor RG in a state, where the ASIC-internal current source ISQr is connected to the sensor line "APE" and the sensor line "IPE" is directly connected to RGnd and voltage drop at ECU-internal resistor RG in a state, where all sensor lines are opened (Ug0iai - Ug0)	>= E * F	Battery voltage)	>= 10.9 V		
					for time	>= 0.1 sec		
			Difference of voltage drop at ECU-internal resistor RG in a state, where the ASIC-internal current source ISQr is connected to the sensor line "RE" and the sensor line "IPE" is directly connected to RGnd and voltage drop at ECU-internal resistor RG in a state, where all sensor lines are opened (Ug0iei - Ug0)	< E * F	Upstream HO2S Sensor is heated up, which is the following conditions:	= TRUE -		
			(E) Measured amplitude of the reference pump current source	= measured value	(			
			(F) Minimum sensitivity of the continuiuity measurements to resistance RGnd	= 66 Ohm	Upstream HO2S Sensor ceramic temperature	> 789.998 deg C		
					OR			
					Heating−up phase of the sensor is completed	= TRUE -		
					)			
					Requested mode of UEGO sensor 1 Bank 2 is in WARMUP mode	= TRUE -		
					and			
					(			
					(			
					Last packet transfer aborted of sensor 1 bank 2	= FALSE -		
					Counter of verifications of the actual mode of the ASIC for sensor 1 bank 2	>= 10 counts		
					Display for the validity of Isqr for UEGO sensor 1 Bank 2	= TRUE -		
					)			
					OR			
					(			
					Last packet transfer aborted of sensor 1 bank 2	= TRUE -		
					Result of continuity measurement of sensor pumpcell using current source ISQ (in a state, where the ASIC-internal current source ISQr is connected to the sensor line "APE" via internal switches and the sensor line "IPE" is directly connected to RGnd) is available in RAM	= TRUE -		
					Short circuit to battery fault is detected at sensor lines RE/IPE/APE/MES as per last accessed ASIC diagnostic register, means	= TRUE -		
					Voltage at least at one of the sensor lines (RE/IPE/APE/MES)	> 9.1 to 10.3 V		
					)			
					Basic enable conditions met	= see sheet enable tables -		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
UEGO Heater Control Powerstage	P0032	Diagnoses the UEGO heater control powerstage of bank 1 sensor 1 for short circuit to battery fault at the low side of the driver circuit	Voltage high during driver ON state (indicates short-to-power)	- Short to power: ≤ 0.5 Ω impedance between signal and controller power -	Release condition of heater powerstage diagnosis is enabled	= TRUE -	0.5 sec continuous	2 Trips
					The following release condition of diagnosis report of bank 1 sensor 1 is satisfied	= TRUE -		
					(			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					(Battery Voltage for time Battery Voltage) for time) Duty cycle control powerstage heater sensor 1 bank 1 Basic enable conditions met No Pending or Confirmed DTCs	 >= 10.9 V = 1.5 sec <= 655.34 V >= 0.1 sec >= 4.0009 % = see sheet enable tables - = see sheet inhibit tables -		
UEGO Heater Control Powerstage	P0031	Diagnoses the UEGO heater control powerstage of bank 1 sensor 1 for short circuit to ground fault at the low side of the driver circuit	Voltage low during driver OFF state (indicates short-to-ground)	= Short to ground: ≤ 0.5 Ω impedance between signal and controller ground -	Release condition of heater powerstage diagnosis is enabled The following release condition of diagnosis report of bank 1 sensor 1 is satisfied ((Battery Voltage for time Battery Voltage) for time) Basic enable conditions met No Pending or Confirmed DTCs	= TRUE - = TRUE - >= 10.9 V = 1.5 sec <= 655.34 V >= 0.1 sec = see sheet enable tables - = see sheet inhibit tables -	2 sec continuous	2 Trips
UEGO Heater Control Powerstage	P0030	Diagnoses the UEGO heater control powerstage of bank 1 sensor 1 for open circuit faults	Voltage low during driver OFF state (indicates open circuit)	= Open Circuit:≥ 200 K Ω impedance between ECU pin and load -	Release condition of heater powerstage diagnosis is enabled The following release condition of diagnosis report of bank 1 sensor 1 is satisfied ((Battery Voltage for time Battery Voltage) for time) Basic enable conditions met No Pending or Confirmed DTCs	= TRUE - = TRUE - >= 10.9 V = 1.5 sec <= 655.34 V >= 0.1 sec = see sheet enable tables - = see sheet inhibit tables -	0.5 sec continuous	2 Trips
UEGO Heater Control Powerstage	P0052	Diagnoses the UEGO heater control powerstage of bank 1 sensor 2 for short circuit to battery fault at the low side of the driver circuit	Voltage high during driver ON state (indicates short-to-power)	- Short to power: ≤ 0.5 Ω impedance between signal and controller power -	Release condition of heater powerstage diagnosis is enabled The following release condition of diagnosis report of bank 2 sensor 1 is satisfied ((Battery Voltage for time Battery Voltage) for time) Duty cycle control powerstage heater sensor 1 bank 2 Basic enable conditions met No Pending or Confirmed DTCs	= TRUE - = TRUE - >= 10.9 V = 1.5 sec <= 655.34 V >= 0.1 sec >= 4.0009 % = see sheet enable tables - = see sheet inhibit tables -	2 sec continuous	2 Trips

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
UEGO Heater Control Powerstage	P0051	Diagnoses the UEGO heater control powerstage of bank 2 sensor 1 for short circuit to ground fault at the low side of the driver circuit	Voltage low during driver OFF state (indicates short-to-ground)	= Short to ground: ≤ 0.5 Ω impedance between signal and controller ground -	Release condition of heater powerstage diagnosis is enabled The following release condition of diagnosis report of bank 2 sensor 1 is satisfied ((Battery Voltage for time Battery Voltage) for time) Basic enable conditions met No Pending or Confirmed DTCs	= TRUE - = TRUE - >= 10.9 V = 1.5 sec <= 655.34 V >= 0.1 sec = see sheet enable tables - = see sheet inhibit tables -	0.5 sec continuous	2 Trips
UEGO Heater Control Powerstage	P0050	Diagnoses the UEGO heater control powerstage of bank 2 sensor 1 for open circuit faults	Voltage low during driver OFF state (indicates open circuit)	= Open Circuit:≥ 200 K Ω impedance between ECU pin and load -	Release condition of heater powerstage diagnosis is enabled The following release condition of diagnosis report of bank 2 sensor 1 is satisfied ((Battery Voltage for time Battery Voltage) for time) Basic enable conditions met No Pending or Confirmed DTCs	= TRUE - = TRUE - >= 10.9 V = 1.5 sec <= 655.34 V >= 0.1 sec = see sheet enable tables - = see sheet inhibit tables -	0.5 sec continuous	2 Trips
Upstream Exhaust Gas Sensor	P2237	Lambda sensor wire diagnosis for UEGO sensor 1 bank 1 Circuit continiuity - open circuit at pin Apes	**Monitoring of abnormalities at sensor line Apes during normal ASIC operation when CJ135 in WARMUP mode** Open load at pin Apes detected by means of continuity measurements of sensor pumpcell and sensor nernst cell using current source ISQr Difference of voltage drop at ECU-internal resistor RG in a state, where the ASIC-internal current source ISQr is connected to the sensor line "APE" and the sensor line "IPE" is directly connected to RGnd and voltage drop at ECU-internal resistor RG in a state, where all sensor lines are opened (Ug0iai - Ug0) Difference of voltage drop at ECU-internal resistor RG in a state, where the ASIC-internal current source ISQr is connected to the sensor line "RE" and the sensor line "IPE" is directly connected to RGnd and voltage drop at ECU-internal resistor RG in a state, where all sensor lines are opened (Ug0iei - Ug0) (E) Measured amplitude of the reference pump current source (F) Minimum sensitivity of the continuiuity measurements to resistance RGnd **Aborted RAM check at ASIC shut-off when CJ135 in WARMUP mode** Open load at pin Apes detected by means of continuity measurements of sensor pumpcell and sensor nernst cell using current source ISQr	< E * F V >= E * F V = measured value A = 66 Ohm	(Battery voltage Battery voltage) for time Upstream HO2S Sensor is heated up, which is the following conditions: (Upstream HO2S Sensor ceramic temperature OR	<= 655.34 V >= 10.9 V >= 0.1 sec = TRUE - > 789.998 deg C	continuous	2 Trips

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 TEST GROUP: KGMXV04.2088 EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
			Result of continuity measurement of sensor pumpcell using current source ISQ (in a state, where the ASIC-internal current source ISQr is connected to the sensor line "APE" via internal switches and the sensor line "IPE" is directly connected to RGnd) is available in RAM	=	TRUE	-	Heating−up phase of the sensor is completed	=	TRUE	-		
			Short circuit to battery fault is detected at sensor lines RE/IPE/APE/MES as per last accessed ASIC diagnostic register, means	=	TRUE	-	)					
			Voltage at least at one of the sensor lines RE/IPE/APE/MES	>	9.1 to 10.3	V	Basic enable conditions met	=	see sheet enable tables	-		
			Difference of voltage drop at ECU-internal resistor RG in a state, where the ASIC-internal current source ISQr is connected to the sensor line "APE" and the sensor line "IPE" is directly connected to RGnd and voltage drop at ECU-internal resistor RG in a state, where all sensor lines are opened (Ug0iai - Ug0)	<	D * F	V	No pending or confirmed DTCs	=	see sheet inhibit tables	-		
			Difference of voltage drop at ECU-internal resistor RG in a state, where the ASIC-internal current source ISQr is connected to the sensor line "RE" and the sensor line "IPE" is directly connected to RGnd and voltage drop at ECU-internal resistor RG in a state, where all sensor lines are opened (Ug0iei - Ug0)	>=	D * F	V						
			(D) Requested amplitude of the reference pump current source	=	commanded value	A						
			(F) Minimum sensitivity of the continuiuity measurements to resistance RGnd	=	66	Ohm						
			Aborted RAM check at ASIC shut-off when CJ135 in NORMAL mode Open load at pin Apes detected if countinuiuty measurement was done before abort									
			Result of continuity measurement of sensor pumpcell using current source ISQ (in a state, where the ASIC-internal current source ISQr is connected to the sensor line "APE" via internal switches and the sensor line "IPE" is directly connected to RGnd) is available in RAM	=	TRUE	-						
Exhaust gas sensor, Bank 1	P2237	Path 1 : Monitoring of prolonged activation of the blackening protection	Blackening protection is active for at least number of 16 successive checks	>	5	counts	(				10 - Continuous	2 Trips
			for time	>=	2.55	sec	Release of diagnosis report sensor 1 bank 1	=	TRUE	-		
							(					
							(					
							Battery voltage	>=	10.9	V		
							for time	>=	1.5	sec		
							Battery voltage	<=	655.34	V		
							)					
							for time	>=	0.1	sec		
							)					
							Sensor in hot state	=	TRUE	-		
							(					
							Sensor operation release, Sensor 1 Bank 1	=	TRUE	-		
							(					
							Battery voltage	<=	655.34	V		
							for time	>=	0.06	sec		
							(					
							(					
							(					
							End of start reached	=	FALSE	-		
							OR					
							Engine operation in stopping and finish state	=	FALSE	-		
							(					
							Heat quantity to dew-point end exceeds heat quantity threshold for dew-point end	=	TRUE	-		
							)					
							)					
							OR					
							(					
							Dew point end is reset for TSP sensor 1	=	FALSE	-		
							Counter for repeated cold starts dew-point end not reached sensor 1	<=	2	counts		
							(					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 TEST GROUP: KGMXV04.2088 EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					(					
					Catalyst heating request by cold engine	=	TRUE	-		
					and					
					Catalyst heating request in connection with engine speed	=	TRUE	-		
					Ratio of heat quantity for dew-point end detection sensor 1 and heat quantity threshold for dew-point end detection sensor 1 bank 1 (see Look-Up Table #P2237-1)	>=	0 to 0.40625	-		
					)					
					OR					
					Ratio of heat quantity for dew-point end detection sensor 1 and heat quantity threshold for dew-point end detection sensor 1 bank 1	>=	1	-		
					)					
					)					
					)					
					)					
					(					
					(					
					(					
					Engine is stopping	=	TRUE	-		
					OR					
					Engine in stop phase	=	TRUE	-		
					)					
					for time	>=	2	sec		
					)					
					OR					
					Engine in running state	=	TRUE	-		
					)					
					OR					
					(					
					Status of fast light-off for Lambda sensor	=	TRUE	-		
					OR					
					Function demand for oxygen sensor heating before start	=	TRUE	-		
					)					
					OR					
					Dew point release requested by service tester	=	TRUE	-		
					)					
					(					
					Battery voltage	>=	10.9	V		
					for time	>=	1.5	sec		
					OR					
					Heating up of open loop completed, sensor 1, bank 1	=	TRUE	-		
					)					
					Error with heater, sensor 1, bank 1	=	FALSE	-		
					UEGO Signal ASIC mode request of sensor 1 bank 1	=	0	-		
					Battery voltage	>	9.8	V		
					for time	>=	0.5	sec		
					Battery voltage	>	8	V		
					for time	>=	0.05	sec		
					Status auxillary power relay	=	TRUE	-		
					ECU in drive state	=	TRUE	-		
					)					
					Evaluation temperature is valid, sensor 1 bank 1	=	TRUE	-		
					(					
					Temperature of ceramic sensor 1 bank 1	>	A - B	deg C		
					where					
					(A) temperature set point for heater control	=	800.006	deg C		
					(B) large temperature threshold of the control deviation of heater control	=	64.9922	deg C		
					OR					
					Heating up open loop is completed, sensor 1, bank 1	=	TRUE	-		
					(					
					Open loop ramp phase finished	=	TRUE	-		
					for time	>=	0	sec		
					OR					
					Temperature of ceramic sensor 1 bank 1	>=	789.998	deg C		
					)					
					)					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					)			
					for time	>= 0.1 sec		
					Pump current operation for sensor 1 bank 1 is active	= TRUE -		
					Counter of verifications of the actual mode of the ASIC for sensor 1 bank 1	> 30 counts		
					UEGO Signal ASIC mode request of sensor 1 bank 1	= 0 -		
					Current pump package is valid	= TRUE -		
					)			
					No pending or confirmed DTCs	= see sheet inhibit table -		
					Basic enable conditions met	= see sheet enable tables -		
		Path 2: Monitoring of negative voltage drop deviation at ECU-internal resistor Rgnd by means of continuity measurements of sensor pumpcell	Negative voltage drop deviation, sensor 1 bank 1	<= -0.15008 V	**Common conditions for voltage drop deviation:**			
			and		(			
			Negative voltage drop deviation, sensor 1 bank 1	>= 0.15008 V	Release of diagnosis report sensor 1 bank 1	= TRUE -		
					(			
					(			
					Battery voltage	>= 10.9 V		
					for time	>= 1.5 sec		
					and			
					Battery voltage	<= 655.34 V		
					)			
					for time	>= 0.1 sec		
					)			
					Sensor in hot state	= TRUE -		
					(			
					Sensor operation release, Sensor 1 Bank 1	= TRUE -		
					(			
					Battery voltage	<= 655.34 V		
					for time	>= 0.06 sec		
					(			
					(			
					(			
					End of start reached	= FALSE -		
					OR			
					Engine operation in stopping and finish state	= FALSE -		
					(			
					Heat quantity to dew-point end exceeds heat quantity threshold for dew-point end	= TRUE -		
					)			
					)			
					OR			
					(			
					Dew point end is reset for TSP sensor 1	= FALSE -		
					Counter for repeated cold starts dew-point end not reached sensor 1	<= 2 counts		
					(			
					Catalyst heating request by cold engine	= TRUE -		
					Catalyst heating request in connection with engine speed	= TRUE -		
					(			
					Ratio of heat quantity for dew-point end detection sensor 1 and heat quantity threshold for dew-point end detection sensor 1 bank 1 (see Look-Up Table #P2237-1)	>= 0 to 0.40625 -		
					)			
					OR			
					Ratio of heat quantity for dew-point end detection sensor 1 and heat quantity threshold for dew-point end detection sensor 1 bank 1	>= 1 -		
					)			
					)			
					)			
					(			
					(			
					(			
					Engine is stopping	= TRUE -		
					OR			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
							Engine in stop phase	=	TRUE	-		
							)					
							for time	>=	2	sec		
							)					
							OR					
							Engine in running state	=	TRUE	-		
							)					
							OR					
							(					
							Status of fast light-off for Lambda sensor	=	TRUE	-		
							OR					
							Function demand for oxygen sensor heating before start	=	TRUE	-		
							)					
							OR					
							Dew point release requested by service tester	=	TRUE	-		
							)					
							(					
							Battery voltage	>=	10.9	V		
							for time	>=	1.5	sec		
							OR					
							Heating up of open loop completed, sensor 1, bank 1	=	TRUE	-		
							)					
							Error with heater, sensor 1, bank 1	=	FALSE	-		
							UEGO Signal ASIC mode request of sensor 1 bank 1	=	0	-		
							Battery voltage	>	9.8	V		
							for time	>=	0.5	sec		
							Battery voltage	>	8	V		
							for time	>=	0.05	sec		
							Status auxillary power relay	=	TRUE	-		
							ECU in drive state	=	TRUE	-		
							)					
							Evaluation temperature is valid, sensor 1 bank 1	=	TRUE	-		
							(					
							Temperature of ceramic sensor 1 bank 1 where	>	A - B	deg C		
							(A) temperature set point for heater control	=	800.006	deg C		
							(B) large temperature threshold of the control deviation of heater control	=	64.9922	deg C		
							OR					
							Heating up open loop is completed, sensor 1, bank 1	=	TRUE	-		
							(					
							Open loop ramp phase finished	=	TRUE	-		
							for time	>=	0	sec		
							OR					
							Temperature of ceramic sensor 1 bank 1	>=	789.998	deg C		
							)					
							)					
							)					
							for time	>=	0.1	sec		
							Pump current operation for sensor 1 bank 1 is active	=	TRUE	-		
							Counter of verifications of the actual mode of the ASIC for sensor 1 bank 1	>	30	counts		
							UEGO Signal ASIC mode request of sensor 1 bank 1	!=	0	-		
							Current pump package is valid	=	TRUE	-		
							)					
							No pending or confirmed DTCs	=	see sheet inhibit table	-		
							Basic enable conditions met	=	see sheet enable tables	-		
		Path 3: Monitoring of positive voltage drop deviation at ECU-internal resistor Rgnd by means of continuity measurements of sensor pumpcell	Positive voltage drop deviation, sensor 1 bank 1	<=	-0.15008	V	**Common conditions for voltage drop deviation**	=	TRUE	-		
			Positive voltage drop deviation, sensor 1 bank 1	>=	0.15008	V	Basic enable conditions met	=	see sheet enable tables	-		
		Path 4: Monitoring of the non-availability of the sensor signals for a prolonged duration	(				(					
			Physical release conditions for oxygen sensor are fulfilled	=	FALSE	-	Release of diagnosis report sensor 1 bank 1	=	TRUE	-		
			OR				(					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
			Oxygen sensor signals are of high precision	=	FALSE	-	(					
			)				Battery voltage	>=	10.9	V		
			for time	>=	10	sec	for time	>=	1.5	sec		
							Battery voltage	<=	655.34	V		
							)					
							for time	>=	0.1	sec		
							)					
							Sensor in hot state	=	TRUE	-		
							(					
							Sensor operation release, Sensor 1 Bank 1	=	TRUE	-		
							(					
							Battery voltage	<=	655.34	V		
							for time	>=	0.06	sec		
							(					
							(					
							(					
							End of start reached	=	FALSE	-		
							OR					
							Engine operation in stopping and finish state	=	FALSE	-		
							(					
							Heat quantity to dew-point end exceeds heat quantity threshold for dew-point end	=	TRUE	-		
							)					
							)					
							OR					
							(					
							Dew point end is reset for TSP sensor 1	=	FALSE	-		
							Counter for repeated cold starts dew-point end not reached sensor 1	<=	2	counts		
							(					
							Catalyst heating request by cold engine	=	TRUE	-		
							Catalyst heating request in connection with engine speed	=	TRUE	-		
							(					
							Ratio of heat quantity for dew-point end detection sensor 1 and heat quantity threshold for dew-point end detection sensor 1 bank 1 (see Look-Up Table #P2237-1)	>=	0 to 0.40625	-		
							)					
							OR					
							Ratio of heat quantity for dew-point end detection sensor 1 and heat quantity threshold for dew-point end detection sensor 1 bank 1	>=	1	-		
							)					
							)					
							)					
							(					
							(					
							(					
							Engine is stopping	=	TRUE	-		
							OR					
							Engine in stop phase	=	TRUE	-		
							)					
							for time	>=	2	sec		
							)					
							OR					
							Engine in running state	=	TRUE	-		
							)					
							OR					
							(					
							Status of fast light-off for Lambda sensor	=	TRUE	-		
							OR					
							Function demand for oxygen sensor heating before start	=	TRUE	-		
							)					
							OR					
							Dew point release requested by service tester	=	TRUE	-		
							)					
							(					
							Battery voltage	>=	10.9	V		
							for time	>=	1.5	sec		
							OR					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Heating up of open loop completed, sensor 1, bank 1	= TRUE -		
					)			
					Error with heater, sensor 1, bank 1	= FALSE -		
					UEGO Signal ASIC mode request of sensor 1 bank 1	= 0 -		
					Battery voltage	> 9.8 V		
					for time	>= 0.5 sec		
					Battery voltage	> 8 V		
					for time	>= 0.05 sec		
					Status auxillary power relay	= TRUE -		
					ECU in drive state	= TRUE -		
					)			
					Evaluation temperature is valid, sensor 1 bank 1	= TRUE -		
					(			
					Temperature of ceramic sensor 1 bank 1 where	> A - B deg C		
					(A) temperature set point for heater control	= 800.006 deg C		
					(B) large temperature threshold of the control deviation of heater control	= 64.9922 deg C		
					OR			
					Heating up open loop is completed, sensor 1, bank 1	= TRUE -		
					(			
					Open loop ramp phase finished	= TRUE -		
					for time	>= 0 sec		
					OR			
					Temperature of ceramic sensor 1 bank 1	>= 789.998 deg C		
					)			
					)			
					)			
					for time	>= 0.1 sec		
					Pump current operation for sensor 1 bank 1 is active	= TRUE -		
					Counter of verifications of the actual mode of the ASIC for sensor 1 bank 1	> 30 -		
					UEGO Signal ASIC mode request of sensor 1 bank 1	= 0 -		
					Current pump package is valid	= TRUE -		
					)			
					No pending or confirmed DTCs	= see sheet inhibit table -		
					Basic enable conditions met	= see sheet enable tables -		
	P2240	Lambda sensor wire diagnosis for UEGO sensor 1 bank 2 Circuit continiuity - open circuit at pin Apes	**Monitoring of abnormalities at sensor line Apes during normal ASIC operation when CJ135 in WARMUP mode** Open load at pin Apes detected by means of continuity measurements of sensor pumpcell and sensor nernst cell using current source ISQr		(Battery voltage	<= 655.34 V	continuous	2 Trips
			Difference of voltage drop at ECU-internal resistor RG in a state, where the ASIC-internal current source ISQr is connected to the sensor line "APE" and the sensor line "IPE" is directly connected to RGnd and voltage drop at ECU-internal resistor RG in a state, where all sensor lines are opened (Ug0iai - Ug0)	< E * F V	Battery voltage)	>= 10.9 V		
			Difference of voltage drop at ECU-internal resistor RG in a state, where the ASIC-internal current source ISQr is connected to the sensor line "RE" and the sensor line "IPE" is directly connected to RGnd and voltage drop at ECU-internal resistor RG in a state, where all sensor lines are opened (Ug0iei - Ug0)	>= E * F V	for time	>= 0.1 sec		
			(E) Measured amplitude of the reference pump current source	= measured value A	Upstream HO2S Sensor is heated up, which is the following conditions:	= TRUE -		
			(F) Minimum sensitivity of the continuiuity measurements to resistance RGnd	= 66 Ohm	(			
					Upstream HO2S Sensor ceramic temperature	> 789.998 deg C		
					OR			
			Aborted RAM check at ASIC shut-off when CJ135 in WARMUP mode Open load at pin Apes detected by means of continuity measurements of sensor pumpcell and sensor nernst cell using current source ISQr					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
			Result of continuity measurement of sensor pumpcell using current source ISQ (in a state, where the ASIC-internal current source ISQr is connected to the sensor line "APE" via internal switches and the sensor line "IPE" is directly connected to RGnd) is available in RAM	=	TRUE	-	Heating−up phase of the sensor is completed	=	TRUE	-		
			Short circuit to battery fault is detected at sensor lines RE/IPE/APE/MES as per last accessed ASIC diagnostic register, means	=	TRUE	-	)					
			Voltage at least at one of the sensor lines RE/IPE/APE/MES	>	9.1 to 10.3	V	Basic enable conditions met	=	see sheet enable tables	-		
			Difference of voltage drop at ECU-internal resistor RG in a state, where the ASIC-internal current source ISQr is connected to the sensor line "APE" and the sensor line "IPE" is directly connected to RGnd and voltage drop at ECU-internal resistor RG in a state, where all sensor lines are opened (Ug0iai - Ug0)	<	D * F	V	No pending or confirmed DTCs	=	see sheet inhibit tables	-		
			Difference of voltage drop at ECU-internal resistor RG in a state, where the ASIC-internal current source ISQr is connected to the sensor line "RE" and the sensor line "IPE" is directly connected to RGnd and voltage drop at ECU-internal resistor RG in a state, where all sensor lines are opened (Ug0iei - Ug0)	>=	D * F	V						
			(D) Requested amplitude of the reference pump current source	=	commanded value	A						
			(F) Minimum sensitivity of the continuiuity measurements to resistance RGnd	=	66	Ohm						
			Aborted RAM check at ASIC shut-off when CJ135 in NORMAL mode									
			Open load at pin Apes detected if countinuiuty measurement was done before abort									
			Result of continuity measurement of sensor pumpcell using current source ISQ (in a state, where the ASIC-internal current source ISQr is connected to the sensor line "APE" via internal switches and the sensor line "IPE" is directly connected to RGnd) is available in RAM	=	TRUE	-						
Exhaust gas sensor, Bank 2	P2240	Path 1 : Monitoring of prolonged activation of the blackening protection	Blackening protection is active for at least number of 16 successive checks	>	5	counts	(				10 - Continuous	2 Trips
			for time	>=	2.55	sec	Release of diagnosis report sensor 1 bank 2	=	TRUE	-		
							(					
							(					
							Battery voltage	>=	10.9	V		
							for time	>=	1.5	sec		
							and					
							Battery voltage	<=	655.34	V		
							)					
							for time	>=	0.1	sec		
							)					
							Sensor in hot state	=	TRUE	-		
							(					
							Sensor operation release, Sensor 1 Bank 2	=	TRUE	-		
							(					
							Battery voltage	<=	655.34	V		
							for time	>=	0.06	sec		
							(					
							(					
							(					
							End of start reached	=	FALSE	-		
							OR					
							Engine operation in stopping and finish state	=	FALSE	-		
							(					
							Heat quantity to dew-point end exceeds heat quantity threshold for dew-point end	=	TRUE	-		
							)					
							)					
							OR					
							(					
							Dew point end is reset for TSP sensor 1	=	FALSE	-		
							Counter for repeated cold starts dew-point end not reached sensor 1	<=	2	counts		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					(					
					(					
					Catalyst heating request by cold engine	=	TRUE	-		
					and					
					Catalyst heating request in connection with engine speed	=	TRUE	-		
					Ratio of heat quantity for dew-point end detection sensor 1 and heat quantity threshold for dew-point end detection sensor 1 bank 2 (see Look-Up Table #P2240-1)	>=	0 to 0.40625	-		
					)					
					OR					
					Ratio of heat quantity for dew-point end detection sensor 1 and heat quantity threshold for dew-point end detection sensor 1 bank 2	>=	1	-		
					)					
					)					
					)					
					)					
					(					
					(					
					(					
					Engine is stopping	=	TRUE	-		
					OR					
					Engine in stop phase	=	TRUE	-		
					)					
					for time	>=	2	sec		
					)					
					OR					
					Engine in running state	=	TRUE	-		
					)					
					OR					
					(					
					Status of fast light-off for Lambda sensor	=	TRUE	-		
					OR					
					Function demand for oxygen sensor heating before start	=	TRUE	-		
					)					
					OR					
					Dew point release requested by service tester	=	TRUE	-		
					)					
					(					
					Battery voltage	>=	10.9	V		
					for time	>=	1.5	sec		
					OR					
					Heating up of open loop completed, sensor 1, bank 2	=	TRUE	-		
					)					
					Error with heater, sensor 1, bank 2	=	FALSE	-		
					UEGO Signal ASIC mode request of sensor 1 bank 2	=	0	-		
					Battery voltage	>	9.8	V		
					for time	>=	0.5	sec		
					Battery voltage	>	8	V		
					for time	>=	0.05	sec		
					Status auxillary power relay	=	TRUE	-		
					ECU in drive state	=	TRUE	-		
					)					
					Evaluation temperature is valid, sensor 1 bank 2	=	TRUE	-		
					(					
					Temperature of ceramic sensor 1 bank 2	>	A - B	deg C		
					where					
					(A) temperature set point for heater control	=	800.006	deg C		
					(B) large temperature threshold of the control deviation of heater control	=	64.9922	deg C		
					OR					
					Heating up open loop is completed, sensor 1, bank 2	=	TRUE	-		
					(					
					Open loop ramp phase finished	=	TRUE	-		
					for time	>=	0	sec		
					OR					
					Temperature of ceramic sensor 1 bank 2	>=	789.998	deg C		
					)					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					)			
					)			
					for time	>= 0.1 sec		
					Pump current operation for sensor 1 bank 2 is active	= TRUE -		
					Counter of verifications of the actual mode of the ASIC for sensor 1 bank 2	> 30 counts		
					UEGO Signal ASIC mode request of sensor 1 bank 2	= 0 -		
					Current pump package is valid	= TRUE -		
					)			
					No pending or confirmed DTCs	= see sheet inhibit table -		
					Basic enable conditions met	= see sheet enable tables -		
		Path 2: Monitoring of negative voltage drop deviation at ECU-internal resistor Rgnd by means of continuity measurements of sensor pumpcell	Negative voltage drop deviation, sensor 1 bank 2	<= -0.15008 V	**Common conditions for voltage drop deviation:**			
			and		(			
			Negative voltage drop deviation, sensor 1 bank 2	>= 0.15008 V	Release of diagnosis report sensor 1 bank 2	= TRUE -		
					(			
					(			
					Battery voltage	>= 10.9 V		
					for time	>= 1.5 sec		
					Battery voltage	<= 655.34 V		
					)			
					for time	>= 0.1 sec		
					)			
					Sensor in hot state	= TRUE -		
					(			
					Sensor operation release, Sensor 1 bank 2	= TRUE -		
					(			
					Battery voltage	<= 655.34 V		
					for time	>= 0.06 sec		
					(			
					(			
					(			
					End of start reached	= FALSE -		
					OR			
					Engine operation in stopping and finish state	= FALSE -		
					(			
					Heat quantity to dew-point end exceeds heat quantity threshold for dew-point end	= TRUE -		
					)			
					)			
					OR			
					(			
					Dew point end is reset for TSP sensor 1	= FALSE -		
					Counter for repeated cold starts dew-point end not reached sensor 1	<= 2 counts		
					(			
					Catalyst heating request by cold engine	= TRUE -		
					Catalyst heating request in connection with engine speed	= TRUE -		
					(			
					Ratio of heat quantity for dew-point end detection sensor 1 and heat quantity threshold for dew-point end detection sensor 1 bank 2 (see Look-Up Table #P2240-1)	>= 0 to 0.40625 -		
					)			
					OR			
					Ratio of heat quantity for dew-point end detection sensor 1 and heat quantity threshold for dew-point end detection sensor 1 bank 2	>= 1 -		
					)			
					)			
					)			
					(			
					(			
					(			
					Engine is stopping	= TRUE -		
					OR			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
							Engine in stop phase	=	TRUE	-		
							)					
							for time	>=	2	sec		
							)					
							OR					
							Engine in running state	=	TRUE	-		
							)					
							OR					
							(					
							Status of fast light-off for Lambda sensor	=	TRUE	-		
							OR					
							Function demand for oxygen sensor heating before start	=	TRUE	-		
							)					
							OR					
							Dew point release requested by service tester	=	TRUE	-		
							)					
							(					
							Battery voltage	>=	10.9	V		
							for time	>=	1.5	sec		
							OR					
							Heating up of open loop completed, sensor 1, bank 2	=	TRUE	-		
							)					
							Error with heater, sensor 1, bank 2	=	FALSE	-		
							UEGO Signal ASIC mode request of sensor 1 bank 2	=	0	-		
							Battery voltage	>	9.8	V		
							for time	>=	0.5	sec		
							Battery voltage	>	8	V		
							for time	>=	0.05	sec		
							Status auxillary power relay	=	TRUE	-		
							ECU in drive state	=	TRUE	-		
							)					
							Evaluation temperature is valid, sensor 1 bank 2	=	TRUE	-		
							(					
							Temperature of ceramic sensor 1 bank 2 where	>	A - B	deg C		
							(A) temperature set point for heater control	=	800.006	deg C		
							(B) large temperature threshold of the control deviation of heater control	=	64.9922	deg C		
							OR					
							Heating up open loop is completed, sensor 1, bank 2	=	TRUE	-		
							(					
							Open loop ramp phase finished	=	TRUE	-		
							for time	>=	0	sec		
							OR					
							Temperature of ceramic sensor 1 bank 2	>=	789.998	deg C		
							)					
							)					
							)					
							for time	>=	0.1	sec		
							Pump current operation for sensor 1 bank 2 is active	=	TRUE	-		
							Counter of verifications of the actual mode of the ASIC for sensor 1 bank 2	>	30	counts		
							UEGO Signal ASIC mode request of sensor 1 bank 2	!=	0	-		
							Current pump package is valid	=	TRUE	-		
							)					
							No pending or confirmed DTCs	=	see sheet inhibit table	-		
							Basic enable conditions met	=	see sheet enable tables	-		
		Path 3: Monitoring of positive voltage drop deviation at ECU-internal resistor Rgnd by means of continuity measurements of sensor pumpcell	Positive voltage drop deviation, sensor 1 bank 2	<=	-0.15008	V	**Common conditions for voltage drop deviation**	=	TRUE	-		
			Positive voltage drop deviation, sensor 1 bank 2	>=	0.15008	V	Basic enable conditions met	=	see sheet enable tables	-		
		Path 4: Monitoring of the non-availability of the sensor signals for a prolonged duration	(				(					
			Physical release conditions for oxygen sensor are fulfilled	=	FALSE	-	Release of diagnosis report sensor 1 bank 2	=	TRUE	-		
			OR				(					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
			Oxygen sensor signals are of high precision	=	FALSE	-	(					
			)				Battery voltage	>=	10.9	V		
			for time	>=	10	sec	for time	>=	1.5	sec		
							Battery voltage	<=	655.34	V		
							)					
							for time	>=	0.1	sec		
							)					
							Sensor in hot state	=	TRUE	-		
							(					
							Sensor operation release, Sensor 1 bank 2	=	TRUE	-		
							(					
							Battery voltage	<=	655.34	V		
							for time	>=	0.06	sec		
							(					
							(					
							(					
							End of start reached	=	FALSE	-		
							OR					
							Engine operation in stopping and finish state	=	FALSE	-		
							(					
							Heat quantity to dew-point end exceeds heat quantity threshold for dew-point end	=	TRUE	-		
							)					
							)					
							OR					
							(					
							Dew point end is reset for TSP sensor 1	=	FALSE	-		
							Counter for repeated cold starts dew-point end not reached sensor 1	<=	2	counts		
							(					
							Catalyst heating request by cold engine	=	TRUE	-		
							Catalyst heating request in connection with engine speed	=	TRUE	-		
							(					
							Ratio of heat quantity for dew-point end detection sensor 1 and heat quantity threshold for dew-point end detection sensor 1 bank 2 (see Look-Up Table #P2240-1)	>=	0 to 0.40625	-		
							)					
							OR					
							Ratio of heat quantity for dew-point end detection sensor 1 and heat quantity threshold for dew-point end detection sensor 1 bank 2	>=	1	-		
							)					
							)					
							)					
							(					
							(					
							(					
							Engine is stopping	=	TRUE	-		
							OR					
							Engine in stop phase	=	TRUE	-		
							)					
							for time	>=	2	sec		
							)					
							OR					
							Engine in running state	=	TRUE	-		
							)					
							OR					
							(					
							Status of fast light-off for Lambda sensor	=	TRUE	-		
							OR					
							Function demand for oxygen sensor heating before start	=	TRUE	-		
							)					
							OR					
							Dew point release requested by service tester	=	TRUE	-		
							)					
							(					
							Battery voltage	>=	10.9	V		
							for time	>=	1.5	sec		
							OR					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Heating up of open loop completed, sensor 1, bank 2	= TRUE -		
					)			
					Error with heater, sensor 1, bank 2	= FALSE -		
					UEGO Signal ASIC mode request of sensor 1 bank 2	= 0 -		
					Battery voltage	> 9.8 V		
					for time	>= 0.5 sec		
					Battery voltage	> 8 V		
					for time	>= 0.05 sec		
					Status auxillary power relay	= TRUE -		
					ECU in drive state	= TRUE -		
					)			
					Evaluation temperature is valid, sensor 1 bank 2	= TRUE -		
					(			
					Temperature of ceramic sensor 1 bank 2 where	> A - B deg C		
					(A) temperature set point for heater control	= 800.006 deg C		
					(B) large temperature threshold of the control deviation of heater control	= 64.9922 deg C		
					OR			
					Heating up open loop is completed, sensor 1, bank 2	= TRUE -		
					(			
					Open loop ramp phase finished	= TRUE -		
					for time	>= 0 sec		
					OR			
					Temperature of ceramic sensor 1 bank 2	>= 789.998 deg C		
					)			
					)			
					)			
					for time	>= 0.1 sec		
					Pump current operation for sensor 1 bank 2 is active	= TRUE -		
					Counter of verifications of the actual mode of the ASIC for sensor 1 bank 2	> 30 -		
					UEGO Signal ASIC mode request of sensor 1 bank 2	= 0 -		
					Current pump package is valid	= TRUE -		
					)			
					No pending or confirmed DTCs	= see sheet inhibit table -		
					Basic enable conditions met	= see sheet enable tables -		
	P2251	Lambda sensor wire diagnosis for UEGO sensor 1 bank 1 Circuit countinuiuty - open circuit at pin IPE	**Monitoring of abnormalities at sensor line IPE during normal ASIC operation when CJ135 is in NORMAL mode** Open load at pin IPE detected by means of continuity measurements of sensor pumpcell during negative pump current pulse		(Battery voltage	<= 655.34 V	continuous	2 Trips
			Result of continuity measurement of sensor pumpcell using current source ISQ (in a state, where the ASIC-internal current source ISQr is connected to the sensor line "APE" via internal switches and the sensor line "IPE" is directly connected to RGnd) is available in RAM	= FALSE -	Battery voltage)	>= 10.9 V		
			(		for time	>= 0.1 sec		
			If control deviation of heater control of upstream HO2S Sensor (HO2S Sensor heater control is inaccurate)	>= 64.9922 deg C	Upstream HO2S Sensor is heated up, which is the following conditions:	= TRUE -		
			for time	>= 0.1 sec	(			
			(		Upstream HO2S Sensor ceramic temperature	> 789.998 deg C		
			Negated difference of voltage drop at ECU-internal resistor RGnd in a state, where only the sensor line "APE" is directly connected to RGnd and voltage drop at ECU-internal resistor RGnd in a state, where all sensor lines are opened (Ug0 - Uga)	> 0.5008 V	OR			
			for time	>= 0.1 sec	Heating-up phase of the sensor is completed	= TRUE -		
			OR		)			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
			Negated difference of voltage drop at ECU-internal resistor RGnd in a state, where only the sensor line "IPE" is directly connected to RGnd and voltage drop at ECU-internal resistor RGnd in a state, where all sensor lines are opened (Ug0 - Ugi)	>	0.5008	V	Basic enable conditions met	=	see sheet enable tables	-		
			for time	>=	0.1	sec	No pending or confirmed DTCs	=	see sheet inhibit tables	-		
			)									
			OR									
			If control deviation of heater control of upstream HO2S Sensor (HO2S Sensor heater control is accurate)	<	64.9922	deg C						
			(									
			Negated difference of voltage drop at ECU-internal resistor RGnd in a state, where only the sensor line "APE" is directly connected to RGnd and voltage drop at ECU-internal resistor RGnd in a state, where all sensor lines are opened (Ug0 - Uga)	>	A + (B * C)							
			for time	>=	0.1	sec						
			OR									
			Negated difference of voltage drop at ECU-internal resistor RGnd in a state, where only the sensor line "IPE" is directly connected to RGnd and voltage drop at ECU-internal resistor RGnd in a state, where all sensor lines are opened (Ug0 - Ugi)	>	A + (B * C)							
			for time	>=	0.1	sec						
			)									
			(A) Initial threshold for negative voltage deviation during Delta Ugx check		0.08992	V						
			(B) Voltage step for negative voltage deviation in delta Ugx check		0.08	V						
			(C) Number of negative overshoots of continuity measurement values Ugx		measured value							
			)									
			Monitoring of abnormalities at sensor line IPE during normal ASIC operation when CJ135 is in WARMUP mode									
			Open load at pin IPE detected by means of continuity measurements of sensor pumpcell and sensor nernst cell using current source ISQr									
			Difference of voltage drop at ECU-internal resistor RG in a state, where the ASIC-internal current source ISQr is connected to the sensor line "APE" and the sensor line "IPE" is directly connected to RGnd and voltage drop at ECU-internal resistor RG in a state, where all sensor lines are opened (Ug0iai - Ug0)	<	E * F							
			Difference of voltage drop at ECU-internal resistor RG in a state, where the ASIC-internal current source ISQr is connected to the sensor line "RE" and the sensor line "IPE" is directly connected to RGnd and voltage drop at ECU-internal resistor RG in a state, where all sensor lines are opened (Ug0iei - Ug0)	<	E * F							
			(E) Measured amplitude of the reference pump current source	=	measured value							
			(F) Minimum sensitivity of the continuiuity measurements to resistance RGnd	=	66	Ohm						
			Aborted RAM check at ASIC shut-off when CJ135 in WARMUP mode									
			Open load at pin IPE detected by means of continuity measurements of sensor pumpcell and sensor nernst cell using current source ISQr									
			Result of continuity measurement of sensor pumpcell using current source ISQ (in a state, where the ASIC-internal current source ISQr is connected to the sensor line "APE" via internal switches and the sensor line "IPE" is directly connected to RGnd) is available in RAM	=	TRUE	-						
			Voltage at least at one of the sensor lines (RE/IPE/APE/MES)	>	9.1 to 10.3	V						

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
			Difference of voltage drop at ECU-internal resistor RG in a state, where the ASIC-internal current source ISQr is connected to the sensor line "APE" and the sensor line "IPE" is directly connected to RGnd and voltage drop at ECU-internal resistor RG in a state, where all sensor lines are opened (Ug0iai - Ug0)	<	D * F							
			Difference of voltage drop at ECU-internal resistor RG in a state, where the ASIC-internal current source ISQr is connected to the sensor line "RE" and the sensor line "IPE" is directly connected to RGnd and voltage drop at ECU-internal resistor RG in a state, where all sensor lines are opened (Ug0iei - Ug0)	<	D * F							
			(D) Requested amplitude of the reference pump current source	=	commanded value							
			(F) Minimum sensitivity of the continuiuity measurements to resistance RGnd	=	66	Ohm						
			<u>Aborted RAM check at ASIC shut-off when CJ135 in NORMAL mode</u> Open load at pin IPE detected if no countinuiuty measurement was done before ASIC abort									
			Result of continuity measurement of sensor pumpcell using current source ISQ (in a state, where the ASIC-internal current source ISQr is connected to the sensor line "APE" via internal switches and the sensor line "IPE" is directly connected to RGnd) is available in RAM	=	FALSE	-						
	P2254	Lambda sensor wire diagnosis for UEGO sensor 1 bank 2 Circuit countinuiuty - open circuit at pin IPE	**Monitoring of abnormalities at sensor line IPE during normal ASIC operation when CJ135 is in NORMAL mode** Open load at pin IPE detected by means of continuity measurements of sensor pumpcell during negative pump current pulse				(Battery voltage	<=	655.34	V	continuous	2 Trips
			Result of continuity measurement of sensor pumpcell using current source ISQ (in a state, where the ASIC-internal current source ISQr is connected to the sensor line "APE" via internal switches and the sensor line "IPE" is directly connected to RGnd) is available in RAM	=	FALSE	-	Battery voltage)	>=	10.9	V		
			(				for time	>=	0.1	sec		
			If control deviation of heater control of upstream HO2S Sensor (HO2S Sensor heater control is inaccurate)	>=	64.9922	deg C	Upstream HO2S Sensor is heated up, which is the following conditions:	=	TRUE	-		
			for time (	>=	0.1	sec	(Upstream HO2S Sensor ceramic temperature	>	789.998	deg C		
			Negated difference of voltage drop at ECU-internal resistor RGnd in a state, where only the sensor line "APE" is directly connected to RGnd and voltage drop at ECU-internal resistor RGnd in a state, where all sensor lines are opened (Ug0 - Uga)	>	0.5008	V	OR					
			for time	>=	0.1	sec	Heating−up phase of the sensor is completed)	=	TRUE	-		
			OR Negated difference of voltage drop at ECU-internal resistor RGnd in a state, where only the sensor line "IPE" is directly connected to RGnd and voltage drop at ECU-internal resistor RGnd in a state, where all sensor lines are opened (Ug0 - Ugi)	>	0.5008	V	Basic enable conditions met	=	see sheet enable tables	-		
			for time	>=	0.1	sec	No pending or confirmed DTCs	=	see sheet inhibit tables	-		
			) OR									
			If control deviation of heater control of upstream HO2S Sensor (HO2S Sensor heater control is accurate) (	<	64.9922	deg C						

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
			Negated difference of voltage drop at ECU-internal resistor RGnd in a state, where only the sensor line "APE" is directly connected to RGnd and voltage drop at ECU-internal resistor RGnd in a state, where all sensor lines are opened (Ug0 - Uga)	> A + (B * C)				
			for time	>= 0.1 sec				
			OR					
			Negated difference of voltage drop at ECU-internal resistor RGnd in a state, where only the sensor line "IPE" is directly connected to RGnd and voltage drop at ECU-internal resistor RGnd in a state, where all sensor lines are opened (Ug0 - Ugi)	> A + (B * C)				
			for time	>= 0.1 sec				
			)					
			(A) Initial threshold for negative voltage deviation during Delta Ugx check	0.08992 V				
			(B) Voltage step for negative voltage deviation in delta Ugx check	0.08 V				
			(C) Number of negative overshoots of continuity measurement values Ugx	measured value				
			)					
			Monitoring of abnormalities at sensor line IPE during normal ASIC operation when CJ135 is in WARMUP mode Open load at pin IPE detected by means of continuity measurements of sensor pumpcell and sensor nernst cell using current source ISQr					
			Difference of voltage drop at ECU-internal resistor RG in a state, where the ASIC-internal current source ISQr is connected to the sensor line "APE" and the sensor line "IPE" is directly connected to RGnd and voltage drop at ECU-internal resistor RG in a state, where all sensor lines are opened (Ug0iai - Ug0)	< E * F				
			Difference of voltage drop at ECU-internal resistor RG in a state, where the ASIC-internal current source ISQr is connected to the sensor line "RE" and the sensor line "IPE" is directly connected to RGnd and voltage drop at ECU-internal resistor RG in a state, where all sensor lines are opened (Ug0iei - Ug0)	< E * F				
			(E) Measured amplitude of the reference pump current source	= measured value A				
			(F) Minimum sensitivity of the continuiuity measurements to resistance RGnd	= 66 Ohm				
			Aborted RAM check at ASIC shut-off when CJ135 in WARMUP mode Open load at pin IPE detected by means of continuity measurements of sensor pumpcell and sensor nernst cell using current source ISQr					
			Result of continuity measurement of sensor pumpcell using current source ISQ (in a state, where the ASIC-internal current source ISQr is connected to the sensor line "APE" via internal switches and the sensor line "IPE" is directly connected to RGnd) is available in RAM	= TRUE -				
			Voltage at least at one of the sensor lines (RE/IPE/APE/MES)	> 9.1 to 10.3 V				
			Difference of voltage drop at ECU-internal resistor RG in a state, where the ASIC-internal current source ISQr is connected to the sensor line "APE" and the sensor line "IPE" is directly connected to RGnd and voltage drop at ECU-internal resistor RG in a state, where all sensor lines are opened (Ug0iai - Ug0)	< D * F				
			Difference of voltage drop at ECU-internal resistor RG in a state, where the ASIC-internal current source ISQr is connected to the sensor line "RE" and the sensor line "IPE" is directly connected to RGnd and voltage drop at ECU-internal resistor RG in a state, where all sensor lines are opened (Ug0iei - Ug0)	< D * F				

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
			(D) Requested amplitude of the reference pump current source (F) Minimum sensitivity of the continuiuity measurements to resistance RGnd **Aborted RAM check at ASIC shut-off when CJ135 in NORMAL mode** Open load at pin IPE detected if no countinuiuty measurement was done before ASIC abort Result of continuity measurement of sensor pumpcell using current source ISQ (in a state, where the ASIC-internal current source ISQr is connected to the sensor line "APE" via internal switches and the sensor line "IPE" is directly connected to RGnd) is available in RAM	= commanded value = 66 Ohm = FALSE -				
	P2626	Lambda sensor wire diagnosis for UEGO sensor 1 bank 1 Circuit countinuity - open circuit at Rcmp (compensation resistor)	Calculated parallel resistance between APE and MES for UEGO sensor 1 bank 1	> 240 Ohm	(Battery voltage Battery voltage) for time Upstream HO2S Sensor is heated up, which is the following conditions: (Upstream HO2S Sensor ceramic temperature OR Heating-up phase of the sensor is completed) Last packet transfer aborted of sensor 1 bank 1 Requested mode of UEGO sensor 1 Bank 1 is in SWITCHON mode Counter of verifications of the actual mode of the ASIC for sensor 1 bank 1 Basic enable conditions met No pending or confirmed DTCs	<= 655.34 V >= 10.9 V >= 0.1 sec = TRUE - > 789.998 deg C = TRUE - = FALSE - = TRUE - >= 10 counts = see sheet enable tables - = see sheet inhibit tables -	continuous	2 Trips
	P2629	Lambda sensor wire diagnosis for UEGO sensor 1 bank 2 Circuit countinuity - open circuit at Rcmp (compensation resistor)	Calculated parallel resistance between APE and MES for UEGO sensor 1 bank 2	> 240 Ohm	(Battery voltage Battery voltage) for time Upstream HO2S Sensor is heated up, which is the following conditions: (Upstream HO2S Sensor ceramic temperature OR Heating-up phase of the sensor is completed) Last packet transfer aborted of sensor 1 bank 2 Requested mode of UEGO sensor 1 Bank 2 is in SWITCHON mode Counter of verifications of the actual mode of the ASIC for sensor 1 bank 2 Basic enable conditions met No pending or confirmed DTCs	<= 655.34 V >= 10.9 V >= 0.1 sec = TRUE - > 789.998 deg C = TRUE - = FALSE - = TRUE - >= 10 counts = see sheet enable tables - = see sheet inhibit tables -	continuous	2 Trips
Upstream Exhaust Gas Sensor	P0132	Lambda sensor wire diagnosis for sensor 1 bank 1 Circuit continuity - short circuit to battery	**Path1:** **Monitoring of abnormalities at sensor lines RE/IPE/APE/MES during the normal ASIC operation when CJ135 is in IDLE mode** Short circuit to battery detected by means of voltage monitoring at sensor lines RE/IPE/APE/MES as per last accessed ASIC diagnostic register Voltage at least at one of the sensor lines RE/IPE/APE/MES	 > 9.1 to 10.3 V	(Battery voltage and	<= 655.34 V	continuous	2 Trips

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
							Battery voltage	>=	10.9	V		
							)					
							for time	>=	0.1	sec		
							Last packet transfer aborted of sensor 1 bank 1	=	FALSE	-		
							Requested mode of UEGO Sensor 1 Bank 1	=	TRUE	-		
							Validity of the diagnosis register of the ASIC of sensor 1 bank 1	=	TRUE	-		
							Basic enable conditions met	=	see sheet enable tables	-		
							No pending or confirmed DTCs	=	see sheet inhibit tables	-		
			Path2 : **Monitoring of abnormalities at sensor lines APE/IPE during the normal ASIC operation when CJ135 is in SWITCHON or WARMUP mode** Short circuit to battery detected by means of contact measurements at sensor lines APE/IPE				(Battery voltage	<=	655.34	V		
			Difference of voltage drop at ECU-internal resistor RGnd in a state, where only the sensor line "APE" is directly connected to RGnd (no current flows through the sensor) and voltage drop at ECU-internal resistor RGnd in a state, where all sensor lines are opened (Ug0a - Ug0)	>	0.07008	V	and					
			OR				Battery voltage	>=	10.9	V		
							)					
			Difference of voltage drop at ECU-internal resistor RGnd in a state, where only the sensor line "IPE" is directly connected to RGnd (no current flows through the sensor) and voltage drop at ECU-internal resistor RGnd in a state, where all sensor lines are opened (Ug0i - Ug0)	>	0.07008	V	for time	>=	0.1	sec		
			OR				Last packet transfer aborted of sensor 1 bank 1	=	FALSE	-		
			(				Requested mode of UEGO Sensor 1 Bank 1 is in SWITCHON mode or WARMUP mode	=	TRUE	-		
			Clamping structure of the nerst cell active for sensor 1 bank 1	=	TRUE	-	Counter of verifications of the actual mode of the ASIC for sensor 1 bank 1	>=	10	counts		
			Difference of voltage drop at ECU-internal resistor RGnd in a state, where only the sensor line "RE" is directly connected to RGnd (no current flows through the sensor) and voltage drop at ECU-internal resistor RGnd in a state, where all sensor lines are opened (Ug0e - Ug0)	>	0.07008	V	Basic enable conditions met	=	see sheet enable tables	-		
			)				No pending or confirmed DTCs	=	see sheet inhibit tables	-		
			Path 3 : **Aborted RAM check at ASIC shut-off when CJ135 not in IDLE mode** Short circuit to battery detected by means of voltage monitoring at RGnd resistor or by means of contact measurements at sensor lines APE/IPE as per last accessed ASIC diagnostic register				(Battery voltage	<=	655.34	V		
			Voltage at RGnd resistor	>	4	V	and					
			OR				Battery voltage	>=	10.9	V		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
			Difference of voltage drop at ECU-internal resistor RGnd in a state, where only the sensor line "APE" is directly connected to RGnd (no current flows through the sensor) and voltage drop at ECU-internal resistor RGnd in a state, where all sensor lines are opened (Ug0a - Ug0)	> 0.0438 V	)			
			OR		for time	>= 0.1 sec		
			Difference of voltage drop at ECU-internal resistor RGnd in a state, where only the sensor line "IPE" is directly connected to RGnd (no current flows through the sensor) and voltage drop at ECU-internal resistor RGnd in a state, where all sensor lines are opened (Ug0i - Ug0)	> 0.0438 V	Measured CJ135 Mode sensor 1 bank 1 is not in IDLE mode	= TRUE -		
			OR		Last packet transfer aborted of sensor 1 bank	= TRUE -		
			Short circuit to battery detected at sensor lines IPE/APE/MES or by checking availability of continuity measurements in last accessed ASIC diagnostic register		Basic enable conditions met	= see sheet enable tables -		
			Voltage at least at one of the sensor lines RE/IPE/APE/MES	> 9.1 to 10.3 V	No pending or confirmed DTCs	= see sheet inhibit tables -		
			Path 4: Aborted RAM check at ASIC shut-off when CJ135 in WARMUP mode Short circuit to battery detected at sensor lines IPE/APE/MES or by checking availability of continuity measurements in last accessed ASIC diagnostic register		(Battery voltage	<= 655.34 V		
			Voltage at least at one of the sensor lines IPE/APE/MES	> 9.1 to 10.3 V	and			
			OR		Battery voltage	>= 10.9 V		
			(	= TRUE -	)			
			Upstream HO2S Sensor is heated up, means					
			(		for time	>= 0.1 sec		
			Upstream HO2S Sensor ceramic temperature	> 789.998 deg C	Measured CJ135 Mode sensor 1 bank 1 is in WARMUP mode	= TRUE -		
			OR		Last packet transfer aborted of sensor 1 bank 1	= TRUE -		
			Heating−up phase of the sensor is completed	= TRUE -	Basic enable conditions met	= see sheet enable tables -		
			)		No pending or confirmed DTCs	= see sheet inhibit tables -		
			AND					
			(					
			Results of both continuity measurements of sensor pumpcell using current source ISQr are available in RAM accessed ASIC diagnostic register	= FALSE -				
			OR					
			Aborted RAM check at ASIC shut-off when CJ135 in WARMUP mode					
			Short circuit to battery detected as per last accessed ASIC diagnostic register					
			Results of both continuity measurement of sensor pumpcell using current source ISQr are available in RAM accessed ASIC diagnistic register	= TRUE -				
			Voltage at least at one of the sensor lines (RE/IPE/APE/MES)	> 9.1 to 10.3 V				
			AND					
			(					
			Difference of voltage drop at ECU-internal resistor RGnd in a state, where the ASIC -internal current source ISQr is connected to the sensor line "APE" and the sensor line "IPE" is directly connected to RGnd (current flows through the sensor and RGnd) and voltage drop at ECU-internal resistor RGnd in a state, where all sensor lines are opened (Ug0iai-Ug0)	>= D * F V				
			AND					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
			Difference of voltage drop at ECU-internal resistor RGnd in a state, where the ASIC -internal current source ISQr is connected to the sensor line "RE" and the sensor line "IPE" is directly connected to RGnd (current flows through the sensor and RGnd) and voltage drop at ECU-internal resistor RGnd in a state, where all sensor lines are opened (Ug0iei-Ug0)	>= D * F V				
			(D) Requested amplitude of the reference pump current source ISQr	= commanded value A				
			(F) Minimum sensitivity of the continuiuity measurements to resistance RGnd)))	= 66 Ohm				
	P0152	Lambda sensor wire diagnosis for sensor 1 bank 2 Circuit continuity - short circuit to battery	**Path1: Monitoring of abnormalities at sensor lines RE/IPE/APE/MES during the normal ASIC operation when CJ135 is in IDLE mode** Short circuit to battery detected by means of voltage monitoring at sensor lines RE/IPE/APE/MES as per last accessed ASIC diagnostic register		(Battery voltage	<= 655.34 V	0.5 sec continuous	2 Trips
			Voltage at least at one of the sensor lines RE/IPE/APE/MES	> 9.1 to 10.3 V	and			
					Battery voltage)	>= 10.9 V		
					for time	>= 0.1 sec		
					Last packet transfer aborted of sensor 1 bank 2	= FALSE -		
					Requested mode of UEGO sensor 1 bank 2 i	= TRUE -		
					Validity of the diagnosis register of the ASIC of sensor 1 bank 2	= TRUE -		
					Basic enable conditions met	= see sheet enable tables -		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
			Path2 : Monitoring of abnormalities at sensor lines APE/IPE during the normal ASIC operation when CJ135 is in SWITCHON or WARMUP mode Short circuit to battery detected by means of contact measurements at sensor lines APE/IPE		(Battery voltage	<= 655.34 V		
			Difference of voltage drop at ECU-internal resistor RGnd in a state, where only the sensor line "APE" is directly connected to RGnd and voltage drop at ECU-internal resistor RGnd in a state, where all sensor lines are opened (Ug0a - Ug0)	> 0.07008 V	and			
			OR		Battery voltage)	>= 10.9 V		
			Difference of voltage drop at ECU-internal resistor RGnd in a state, where only the sensor line "IPE" is directly connected to RGnd and voltage drop at ECU-internal resistor RGnd in a state, where all sensor lines are opened (Ug0i - Ug0)	> 0.07008 V	for time	>= 0.1 sec		
					Last packet transfer aborted of sensor 1 bank 2	= FALSE -		
			OR		Requested mode of UEGO Sensor 1 Bank 2 is in SWITCHON or WARMUP mode	= TRUE -		
			Clamping structure of the nerst cell active for sensor 1 bank 2	= TRUE -	Counter of verifications of the actual mode of the ASIC for sensor 1 bank 2	>= 10 counts		
			Difference of voltage drop at ECU-internal resistor RGnd in a state, where only the sensor line "RE" is directly connected to RGnd and voltage drop at ECU-internal resistor RGnd in a state, where all sensor lines are opened (Ug0e - Ug0)	> 0.07008 V	Basic enable conditions met	= see sheet enable tables -		
					No pending or confirmed DTCs	= see sheet inhibit tables -		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
			Path 3 : **Aborted RAM check at ASIC shut-off when CJ135 not in IDLE mode** Short circuit to battery detected by means of voltage monitoring at RGnd resistor or by means of contact measurements at sensor lines APE/IPE as per last accessed ASIC diagnostic register		(Battery voltage	<= 655.34 V		
			Voltage at RGnd resistor	> 4 V	and Battery voltage)	<= 10.9 V		
			OR		for time	>= 0.1 sec		
			Difference of voltage drop at ECU-internal resistor RGnd in a state, where only the sensor line "APE" is directly connected to RGnd (no current flows through the sensor) and voltage drop at ECU-internal resistor RGnd in a state, where all sensor lines are opened (Ug0a - Ug0)	> 0.0438 V	Measured CJ135 Mode sensor 1 bank 2 is not in IDLE mode	= TRUE -		
			OR		Last packet transfer aborted of sensor 1 bank 2	= TRUE -		
			Difference of voltage drop at ECU-internal resistor RGnd in a state, where only the sensor line "IPE" is directly connected to RGnd (no current flows through the sensor) and voltage drop at ECU-internal resistor RGnd in a state, where all sensor lines are opened (Ug0i - Ug0)	> 0.0438 V	Basic enable conditions met	= see sheet enable tables -		
			OR		No pending or confirmed DTCs	= see sheet inhibit tables -		
			Short circuit to battery detected at sensor lines IPE/APE/MES or by checking availability of continuity measurements in last accessed ASIC diagnostic register					
			Voltage at least at one of the sensor lines RE/IPE/APE/MES	> 9.1 to 10.3 V				
			Path4: **Aborted RAM check at ASIC shut-off when CJ135 in WARMUP mode** Short circuit to battery detected at sensor lines IPE/APE/MES or by checking availability of continuity measurements in last accessed ASIC diagnostic register		(Battery voltage	<= 655.34 V		
			Voltage at least at one of the sensor lines IPE/APE/MES	> 9.1 to 10.3 V	and			
			OR		Battery voltage)	>= 10.9 V		
			(Upstream HO2S Sensor is heated up, means	= TRUE -	for time	>= 0.1 sec		
			(		Measured CJ135 Mode sensor 1 bank 2 is in WARMUP mode	= TRUE -		
			Upstream HO2S Sensor ceramic temperature	> 789.998 deg C	Last packet transfer aborted of sensor 1 bank 2	= TRUE -		
			OR		Basic enable conditions met	= see sheet enable tables -		
			Heating−up phase of the sensor is completed	= TRUE -	No pending or confirmed DTCs	= see sheet inhibit tables -		
			) AND (					
			Results of both continuity measurements of sensor pumpcell using current source ISQr are available in RAM accessed ASIC diagnostic register	= FALSE -				
			OR Aborted RAM check at ASIC shut-off when CJ135 in WARMUP mode Short circuit to battery detected as per last accessed ASIC diagnostic register					
			Results of both continuity measurement of sensor pumpcell using current source ISQr are available in RAM accessed ASIC diagnistic register	= TRUE -				
			Voltage at least at one of the sensor lines (RE/IPE/APE/MES) AND (	> 9.1 to 10.3 V				

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
			Difference of voltage drop at ECU-internal resistor RGnd in a state, where the ASIC -internal current source ISQr is connected to the sensor line "APE" and the sensor line "IPE" is directly connected to RGnd (current flows through the sensor and RGnd) and voltage drop at ECU-internal resistor RGnd in a state, where all sensor lines are opened (Ug0iai-Ug0)	>= D * F V				
			OR					
			Difference of voltage drop at ECU-internal resistor RGnd in a state, where the ASIC -internal current source ISQr is connected to the sensor line "RE" and the sensor line "IPE" is directly connected to RGnd (current flows through the sensor and RGnd) and voltage drop at ECU-internal resistor RGnd in a state, where all sensor lines are opened (Ug0iei-Ug0)	>= D * F V				
			(D) Requested amplitude of the reference pump current source of UEGO sensor 1 Bank 2	= commanded value A				
			(F) Minimum sensitivity of the continuiuity measurements to resistance RGnd	= 66 Ohm				
			)))					
Upstream Exhaust Gas Sensor	P0131	Lambda sensor wire diagnosis for sensor 1 bank 1 Circuit continuity - short circuit to ground	**Path 1:** **Monitoring of abnormalities at sensor lines RE/APE/IPE during the normal ASIC operation when CJ135 in IDLE mode** Short circuit to ground detected at sensor lines RE/IPE/APE/MES by means of voltage monitoring		(		continuous	3rd cycle
			Voltage at least at one of the sensor lines RE/IPE/APE/MES	< -0.15 V	Battery voltage and	>= 10.9 V		
			where RE: Nernst voltage (reference voltage) IPE: Virtual ground (inner electrode) APE: Pumping current (external electrode) MES: Trim current (output sensor line trim resistance)		Battery voltage)	<= 655.34 V		
					for time	>= 0.1 sec		
					Requested mode of UEGO Sensor 1 bank 1 in IDLE mode	= TRUE -		
					Validity of the diagnosis register of the ASIC c	= TRUE -		
					Last packet transfer aborted of sensor 1 bank	= FALSE -		
					Internal Control Module O2 Sensor Processor Performance Bank 1	= FALSE -		
					Control Module Processor Serial Peripheral Interface Bus 3	= FALSE -		
					Basic enable conditions met	= see sheet enable tables -		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
			Path 2: **Aborted RAM check at ASIC shut-off when CJ135 in SWITCHON or WARMUP mode** Short circuit to ground detected by means of voltage monitoring at sensor lines RE/IPE/APE/MES or by means of contact measurements at sensor line APE/IPE as per last accessed ASIC diagnostic register		(			
			(Voltage at least at one of the sensor lines RE/IPE/APE/MES	< -0.15 V	Battery voltage	>= 10.9 V		
			OR		and			
			Negated difference of voltage drop at ECU-internal resistor RGnd in a state, where only the sensor line "APE" is directly connected to RGnd (no current flows through the sensor) and voltage drop at ECU-internal resistor RGnd in a state, where all sensor lines are opened (Ug0 - Ug0a)	> 0.0438 V	Battery voltage	<= 655.34 V		
			OR		)			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
			Negated difference of voltage drop at ECU-internal resistor RGnd in a state, where only the sensor line "IPE" is directly connected to RGnd (no current flows through the sensor) and voltage drop at ECU-internal resistor RGnd in a state, where all sensor lines are opened (Ug0 - Ug0i))	>	0.0438	V	for time	>=	0.1	sec		
							Requested mode of UEGO Sensor 1 bank 1 in SWITCH ON mode or WARM UP mode	=	TRUE	-		
							Last packet transfer aborted of sensor 1 bank	=	TRUE	-		
							Internal Control Module O2 Sensor Processor Performance Bank 1	=	FALSE	-		
							Control Module Processor Serial Peripheral Interface Bus 3	=	FALSE	-		
							Basic enable conditions met	=	see sheet enable tables	-		
							No pending or confirmed DTCs	=	see sheet inhibit tables	-		
			Path 3: Monitoring of abnormalities at sensor lines RE/APE/IPE during the normal ASIC operation when CJ135 is in SWITCHON or WARMUP mode Short circuit to ground detected by means of contact measurements at sensor lines APE/RE//IPE				(					
			(Negated difference of voltage drop at ECU-internal resistor RGnd in a state, where only the sensor line "APE" is directly connected to RGnd (no current flows through the sensor) and voltage drop at ECU-internal resistor RGnd in a state, where all sensor lines are opened (Ug0 - Ug0a)	>	0.07008	V	Battery voltage	>=	10.9	V		
			OR Negated difference of voltage drop at ECU-internal resistor RGnd in a state, where only the sensor line "RE" is directly connected to RGnd (no current flows through the sensor) and voltage drop at ECU-internal resistor RGnd in a state, where all sensor lines are opened (Ug0 - Ug0e)	>	0.07008	V	and Battery voltage	<=	655.34	V		
			OR Negated difference of voltage drop at ECU-internal resistor RGnd in a state, where only the sensor line "IPE" is directly connected to RGnd (no current flows through the sensor) and voltage drop at ECU-internal resistor RGnd in a state, where all sensor lines are opened (Ug0 - Ug0i)	>	0.07008	V	) for time	>=	0.1	sec		
			)				(Requested mode of UEGO Sensor 1 bank 1 in SWITCHON mode or WARMUP mode	=	TRUE	-		
							for number of counts)	>=	10	counts		
							Last packet transfer aborted of sensor 1 bank	=	FALSE	-		
							Internal Control Module O2 Sensor Processor Performance Bank 1	=	FALSE	-		
							Control Module Processor Serial Peripheral Interface Bus 3	=	FALSE	-		
							Basic enable conditions met	=	see sheet enable tables	-		
							No pending or confirmed DTCs	=	see sheet inhibit tables	-		
	P0151	Lambda sensor wire diagnosis for sensor 1 bank 2 Circuit continuity - short circuit to ground	**Path 1: Monitoring of abnormalities at sensor lines RE/APE/IPE during the normal ASIC operation when CJ135 in IDLE mode** Short circuit to ground detected at sensor lines RE/IPE/APE/MES by means of voltage monitoring				(				continuous	3rd cycle
							Battery voltage	>=	10.9	V		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
			Voltage at least at one of the sensor lines RE/IPE/APE/MES	< -0.15 V	and			
					Battery voltage	<= 655.34 V		
					)			
			where RE: Nernst voltage (reference voltage) IPE: Virtual ground (inner electrode) APE: Pumping current (external electrode) MES: Trim current (output sensor line trim resistance)					
					for time	>= 0.1 sec		
					Requested mode of UEGO Sensor 1 bank 2 in IDLE mode	= TRUE -		
					Validity of the diagnosis register of the ASIC o	= TRUE -		
					Last packet transfer aborted of sensor 1 bank	= FALSE -		
					Internal Control Module O2 Sensor Processor Performance Bank 2	= FALSE -		
					Control Module Processor Serial Peripheral Interface Bus 4	= FALSE -		
					Basic enable conditions met	= see sheet enable tables -		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
			Path 2: **Aborted RAM check at ASIC shut-off when CJ135 in SWITCHON or WARMUP mode** Short circuit to ground detected by means of voltage monitoring at sensor lines RE/IPE/APE/MES or by means of contact measurements at sensor line APE/IPE as per last accessed ASIC diagnostic register		(			
			(Voltage at least at one of the sensor lines RE/IPE/APE/MES	< -0.15 V	Battery voltage	>= 10.9 V		
			OR		and			
			Negated difference of voltage drop at ECU-internal resistor RGnd in a state, where only the sensor line "APE" is directly connected to RGnd (no current flows through the sensor) and voltage drop at ECU-internal resistor RGnd in a state, where all sensor lines are opened (Ug0 - Ug0a)	> 0.0438 V	Battery voltage	<= 655.34 V		
			OR		)			
			Negated difference of voltage drop at ECU-internal resistor RGnd in a state, where only the sensor line "IPE" is directly connected to RGnd (no current flows through the sensor) and voltage drop at ECU-internal resistor RGnd in a state, where all sensor lines are opened (Ug0 - Ug0i))	> 0.0438 V	for time	>= 0.1 sec		
					Requested mode of UEGO Sensor 1 bank 2 in SWITCH ON mode or WARM UP mode	= TRUE -		
					Last packet transfer aborted of sensor 1 bank	= TRUE -		
					Internal Control Module O2 Sensor Processor Performance Bank 2	= FALSE -		
					Control Module Processor Serial Peripheral Interface Bus 4	= FALSE -		
					Basic enable conditions met	= see sheet enable tables -		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
			Path 3: **Monitoring of abnormalities at sensor lines RE/APE/IPE during the normal ASIC operation when CJ135 is in SWITCHON or WARMUP mode** Short circuit to ground detected by means of contact measurements at sensor lines APE/RE//IPE		(			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
			(Negated difference of voltage drop at ECU-internal resistor RGnd in a state, where only the sensor line "APE" is directly connected to RGnd (no current flows through the sensor) and voltage drop at ECU-internal resistor RGnd in a state, where all sensor lines are opened (Ug0 - Ug0a)	> 0.07008 V	Battery voltage	>= 10.9 V		
			OR Negated difference of voltage drop at ECU-internal resistor RGnd in a state, where only the sensor line "RE" is directly connected to RGnd (no current flows through the sensor) and voltage drop at ECU-internal resistor RGnd in a state, where all sensor lines are opened (Ug0 - Ug0e)	> 0.07008 V	and Battery voltage	<= 655.34 V		
			OR Negated difference of voltage drop at ECU-internal resistor RGnd in a state, where only the sensor line "IPE" is directly connected to RGnd (no current flows through the sensor) and voltage drop at ECU-internal resistor RGnd in a state, where all sensor lines are opened (Ug0 - Ug0i)	> 0.07008 V	) for time	>= 0.1 sec		
			)		(Requested mode of UEGO Sensor 1 bank 2 in SWITCHON mode or WARMUP mode	= TRUE -		
					for number of counts)	>= 10 counts		
					Last packet transfer aborted of sensor 1 bank	= FALSE -		
					Internal Control Module O2 Sensor Processor Performance Bank 2	= FALSE -		
					Control Module Processor Serial Peripheral Interface Bus 4	= FALSE -		
					Basic enable conditions met	= see sheet enable tables -		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
	P30D8	**ECU: Self Check for Sensor ASIC of UEGO Sensor 1 Bank 1** An error is reported if the ASIC detects it or if it is not reacting to requests	**Monitoring of diagnosis register, working registers and RAM values:**		(Battery voltage	<= 655.34 V	continuously	2 Trips
			SPI error during transmission of diagnosis registers for time	>= 0.05 sec	Battery voltage)	>= 10.9 V		
			OR		for time	>= 0.1 sec		
			SPI error during transmission of data registers for time	>= 0.05 sec	Flag locking the fault report due to currently requested Idle mode	= FALSE -		
			OR		External reset request	= FALSE -		
			SPI error during transmission of RAM data for time	>= 0.05 sec	Basic enable conditions met	= see sheet enable tables -		
			OR		No pending or confirmed DTCs	= see sheet inhibit tables -		
			Monitoring ASIC (Chip) response/error					
			Availability of diagnostic register	= TRUE -				
			(ASIC initialization wasn't successful	= TRUE -				
			OR Respond/actual state of the ASIC wasn't as expected of base software	= TRUE -				
			OR The bank wasn't switched between interrupt change	= TRUE -				
			) **OR** **Monitoring setting register and operation mode**					
			Register could not be set	= TRUE -				
			Number of rejected requests	> 200 counts				
			OR No values found in diagnosis register	= TRUE -				
			OR The ASIC does not switch to the requested mode for time	> 2 sec				

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
	P30D9	**ECU: Self Check for Sensor ASIC of UEGO Sensor 1 Bank 2** An error is reported if the ASIC detects it or if it is not reacting to requests	**Monitoring of diagnosis register, working registers and RAM values:**				(Battery voltage	<=	655.34	V	continuously	2 Trips
			SPI error during transmission of diagnosis registers for time	>=	0.05	sec	Battery voltage	>=	10.9	V		
							)					
			OR				for time	>=	0.1	sec		
			SPI error during transmission of data registers for time	>=	0.05	sec	Flag locking the fault report due to currently requested Idle mode	=	FALSE	-		
			OR				External reset request	=	FALSE	-		
			SPI error during transmission of RAM data for time	>=	0.05	sec	Basic enable conditions met	=	see sheet enable tables	-		
			OR				No pending or confirmed DTCs	=	see sheet inhibit tables	-		
			Monitoring ASIC (Chip) response/error									
			Availability of diagnostic register	=	TRUE	-						
			(									
			ASIC initialization wasn't successful	=	TRUE	-						
			OR									
			Respond/actual state of the ASIC wasn't as expected of base software	=	TRUE	-						
			OR									
			The bank wasn't switched between interrupt change	=	TRUE	-						
			)									
			OR									
			Monitoring setting register and operation mode									
			Register could not be set	=	TRUE	-						
			Number of rejected requests	>	200	counts						
			OR									
			No values found in diagnosis register	=	TRUE	-						
			OR									
			The ASIC does not switch to the requested mode for time	>	2	sec						
Upstream Exhaust Gas Sensor	P0133	Path 1: Step response/identifcation measurement of Oxygen sensor and pattern has been detected with Step-response measurement within parallelization	**Step response measurement:**				Non bank-specific enabling conditions for continuous identification	=	TRUE	-		2 Trip
			(				(					
			Arithmetical average value of delay time from step response measurement in lean-rich direction	>	0.6	sec	Vehicle speed	>=	3.107520199	mph		
			OR				Fuel purge adaptation factor	<=	40	-		
			Arithmetical average value of transition time from step response measurement in lean-rich direction	>	0.8	sec	(					
			OR				Integral of purge mass flow after a longer purge stop	>=	1.02	g		
			Arithmetical average value of delay time from step response measurement in rich-lean direction	>	0.6	sec	OR					
			OR				Purge mass flow for DTEV	<	0.027777778	g/sec		
			Arithmetical average value of transition time from step response measurement in rich-lean direction	>	0.8	sec	)					
			)				(					
			OR				Condition gear-shift in process	=	FALSE	-		
			Identification measurement:				Condition instationary state during half engine mode switching	=	FALSE	-		
			(				)					
			Status of step response measurement (detected pattern, bank 1)	>	0	-	End of start is reached	=	TRUE	-		
			(				for time	=	7	sec		
			Identified delay time in lean-rich direction	>	0.9	sec	(					
			OR				Absolute value of filling gradient	<=	12	%		
			Identified transition time in lean-rich direction	>	1.2	sec	for time	=	1	sec		
			OR				)					
			Identified delay time in rich-lean direction	>	0.9	sec	(					
			OR				Condition half engine mode (HEM) active	=	TRUE	-		
			Identified transition time in rich-lean direction	>	1.2	sec	(					
			)				Relative air mass / 2	>	0	%		
			)				for time	=	0	sec		
							)					
							OR					
							Condition half engine mode (HEM) active	=	FALSE	-		
							(					
							Relative air mass	>	0	%		
							for time	=	0	sec		
							)					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					)					
					Ambient pressure	>	0	kPa		
					)					
					Bank-specific enabling conditions for continuous identification	=	TRUE	-		
					(					
					Enabling conditions for lambda stability					
					(					
					(					
					Lambda closed loop control, Bank 1	=	TRUE	-		
					(					
					Lambda control disabled during after cylinder cut−off	=	FALSE	-		
					Lambda swtiched ON after fuel cutoff	=	TRUE	-		
					(					
					Fuel cut off is active	=	FALSE	-		
					(					
					Time running down after fuel cut−off for enabling lambda control	>	8	sec		
					OR					
					(					
					Absolute value of diffence in lambda of bank 1	<=	0.1001	-		
					Difference of counter time and plant time constant a-(b+c) where a is Time running down after fuel cut−off for enabling lambda control b is plant time constant for continuous air/fuel control c is plant parameter for dead time for lambda control	>	0	sec		
					)					
					)					
					)					
					LSU sensor upstream to catalyst ready for operation	=	TRUE	-		
					(					
					lambda sensor 1 temperature	>=	654.998	deg C		
					)					
					Lambda control disabled by a fault	=	FALSE	-		
					(					
					Catalyst damaging misfire rate exceeded	=	FALSE	-		
					Injector power stage fault is active	=	FALSE	-		
					Camshaft fault in critical operating range present and MAF is main air charge sensor	=	FALSE	-		
					)					
					lambda control is active since warmup is finished	=	TRUE	-		
					Relative air charge	>	0	%		
					for time	>=	2	sec		
					Lamda control active due to GDI mode change	=	TRUE	-		
					(					
					GDI mode homogeneous	=	TRUE	-		
					for time	>=	0.8	sec		
					)					
					)					
					)					
					Rich catalyst purge is active	=	TRUE	-		
					(					
					Lambda for component protection is active	=	FALSE	-		
					OR					
					Number of the lambda requests determining the lambda setpoint	!=	5	-		
					)					
					for time	=	2	sec		
					)					
					Plant time constant of continuous af control, base value, linear quantization	<=	0.25	sec		
					(					
					Exhaust gas mass flow Cat 1, Bank 1	<=	55.55555556	g/sec		
					(					
					Difference between exhaust gas mass flow Cat 1, Bank 1 with its filtered value	>=	-910.2222222	g/sec		
					Difference between exhaust gas mass flow Cat 1, Bank 1 with its filtered value	<=	910.1944444	g/sec		
					)					
					for time	=	0.01	sec		
					)					
					Sensor LSU upstream cat ready for operation	=	TRUE	-		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					for time	=	10	sec		
					Enable LSU dynamic diagnosis w.r.t. scavenging	=	TRUE	-		
					(					
					Ratio of total air mass to mass in cylinder	<=	1.02002	-		
					Filtered air mass	>=	50	g		
					)					
					(					
					(					
					Transition time from step response measurement in rich-lean direction	<	0.2	sec		
					Transition time from step response measurement in lean-rich direction	<	0.2	sec		
					)					
					(					
					Transition time from step response measurement in rich-lean direction	<	0.1	sec		
					Transition time from step response measurement in lean-rich direction	<	0.1	sec		
					)					
					)					
					Injection valve cut-off on Bank 1	=	FALSE	-		
					)					
					Identification trigger: rate of change of modeled lambda in lean to rich direction, bank 2	>=	0.019989	-		
					Identification trigger: rate of change of modeled lambda in rich to lean direction, bank 2	>=	0.019989	-		
					(					
					Number of step response measurements in lean-rich direction for driving cylce (sensor 1, bank 1)	=	0	-		
					(					
					Time to evaluate loss function	>=	30	sec		
					OR					
					Square of difference between band pass filtered reciprocal lambda and modelled reciprocal lambda values	>=	100	-		
					)					
					)					
					OR					
					Enabling conditions for step response measurement					
					(					
					(					
					(					
					(					
					Lean lambda is requested and the cat is filled with oxygen gas	=	TRUE	-		
					a commanded lambda active	=	TRUE	-		
					primary A/F commanded lambda	=	1.08008	-		
					for time	>=	3	sec		
					for time	>=	0.2	sec		
					Secondary O2 sensor voltage	<=	0.200195	V		
					(					
					Rich lambda is requested and the cat is filled with rich gas due to low sensor voltage	=	TRUE	-		
					a commanded lambda active	=	TRUE	-		
					primary A/F commanded lambda bank1	=	0.91992	-		
					for time	>=	3	sec		
					for time	>=	0.2	sec		
					OR					
					Rich lamda is requested to empty the oxygen gas from the cat	=	TRUE	-		
					a commanded lambda active	=	TRUE	-		
					primary A/F commanded lambda	=	0.91992	-		
					for time	>=	3	sec		
					for time	>=	0.2	sec		
					(					
					Secondary O2 sensor voltage	>=	0.85083	V		
					Or					
					(					
					Secondary O2 sensor voltage	>=	0.749512	V		
					Secondary O2 sensor voltage	<=	0.09944	V/s		
					Secondary O2 sensor voltage	>=	-0.09944	V/s		
					Integrated Oxygen mass flow bank 1	>	0.15	g		
					))					
					(					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 TEST GROUP: KGMXV04.2088 EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Primary A/F sensor lambda	<= (a) + (b)		
					(a) Primary lambda control set point	(a)		
					(b) maximum lambda deviation of lean mixture	(b) 0.05005 -		
					Primary A/F sensor lambda	>= (a) - (b)		
					(a) Primary lambda control set point			
					(b) maximum lambda deviation of rich mixture	0.05005 -		
					for time	>= 0.2 sec		
					Integrated rich exhaust gas mass flow bank 1	>= 15 g		
					)			
					)			
					for time	= A * 0.8 sec		
					where in			
					(A) LRS-plantparameter deadtime			
					and			
					(			
					Reciprocal of actual lambda value	> (A + (B*C)) -		
					where in			
					(A) Minimal or maximal value of reciprocal lambda after step			
					(B) Fraction of step height to end step response measurement	= 0.3000031 -		
					(C) Step height in reciprocal lambda			
					OR			
					Difference between time after step measurement and LRS-plantparameter deadtime	> 2.5 sec		
					)			
					)			
					OR			
					(			
					(			
					Rich lamda is requested to empty the oxygen gas from the cat	= TRUE -		
					a commanded lambda active	= TRUE -		
					primary A/F commanded lambda	= 0.91992 -		
					for time	>= 3 sec		
					for time	>= 0.2 sec		
					(			
					Secondary O2 sensor voltage	>= 0.85083 V		
					Or			
					(			
					Secondary O2 sensor voltage	>= 0.749512 V		
					Secondary O2 sensor voltage	<= 0.09944 V/s		
					Secondary O2 sensor voltage	>= -0.09944 V/s		
					Integrated Oxygen mass flow bank 1	> 0.15 g		
					))			
					(			
					Primary A/F sensor lambda	<= (a) + (b)		
					(a) Primary lambda control set point	(a)		
					(b) maximum lambda deviation of lean mixture	(b) 0.05005 -		
					Primary A/F sensor lambda	>= (a) - (b)		
					(a) Primary lambda control set point			
					(b) maximum lambda deviation of rich mixture	0.05005 -		
					for time	>= 0.2 sec		
					Integrated rich exhaust gas mass flow bank 1	>= 15 g		
					and			
					(			
					Lean lambda is requested and the cat is filled with oxygen gas due to high sensor voltage	= TRUE -		
					a commanded lambda active	**=** TRUE -		
					primary A/F commanded lambda	= 1.08008 -		
					for time	>= 3 sec		
					for time	>= 0.2 sec		
					((			
					Secondary O2 sensor voltage	<= 0.150146 V		
					for time	>= 0.1 sec		
					)			
					Or			
					(			
					Secondary O2 sensor voltage	<= 0.150146 V		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Secondary O2 sensor voltage gradient over 0.05s	<= 0.09944 V/s		
					Secondary O2 sensor voltage gradient over 0.05s	>= -0.09944 V/s		
					Integrated Oxygen mass flow bank 1	> 0.1 g		
					))			
					(			
					Primary A/F sensor lambda	<= (a) + (b)		
					(a) Primary lambda control set point	(a)		
					(b) maximum lambda deviation of lean mixture	(b) 0.05005 -		
					Primary A/F sensor lambda	>= (a) - (b)		
					(a) Primary lambda control set point			
					(b) maximum lambda deviation of rich mixture	0.05005 -		
					for time	>= 0.2 sec		
					Integrated lean exhaust gas mass flow bank 1	>= 15 g		
					)			
					OR			
					Lean lambda is requested and the cat is filled with oxygen gas	= TRUE -		
					a commanded lambda active	= TRUE -		
					primary A/F commanded lambda	= 1.08008 -		
					for time	>= 3 sec		
					for time	>= 0.2 sec		
					Secondary O2 sensor voltage	<= 0.200195 V		
					)			
					)			
					for time	= A * 0.8 sec		
					where in			
					(A) LRS-plantparameter deadtime			
					(			
					Reciprocal of actual lambda value	< (A - (B*C)) -		
					where in			
					(A) Minimal or maximal value of reciprocal lambda after step			
					(B) Fraction of step height to end step response measurement	= 0.3000031 -		
					(C) Step height in reciprocal lambda			
					OR			
					Difference between time after step measurement and LRS-plantparameter deadtime	> 2.5 sec		
					)			
					)			
					)			
					Absolute difference between reciprocal of desired lamda limitation and reciprocal lambda setpoint in combustion chamber	> 0.05 -		
					for time	= A * 0.8 sec		
					where in			
					(A) LRS-plantparameter deadtime			
					)			
					(			
					(			
					Number of evaluated steps in lean-rich direction (sensor 1, bank 1)	< 2 counts		
					Number of evaluated steps in lean-rich direction (sensor 1, bank 1)	> 0 -		
					(			
					(			
					Delay time from step response measurement in lean-rich direction (sensor 1, bank 1)	<= A - ((A - B)* (C / D)) sec		
					where in			
					(A) Delay time of best part unacceptable	= 0 sec		
					(B) Fault threshold of delay time (step response, lean to rich)	= 0.6 sec		
					(C) Necessary number of measurements for fault-confirmation	= 2 counts		
					(D) Number of evaluated steps in lean-rich direction (sensor 1, bank 1)			
					Transition time from step response measurement in lean-rich direction (sensor 1, bank 1)	<= A - ((A - B)* (C / D)) sec		
					where in			
					(A) Transition time of best part unacceptable	= 0 sec		
					(B) Fault threshold of transition time (step response, lean to rich)	= 0.8 sec		
					(C) Necessary number of measurements for fault-confirmation	= 2 counts		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					(D) Number of evaluated steps in lean-rich direction (sensor 1, bank 1)			
					)			
					OR			
					Number of evaluated steps in lean-rich direction (sensor 1, bank 1)	>= 2 counts		
					)			
					)			
					OR			
					(			
					Number of evaluated steps in rich-lean direction (sensor 1, bank 1)	< 2 counts		
					Number of evaluated steps in rich-lean direction (sensor 1, bank 1)	> 0 -		
					(			
					Delay time from step response measurement in rich-lean direction (sensor 1, bank 1)	<= A - ((A - B)* (C / D)) sec		
					where in			
					(A) Delay time of best part unacceptable	= 0 sec		
					(B) Fault threshold of delay time (step response,rich to lean)	= 0.6 sec		
					(C) Necessary number of measurements for fault-confirmation	= 2 counts		
					(D) Number of evaluated steps in rich-lean direction (sensor 1, bank 1)			
					Transition time from step response measurement in rich-lean direction (sensor 1, bank 1)	<= A - ((A - B)* (C / D)) sec		
					where in			
					(A) Transition time of best part unacceptable	= 0 sec		
					(B) Fault threshold of transition time (step response,rich to lean)	= 0.8 sec		
					(C) Necessary number of measurements for fault-confirmation	= 2 counts		
					(D) Number of evaluated steps in rich-lean direction (sensor 1, bank 1)			
					)			
					OR			
					Number of evaluated steps in rich-lean direction (sensor 1, bank 1)	>= 2 counts		
					)			
					)			
		Path 2: Step response/identifcation measurement of Oxygen sensor and pattern not detected with Step-response measurement within parallelization	**Step response measurement:**		Non bank-specific enabling conditions for continuous identification	= TRUE -		
			(		(			
			Arithmetical average value of delay time from step response measurement in lean-rich direction	> 0.6 sec	Vehicle speed	>= 3.107520199 mph		
			OR		and			
			Arithmetical average value of transition time from step response measurement in lean-rich direction	> 0.8 sec	Factor fuel purge adaptation factor	<= 40		
			OR		and			
			Arithmetical average value of delay time from step response measurement in rich-lean direction	> 0.6 sec	(			
			OR		Integral of purge mass flow after a longer purge stop	>= 1.02 g		
			Arithmetical average value of transition time from step response measurement in rich-lean direction	> 0.8 sec	OR			
			)		Purge mass flow for DTEV	< 0.027777778 g/sec		
			OR		)			
			Identification measurement:		(			
			(		Condition gear-shift in process	= FALSE -		
			Status of step response measurement (pattern is not detected bank 1)	= 0 -	Condition instationary state during half engine mode switching	= FALSE -		
			(		)			
			Sum time of identification in lean-rich direction	> 1.5 sec	End of start is reached	= TRUE -		
			OR		for time	= 7 sec		
			Sum time of identification in rich-lean direction	> 1.5 sec	(			
			)		Fault suspicion reported by continuous identification	= TRUE -		
			)		(			
					Sum of identified delay time and transition time in lean to rich direction	> 0.2 sec		
					OR			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					Sum of identified delay time and transition time in rich to lean direction	>	0.2	sec		
					OR					
					Difference between sum of delay times and transition times in lean to rich and rich to lean directions respectively where in (A) Identified transition time in lean-rich direction (bank 1) (B)Identified delay time in lean-rich direction (bank 1) (C) Identified transition time in rich-lean direction (bank 1) (D) Identified delay time in rich-lean direction (bank 1)	>	0.2	sec		
					OR					
					Negative value of the sum of delay times and transition times in rich to lean and lean to rich directions respectively where in (A) Identified transition time in lean-rich direction (bank 1) (B)Identified delay time in lean-rich direction (bank 1) (C) Identified transition time in rich-lean direction (bank 1) (D) Identified delay time in rich-lean direction (bank 1)	>	0.2	sec		
					(					
					Absolute value of filling gradient	<=	12	%		
					for time	=	3	sec		
					)					
					)					
					OR					
					Fault suspicion reported by continuous identification	=	FALSE	-		
					(					
					Absolute value of filling gradient	<=	12	%		
					for time	=	1	sec		
					)					
					)					
					(					
					Condition half engine mode (HEM) active	=	TRUE	-		
					(					
					Relative air mass / 2	>	0	%		
					for time	=	0	sec		
					)					
					OR					
					Condition half engine mode (HEM) active	=	FALSE	-		
					(					
					Relative air mass	>	0	%		
					for time	=	0	sec		
					)					
					)					
					Ambient pressure	>	0	kPa		
					)					
					Bank-specific enabling conditions for continuous identification	=	TRUE	-		
					(					
					Enabling conditions for lambda stability					
					(					
					(					
					Lambda closed loop control, Bank 1	=	TRUE	-		
					(					
					Lambda control disabled during after cylinder cut−off	=	FALSE	-		
					and					
					Lambda swtiched ON after fuel cutoff	=	TRUE	-		
					(					
					Fuel cut off is active	=	FALSE	-		
					(					
					Time running down after fuel cut−off for enabling lambda control	>	8	sec		
					OR					
					(					
					Absolute value of diffence in lambda of bank 1	<=	0.1001	-		
					Difference of counter time and plant time constant a-(b+c) where a is Time running down after fuel cut−off for enabling lambda control b is plant time constant for continuous air/fuel control	>	0	sec		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					c is plant parameter for dead time for lambda control			
					)			
					)			
					)			
					LSU sensor upstream to catalyst ready for operation	= TRUE -		
					(			
					lambda sensor 1 temperature	>= 654.998 deg C		
					)			
					Lambda control disabled by a fault	= FALSE -		
					(			
					Catalyst damaging misfire rate exceeded	= FALSE -		
					Injector power stage fault is active	= FALSE -		
					Camshaft fault in critical operating range present and MAF is main air charge sensor	= FALSE -		
					)			
					lambda control is active since warmup is finished	= TRUE -		
					Relative air charge	> 0 %		
					for time	>= 2 sec		
					Lamda control active due to GDI mode change	= TRUE -		
					(			
					GDI mode homogeneous	= TRUE -		
					for time	>= 0.8 sec		
					)			
					)			
					)			
					Rich catalyst purge is active	= TRUE -		
					(			
					Lambda for component protection is active	= FALSE -		
					OR			
					Number of the lambda requests determining the lambda setpoint	!= 5 -		
					)			
					for time	= 2 sec		
					)			
					Plant time constant of continuous af control, base value, linear quantization	<= 0.25 sec		
					(			
					Exhaust gas mass flow Cat 1, Bank 1	<= 55.55555556 g/sec		
					(			
					Difference between exhaust gas mass flow Cat 1, Bank 1 with its filtered value	>= -910.2222222 g/sec		
					Difference between exhaust gas mass flow Cat 1, Bank 1 with its filtered value	<= 910.1944444 g/sec		
					)			
					for time	= 0.01 sec		
					)			
					Sensor LSU upstream cat ready for operation	= TRUE -		
					for time	= 10 sec		
					Enable LSU dynamic diagnosis w.r.t. scavenging	= TRUE -		
					(			
					Ratio of total air mass to mass in cylinder	<= 1.02002 -		
					Filtered air mass	>= 50 g		
					)			
					(			
					(			
					Transition time from step response measurement in rich-lean direction	< 0.2 sec		
					Transition time from step response measurement in lean-rich direction	< 0.2 sec		
					)			
					(			
					Transition time from step response measurement in rich-lean direction	< 0.1 sec		
					Transition time from step response measurement in lean-rich direction	< 0.1 sec		
					)			
					)			
					Injection valve cut-off on Bank 1	= FALSE -		
					)	= 3 sec		
					Identification trigger: rate of change of modeled lambda in lean to rich direction, bank 2	>= 0.019989 -		
					Identification trigger: rate of change of modeled lambda in rich to lean direction, bank 2	>= 0.019989 -		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 TEST GROUP: KGMXV04.2088 EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					(			
					Number of step response measurements in lean-rich direction for driving cylce (sensor 1, bank 1)	= 0 -		
					(			
					Time to evaluate loss function	>= 30 sec		
					OR			
					Square of difference between band pass filtered reciprocal lambda and modelled reciprocal lambda values	>= 100 -		
					)			
					)			
					OR			
					Enabling conditions for step response measurement			
					(			
					(			
					(			
					(			
					Lean lambda is requested and the cat is filled with oxygen gas	= TRUE -		
					a commanded lambda active	= TRUE -		
					primary A/F commanded lambda	= 1.08008 -		
					for time	>= 3 sec		
					for time	>= 0.2 sec		
					Secondary O2 sensor voltage	<= 0.200195 V		
					(			
					Rich lambda is requested and the cat is filled with rich gas due to low sensor voltage	= TRUE -		
					a commanded lambda active	= TRUE -		
					primary A/F commanded lambda bank1	= 0.91992 -		
					for time	>= 3 sec		
					for time	>= 0.2 sec		
					OR			
					Rich lamda is requested to empty the oxygen gas from the cat	= TRUE -		
					a commanded lambda active	= TRUE -		
					primary A/F commanded lambda	= 0.91992 -		
					for time	>= 3 sec		
					for time	>= 0.2 sec		
					(			
					Secondary O2 sensor voltage	>= 0.85083 V		
					Or			
					(			
					Secondary O2 sensor voltage	>= 0.749512 V		
					Secondary O2 sensor voltage	<= 0.09944 V/s		
					Secondary O2 sensor voltage	>= -0.09944 V/s		
					Integrated Oxygen mass flow bank 1	> 0.15 g		
					))			
					(			
					Primary A/F sensor lambda	<= (a) + (b)		
					(a) Primary lambda control set point	(a)		
					(b) maximum lambda deviation of lean mixture	(b) 0.05005 -		
					Primary A/F sensor lambda	>= (a) - (b)		
					(a) Primary lambda control set point			
					(b) maximum lambda deviation of rich mixture	0.05005 -		
					for time	>= 0.2 sec		
					Integrated rich exhaust gas mass flow bank 1	>= 15 g		
					)			
					)			
					for time	= A * 0.8 sec		
					where in			
					(A) LRS-plantparameter deadtime			
					and			
					(			
					Reciprocal of actual lambda value	> (A + (B*C)) -		
					where in			
					(A) Minimal or maximal value of reciprocal lambda after step			
					(B) Fraction of step height to end step response measurement	= 0.3000031 -		
					(C) Step height in reciprocal lambda			
					OR			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Difference between time after step measurement and LRS-plantparameter deadtime	> 2.5 sec		
					)			
					)			
					OR			
					(			
					(			
					Rich lamda is requested to empty the oxygen gas from the cat	= TRUE -		
					a commanded lambda active	= TRUE -		
					primary A/F commanded lambda	= 0.91992 -		
					for time	>= 3 sec		
					for time	>= 0.2 sec		
					(			
					Secondary O2 sensor voltage	>= 0.85083 V		
					Or			
					(			
					Secondary O2 sensor voltage	>= 0.749512 V		
					Secondary O2 sensor voltage	<= 0.09944 V/s		
					Secondary O2 sensor voltage	>= -0.09944 V/s		
					Integrated Oxygen mass flow bank 1	> 0.15 g		
					))			
					(			
					Primary A/F sensor lambda	<= (a) + (b)		
					(a) Primary lambda control set point	(a)		
					(b) maximum lambda deviation of lean mixture	(b) 0.05005 -		
					Primary A/F sensor lambda	>= (a) - (b)		
					(a) Primary lambda control set point			
					(b) maximum lambda deviation of rich mixture	0.05005 -		
					for time	>= 0.2 sec		
					Integrated rich exhaust gas mass flow bank 1	>= 15 g		
					and			
					(			
					Lean lambda is requested and the cat is filled with oxygen gas due to high sensor voltage	= TRUE -		
					a commanded lambda active	**=** TRUE -		
					primary A/F commanded lambda	= 1.08008 -		
					for time	>= 3 sec		
					for time	>= 0.2 sec		
					((			
					Secondary O2 sensor voltage	<= 0.150146 V		
					for time	>= 0.1 sec		
					)			
					Or			
					(			
					Secondary O2 sensor voltage	<= 0.150146 V		
					Secondary O2 sensor voltage gradient over 0.05s	<= 0.09944 V/s		
					Secondary O2 sensor voltage gradient over 0.05s	>= -0.09944 V/s		
					Integrated Oxygen mass flow bank 1	> 0.1 g		
					))			
					(			
					Primary A/F sensor lambda	<= (a) + (b)		
					(a) Primary lambda control set point	(a)		
					(b) maximum lambda deviation of lean mixture	(b) 0.05005 -		
					Primary A/F sensor lambda	>= (a) - (b)		
					(a) Primary lambda control set point			
					(b) maximum lambda deviation of rich mixture	0.05005 -		
					for time	>= 0.2 sec		
					Integrated lean exhaust gas mass flow bank 1	>= 15 g		
					)			
					OR			
					Lean lambda is requested and the cat is filled with oxygen gas	= TRUE -		
					a commanded lambda active	= TRUE -		
					primary A/F commanded lambda	= 1.08008 -		
					for time	>= 3 sec		
					for time	>= 0.2 sec		
					Secondary O2 sensor voltage	<= 0.200195 V		
					)			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					)					
					for time where in (A) LRS-plantparameter deadtime	=	A * 0.8	sec		
					(					
					Reciprocal of actual lambda value where in (A) Minimal or maximal value of reciprocal lambda after step	<	(A - (B*C))	-		
					(B) Fraction of step height to end step response measurement (C) Step height in reciprocal lambda OR	=	0.3000031	-		
					Difference between time after step measurement and LRS-plantparameter deadtime)))	>	2.5	sec		
					Absolute difference between reciprocal of desired lamda limitation and reciprocal lambda setpoint in combustion chamber	>	0.05	-		
					for time where in (A) LRS-plantparameter deadtime) ((	=	A * 0.8	sec		
					Number of evaluated steps in lean-rich direction (sensor 1, bank 1)	<	2	counts		
					Number of evaluated steps in lean-rich direction (sensor 1, bank 1) ((	>	0	-		
					Delay time from step response measurement in lean-rich direction (sensor 1, bank 1) where in	<=	A - ((A - B)* (C / D))	sec		
					(A) Delay time of best part unacceptable	=	0	sec		
					(B) Fault threshold of delay time (step response, lean to rich)	=	0.6	sec		
					(C) Necessary number of measurements for fault-confirmation (D) Number of evaluated steps in lean-rich direction (sensor 1, bank 1)	=	2	counts		
					Transition time from step response measurement in lean-rich direction (sensor 1, bank 1) where in	<=	A - ((A - B)* (C / D))	sec		
					(A) Transition time of best part unacceptable	=	0	sec		
					(B) Fault threshold of transition time (step response, lean to rich)	=	0.8	sec		
					(C) Necessary number of measurements for fault-confirmation (D) Number of evaluated steps in lean-rich direction (sensor 1, bank 1)) OR	=	2	counts		
					Number of evaluated steps in lean-rich direction (sensor 1, bank 1))) OR (	>=	2	counts		
					Number of evaluated steps in rich-lean direction (sensor 1, bank 1)	<	2	counts		
					Number of evaluated steps in rich-lean direction (sensor 1, bank 1) ((	>	0	-		
					Delay time from step response measurement in rich-lean direction (sensor 1, bank 1) where in	<=	A - ((A - B)* (C / D))	sec		
					(A) Delay time of best part unacceptable	=	0	sec		
					(B) Fault threshold of delay time (step response,rich to lean)	=	0.6	sec		
					(C) Necessary number of measurements for fault-confirmation (D) Number of evaluated steps in rich-lean direction (sensor 1, bank 1)	=	2	counts		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Transition time from step response measurement in rich-lean direction (sensor 1, bank 1)	<= A - ((A - B)* (C / D)) sec		
					where in			
					(A) Transition time of best part unacceptable	= 0 sec		
					(B) Fault threshold of transition time (step response,rich to lean)	= 0.8 sec		
					(C) Necessary number of measurements for fault-confirmation	= 2 counts		
					(D) Number of evaluated steps in rich-lean direction (sensor 1, bank 1)			
					)			
					OR			
					Number of evaluated steps in rich-lean direction (sensor 1, bank 1)	>= 2 counts		
					)			
					)			
					)			
					No pending or confirmed DTCs	= see sheet inhibit table -		
					Basic enable conditions met	= see sheet enable tables -		
Upstream Exhaust Gas Sensor	P0153	Path 1: Step response/identifcation measurement of Oxygen sensor of bank 2 and pattern has been detected with Step-response measurement within parallelization	**Step response measurement:**		Non bank-specific enabling conditions for continuous identification	= TRUE -		2 Trip
			(		(			
			Arithmetical average value of delay time from step response measurement in lean-rich direction (sensor 1, bank 2)	> 0.6 sec	Vehicle speed	>= 3.107520199 mph		
			OR		Fuel purge adaptation factor	<= 40 -		
			Arithmetical average value of transition time from step response measurement in lean-rich direction, (sensor 1, bank 2)	> 0.8 sec	(			
			OR		Integral of purge mass flow after a longer purge stop	>= 1.02 g		
			Arithmetical average value of delay time from step response measurement in rich-lean direction, (sensor 1, bank 2)	> 0.6 sec	OR			
			OR		Purge mass flow for DTEV	< 0.027777778 g/sec		
			Arithmetical average value of transition time from step response measurement in rich-lean direction, (sensor 1, bank 2)	> 0.8 sec	)			
			)		(			
			OR		Condition gear-shift in process	= FALSE -		
			Identification measurement:		and			
			(		Condition instationary state during half engine mode switching	= FALSE -		
			Status of step response measurement (detected pattern, bank 2)	> 0 -	)			
			(		End of start is reached	= TRUE -		
			Identified delay time in lean-rich direction, bank 2	> 0.9 sec	for time	= 7 sec		
			OR		(			
			Identified transition time in lean-rich direction, bank 2	> 1.2 sec	Absolute value of filling gradient	<= 12 %		
			OR		for time	= 1 sec		
			Identified delay time in rich-lean direction, bank 2	> 0.9 sec	)			
			OR		(			
			Identified transition time in rich-lean direction, bank 2	> 1.2 sec	Condition half engine mode (HEM) active	= TRUE -		
			)		(			
			)		Relative air mass / 2	> 0 %		
					for time	= 0 sec		
					)			
					OR			
					Condition half engine mode (HEM) active	= FALSE -		
					(			
					Relative air mass	> 0 %		
					for time	= 0 sec		
					)			
					)			
					Ambient pressure	> 0 kPa		
					)			
					Bank-specific enabling conditions for continuous identification, bank 2	= TRUE -		
					(			
					Enabling conditions for lambda stability			
					(			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					(			
					Lambda closed loop control, Bank 2	= TRUE -		
					(			
					Lambda control disabled during after cylinder cut−off, bank 2	= FALSE -		
					Lambda swtiched ON after fuel cutoff, bank 2	= TRUE -		
					(			
					Fuel cut off is active	= FALSE -		
					(			
					Time running down after fuel cut−off for enabling lambda control	> 8 sec		
					OR			
					(			
					Absolute value of diffence in lambda of bank 2	<= 0.1001 -		
					Difference of counter time and plant time constant a-(b+c) where a is Time running down after fuel cut−off for enabling lambda control b is plant time constant for continuous air/fuel control, bank 2 c is plant parameter for dead time for lambda control, bank 2	> 0 sec		
					)			
					)			
					)			
					LSU sensor upstream to catalyst ready for operation, bank 2	= TRUE -		
					(			
					lambda sensor 1 temperature, bank 2	>= 654.998 deg C		
					)			
					Lambda control disabled by a fault, bank 2	= FALSE -		
					(			
					Catalyst damaging misfire rate exceeded	= FALSE -		
					Injector power stage fault is active	= FALSE -		
					Camshaft fault in critical operating range present and MAF is main air charge sensor	= FALSE -		
					)			
					lambda control is active since warmup is finished	= TRUE -		
					Relative air charge	> 0 %		
					for time	>= 2 sec		
					Lamda control active due to GDI mode change	= TRUE -		
					(			
					GDI mode homogeneous	= TRUE -		
					for time	>= 0.8 sec		
					)			
					)			
					)			
					Rich catalyst purge is active, bank 2	= TRUE -		
					(			
					Lambda for component protection is active	= FALSE -		
					OR			
					Number of the lambda requests determining the lambda setpoint	!= 5 -		
					)			
					for time	= 2 sec		
					)			
					Plant time constant of continuous af control, base value, bank 2, linear quantization	<= 0.25 sec		
					(			
					Exhaust gas mass flow Cat 1, Bank 2	<= 55.55555556 g/sec		
					(			
					Difference between exhaust gas mass flow Cat 1, Bank 2 with its filtered value	>= -910.2222222 g/sec		
					Difference between exhaust gas mass flow Cat 1, Bank 2 with its filtered value	<= 910.1944444 g/sec		
					)			
					for time	= 0.01 sec		
					)			
					Sensor LSU upstream cat ready for operation	= TRUE -		
					for time	= 10 sec		
					Enable LSU dynamic diagnosis w.r.t. scavenging	= TRUE -		
					(			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					Ratio of total air mass to mass in cylinder	<=	1.02002	-		
					Filtered air mass	>=	50	g		
					)					
					(					
					(					
					Transition time from step response measurement in rich-lean direction (sensor 1, bank 2)	<	0.2	sec		
					Transition time from step response measurement in lean-rich direction (sensor 1, bank 2)	<	0.2	sec		
					)					
					(					
					Transition time from step response measurement in rich-lean direction (sensor 1, bank 2)	<	0.1	sec		
					Transition time from step response measurement in lean-rich direction (sensor 1, bank 2)	<	0.1	sec		
					)					
					)					
					Injection valve cut-off on Bank 2	=	FALSE	-		
					)					
					Identification trigger: rate of change of modeled lambda in lean to rich direction, bank 2	>=	0.019989	-		
					Identification trigger: rate of change of modeled lambda in rich to lean direction, bank 2	>=	0.019989	-		
					(					
					Number of step response measurements in lean-rich direction for driving cylce (sensor 1, bank 2)	=	0	-		
					(					
					Time to evaluate loss function, bank 2	>=	30	sec		
					OR					
					Square of difference between band pass filtered reciprocal lambda and modelled reciprocal lambda values (sensor 1, bank 2)	>=	100	-		
					)					
					)					
					OR					
					Enabling conditions for step response measurement					
					(					
					(					
					(					
					(					
					Lean lambda is requested and the cat is filled with oxygen gas	=	TRUE	-		
					a commanded lambda active	=	TRUE	-		
					primary A/F commanded lambda	=	1.08008	-		
					for time	>=	3	sec		
					for time	>=	0.2	sec		
					Secondary O2 sensor voltage	<=	0.200195	V		
					(					
					Rich lambda is requested and the cat is filled with rich gas due to low sensor voltage, bank 2	=	TRUE	-		
					a commanded lambda active	=	TRUE	-		
					primary A/F commanded lambda bank2	=	0.91992	-		
					for time	>=	3	sec		
					for time	>=	0.2	sec		
					OR					
					Rich lamda is requested to empty the oxygen gas from the cat	=	TRUE	-		
					a commanded lambda active	=	TRUE	-		
					primary A/F commanded lambda	=	0.91992	-		
					for time	>=	3	sec		
					for time	>=	0.2	sec		
					(					
					Secondary O2 sensor voltage	>=	0.85083	V		
					Or					
					(					
					Secondary O2 sensor voltage	>=	0.749512	V		
					Secondary O2 sensor voltage	<=	0.09944	V/s		
					Secondary O2 sensor voltage	>=	-0.09944	V/s		
					Integrated Oxygen mass flow bank 2	>	0.15	g		
					))					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					(			
					Primary A/F sensor lambda	<= (a) + (b)		
					(a) Primary lambda control set point	(a)		
					(b) maximum lambda deviation of lean mixture	(b) 0.05005 -		
					Primary A/F sensor lambda	>= (a) - (b)		
					(a) Primary lambda control set point			
					(b) maximum lambda deviation of rich mixture	0.05005 -		
					for time	>= 0.2 sec		
					Integrated rich exhaust gas mass flow bank 2	>= 15 g		
					)			
					)			
					for time	= A * 0.8 sec		
					where in			
					(A) LRS-plantparameter deadtime, bank 2			
					(			
					Reciprocal of actual lambda value, sensor 1, bank 2	> (A + (B*C)) -		
					where in			
					(A) Minimal or maximal value of reciprocal lambda after step, bank 2			
					(B) Fraction of step height to end step response measurement	= 0.3000031 -		
					(C) Step height in reciprocal lambda, bank 2			
					OR			
					Difference between time after step measurement and LRS-plantparameter deadtime, bank 2	> 2.5 sec		
					)			
					)			
					OR			
					(			
					(			
					Rich lambda is requested to empty the oxygen gas from the cat, bank 2	= TRUE -		
					a commanded lambda active	= TRUE -		
					primary A/F commanded lambda	= 0.91992 -		
					for time	>= 3 sec		
					for time	>= 0.2 sec		
					(			
					Secondary O2 sensor voltage	>= 0.85083 V		
					Or			
					(			
					Secondary O2 sensor voltage	>= 0.749512 V		
					Secondary O2 sensor voltage	<= 0.09944 V/s		
					Secondary O2 sensor voltage	>= -0.09944 V/s		
					Integrated Oxygen mass flow bank 2	> 0.15 g		
					))			
					(			
					Primary A/F sensor lambda	<= (a) + (b)		
					(a) Primary lambda control set point	(a)		
					(b) maximum lambda deviation of lean mixture	(b) 0.05005 -		
					Primary A/F sensor lambda	>= (a) - (b)		
					(a) Primary lambda control set point			
					(b) maximum lambda deviation of rich mixture	0.05005 -		
					for time	>= 0.2 sec		
					Integrated rich exhaust gas mass flow bank 2	>= 15 g		
					(			
					Lean lambda is requested and the cat is filled with oxygen gas due to high sensor voltage, bank 2	= TRUE -		
					a commanded lambda active	= TRUE -		
					primary A/F commanded lambda	= 1.08008 -		
					for time	>= 3 sec		
					for time	>= 0.2 sec		
					((			
					Secondary O2 sensor voltage	<= 0.150146 V		
					for time	>= 0.1 sec		
					)			
					Or			
					(			
					Secondary O2 sensor voltage	<= 0.150146 V		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					Secondary O2 sensor voltage gradient over 0.05s	<=	0.09944	V/s		
					Secondary O2 sensor voltage gradient over 0.05s	>=	-0.09944	V/s		
					Integrated Oxygen mass flow bank 2	>	0.1	g		
					))					
					(					
					Primary A/F sensor lambda	<=	(a) + (b)			
					(a) Primary lambda control set point	(a)				
					(b) maximum lambda deviation of lean mixture	(b)	0.05005	-		
					Primary A/F sensor lambda	>=	(a) - (b)			
					(a) Primary lambda control set point					
					(b) maximum lambda deviation of rich mixture		0.05005	-		
					for time	>=	0.2	sec		
					Integrated lean exhaust gas mass flow bank 2	>=	15	g		
					)					
					OR					
					Lean lambda is requested and the cat is filled with oxygen gas, bank 2	=	TRUE	-		
					a commanded lambda active	=	TRUE	-		
					primary A/F commanded lambda	=	1.08008	-		
					for time	>=	3	sec		
					for time	>=	0.2	sec		
					Secondary O2 sensor voltage	<=	0.200195	V		
					)					
					)					
					for time	=	A * 0.8	sec		
					where in					
					(A) LRS-plantparameter deadtime, bank 2					
					(					
					Reciprocal of actual lambda value, bank 2	<	(A - (B*C))	-		
					where in					
					(A) Minimal or maximal value of reciprocal lambda after step, bank 2					
					(B) Fraction of step height to end step response measurement	=	0.3000031	-		
					(C) Step height in reciprocal lambda, bank 2					
					OR					
					Difference between time after step measurement and LRS-plantparameter deadtime, bank 2	>	2.5	sec		
					)					
					)					
					)					
					Absolute difference between reciprocal of desired lamda limitation of sensor 1, bank 2 and reciprocal lambda setpoint in combustion chamber	>	0.05	-		
					for time	=	A * 0.8	sec		
					where in					
					(A) LRS-plantparameter deadtime, bank 2					
					)					
					(					
					(					
					Number of evaluated steps in lean-rich direction (sensor 1, bank 2)	<	2	counts		
					Number of evaluated steps in lean-rich direction (sensor 1, bank 2)	>	0	-		
					(					
					Delay time from step response measurement in lean-rich direction (sensor 1, bank 2)	<=	A - ((A - B)* (C / D))	sec		
					where in					
					(A) Delay time of best part unacceptable	=	0	sec		
					(B) Fault threshold of delay time (step response, lean to rich)	=	0.6	sec		
					(C) Necessary number of measurements for fault-confirmation	=	2	counts		
					(D) Number of evaluated steps in lean-rich direction (sensor 1, bank 2)					
					Transition time from step response measurement in lean-rich direction (sensor 1, bank 2)	<=	A - ((A - B)* (C / D))	sec		
					where in					
					(A) Transition time of best part unacceptable	=	0	sec		
					(B) Fault threshold of transition time (step response, lean to rich)	=	0.8	sec		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 TEST GROUP: KGMXV04.2088 EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					(C) Necessary number of measurements for fault-confirmation	= 2 counts		
					(D) Number of evaluated steps in lean-rich direction (sensor 1, bank 2)			
					)			
					OR			
					Number of evaluated steps in lean-rich direction (sensor 1, bank 2)	>= 2 counts		
					)			
					OR			
					(			
					Number of evaluated steps in rich-lean direction (sensor 1, bank 2)	< 2 counts		
					Number of evaluated steps in rich-lean direction (sensor 1, bank 2)	> 0 -		
					(			
					Delay time from step response measurement in rich-lean direction (sensor 1, bank 2)	<= A - ((A - B)* (C / D)) sec		
					where in			
					(A) Delay time of best part unacceptable	= 0 sec		
					(B) Fault threshold of delay time (step response,rich to lean)	= 0.6 sec		
					(C) Necessary number of measurements for fault-confirmation	= 2 counts		
					(D) Number of evaluated steps in rich-lean direction (sensor 1, bank 2)			
					Transition time from step response measurement in rich-lean direction (sensor 1, bank 2)	<= A - ((A - B)* (C / D)) sec		
					where in			
					(A) Transition time of best part unacceptable	= 0 sec		
					(B) Fault threshold of transition time (step response,rich to lean)	= 0.8 sec		
					(C) Necessary number of measurements for fault-confirmation	= 2 counts		
					(D) Number of evaluated steps in rich-lean direction (sensor 1, bank 2)			
					)			
					OR			
					Number of evaluated steps in rich-lean direction (sensor 1, bank 2)	>= 2 counts		
					)			
					)			
		Path 2: Step response/identifcation measurement of Oxygen sensor of bank 2 and pattern not detected with Step-response measurement within parallelization	**Step response measurement:**		Non bank-specific enabling conditions for continuous identification	= TRUE -		
			(		(			
			Arithmetical average value of delay time from step response measurement in lean-rich direction (sensor 1, bank 2)	> 0.6 sec	Vehicle speed	>= 3.107520199 mph		
			OR		Factor fuel purge adaptation factor	<= 40		
			Arithmetical average value of transition time from step response measurement in lean-rich direction, (sensor 1, bank 2)	> 0.8 sec	(			
			OR		Integral of purge mass flow after a longer purge stop	>= 1.02 g		
			Arithmetical average value of delay time from step response measurement in rich-lean direction, (sensor 1, bank 2)	> 0.6 sec	OR			
			OR		Purge mass flow for DTEV	< 0.027777778 g/sec		
			Arithmetical average value of transition time from step response measurement in rich-lean direction, (sensor 1, bank 2)	> 0.8 sec	)			
			)		(			
			OR		Condition gear-shift in process	= FALSE -		
			Identification measurement:		Condition instationary state during half engine mode switching	= FALSE -		
			(		)			
			Status of step response measurement (pattern is not detected bank 2)	= 0 -	End of start is reached	= TRUE -		
			(		for time	= 7 sec		
			Sum time of identification in lean-rich direction (sensor 1, bank 2)	> 1.5 sec	(			
			OR		Fault suspicion reported by continuous identification	= TRUE -		
			Sum time of identification in rich-lean direction (sensor 1, bank 2)	> 1.5 sec	(			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
			)		Sum of identified delay time and transition time in lean to rich direction, bank 2	>	0.2	sec		
			)		OR Sum of identified delay time and transition time in rich to lean direction, bank 2	>	0.2	sec		
					OR Difference between sum of delay times and transition times in lean to rich and rich to lean directions respectively where in (A) Identified transition time in lean-rich direction (bank 2) (B)Identified delay time in lean-rich direction (bank 2) (C) Identified transition time in rich-lean direction (bank 2) (D) Identified delay time in rich-lean direction (bank 2) OR	>	0.2	sec		
					Negative value of the sum of delay times and transition times in rich to lean and lean to rich directions respectively where in (A) Identified transition time in lean-rich direction (bank 1) (B)Identified delay time in lean-rich direction (bank 1) (C) Identified transition time in rich-lean direction (bank 1) (D) Identified delay time in rich-lean direction (bank 1) (	>	0.2	sec		
					Absolute value of filling gradient	<=	12	%		
					for time)) OR	=	3	sec		
					Fault suspicion reported by continuous identification (	=	FALSE	-		
					Absolute value of filling gradient	<=	12	%		
					for time)) (	=	1	sec		
					Condition half engine mode (HEM) active (	=	TRUE	-		
					Relative air mass / 2	>	0	%		
					for time) OR	=	0	sec		
					Condition half engine mode (HEM) active (	=	FALSE	-		
					Relative air mass	>	0	%		
					for time))	=	0	sec		
					Ambient pressure)	>	0	kPa		
					Bank-specific enabling conditions for continuous identification, bank 2 (Enabling conditions for lambda stability ((	=	TRUE	-		
					Lambda closed loop control, Bank 2 (	=	TRUE	-		
					Lambda control disabled during after cylinder cut−off, bank 2	=	FALSE	-		
					Lambda swtiched ON after fuel cutoff, bank 2 (	=	TRUE	-		
					Fuel cut off is active (	=	FALSE	-		
					Time running down after fuel cut−off for enabling lambda control OR (	>	8	sec		
					Absolute value of diffence in lambda of bank 2	<=	0.1001	-		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Difference of counter time and plant time constant a-(b+c) where a is Time running down after fuel cut–off for enabling lambda control b is plant time constant for continuous air/fuel control, bank 2 c is plant parameter for dead time for lambda control, bank 2	> 0 sec		
					)			
					)			
					)			
					LSU sensor upstream to catalyst ready for operation, bank 2	= TRUE -		
					(			
					lambda sensor 1 temperature	>= 654.998 deg C		
					)			
					Lambda control disabled by a fault, bank 2	= FALSE -		
					(			
					Catalyst damaging misfire rate exceeded	= FALSE -		
					Injector power stage fault is active	= FALSE -		
					Camshaft fault in critical operating range present and MAF is main air charge sensor	= FALSE -		
					)			
					lambda control is active since warmup is finished	= TRUE -		
					Relative air charge	> 0 %		
					for time	>= 2 sec		
					Lamda control active due to GDI mode change	= TRUE -		
					(			
					GDI mode homogeneous	= TRUE -		
					for time	>= 0.8 sec		
					)			
					)			
					)			
					Rich catalyst purge is active, bank 2	= TRUE -		
					(			
					Lambda for component protection is active	= FALSE -		
					OR			
					Number of the lambda requests determining the lambda setpoint	!= 5 -		
					)			
					for time	= 2 sec		
					)			
					Plant time constant of continuous af control, base value, bank 2, linear quantization	<= 0.25 sec		
					(			
					Exhaust gas mass flow Cat 1, Bank 2	<= 55.55555556 g/sec		
					(			
					Difference between exhaust gas mass flow Cat 1, Bank 2 with its filtered value	>= -910.2222222 g/sec		
					Difference between exhaust gas mass flow Cat 1, Bank 2 with its filtered value	<= 910.1944444 g/sec		
					)			
					for time	= 0.01 sec		
					)			
					Sensor LSU upstream cat ready for operation	= TRUE -		
					for time	= 10 sec		
					Enable LSU dynamic diagnosis w.r.t. scavenging	= TRUE -		
					(			
					Ratio of total air mass to mass in cylinder	<= 1.02002 -		
					Filtered air mass	>= 50 g		
					)			
					(			
					(			
					Transition time from step response measurement in rich-lean direction (sensor 1, bank 2)	< 0.2 sec		
					Transition time from step response measurement in lean-rich direction (sensor 1, bank 2)	< 0.2 sec		
					)			
					(			
					Transition time from step response measurement in rich-lean direction (sensor 1, bank 2)	< 0.1 sec		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					Transition time from step response measurement in lean-rich direction (sensor 1, bank 2)	<	0.1	sec		
					)					
					)					
					Injection valve cut-off on Bank 2	=	FALSE	-		
					)		3	sec		
					Identification trigger: rate of change of modeled lambda in lean to rich direction, bank 2	>=	0.019989	-		
					Identification trigger: rate of change of modeled lambda in rich to lean direction, bank 2	>=	0.019989	-		
					(					
					Number of step response measurements in lean-rich direction for driving cylce (sensor 1, bank 2)	=	0	-		
					(					
					Time to evaluate loss function, bank 2	>=	30	sec		
					OR					
					Square of difference between band pass filtered reciprocal lambda and modelled reciprocal lambda values (sensor 1, bank 2)	>=	100	-		
					)					
					)					
					OR					
					Enabling conditions for step response measurement					
					(					
					(					
					(					
					(					
					Lean lambda is requested and the cat is filled with oxygen gas, bank 2	=	TRUE	-		
					a commanded lambda active	=	TRUE	-		
					primary A/F commanded lambda	=	1.08008	-		
					for time	>=	3	sec		
					for time	>=	0.2	sec		
					Secondary O2 sensor voltage	<=	0.200195	V		
					(					
					Rich lambda is requested and the cat is filled with rich gas due to low sensor voltage, bank 2	=	TRUE	-		
					a commanded lambda active	=	TRUE	-		
					primary A/F commanded lambda bank2	=	0.91992	-		
					for time	>=	3	sec		
					for time	>=	0.2	sec		
					OR					
					Rich lambda is requested to empty the oxygen gas from the cat, bank 2	=	TRUE	-		
					a commanded lambda active	=	TRUE	-		
					primary A/F commanded lambda	=	0.91992	-		
					for time	>=	3	sec		
					for time	>=	0.2	sec		
					(					
					Secondary O2 sensor voltage	>=	0.85083	V		
					Or					
					(					
					Secondary O2 sensor voltage	>=	0.749512	V		
					Secondary O2 sensor voltage	<=	0.09944	V/s		
					Secondary O2 sensor voltage	>=	-0.09944	V/s		
					Integrated Oxygen mass flow bank 2	>	0.15	g		
					))					
					(					
					Primary A/F sensor lambda	<=	(a) + (b)			
					(a) Primary lambda control set point	(a)				
					(b) maximum lambda deviation of lean mixture	(b)	0.05005	-		
					Primary A/F sensor lambda	>=	(a) - (b)			
					(a) Primary lambda control set point					
					(b) maximum lambda deviation of rich mixture		0.05005	-		
					for time	>=	0.2	sec		
					Integrated rich exhaust gas mass flow bank 2	>=	15	g		
					)					
					)					
					for time	=	A * 0.8	sec		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					where in					
					(A) LRS-plantparameter deadtime, bank 2					
					and					
					(					
					Reciprocal of actual lambda value, sensor 1, bank 2	>	(A + (B*C))	-		
					where in					
					(A) Minimal or maximal value of reciprocal lambda after step, bank 2					
					(B) Fraction of step height to end step response measurement	=	0.3000031	-		
					(C) Step height in reciprocal lambda, bank 2					
					OR					
					Difference between time after step measurement and LRS-plantparameter deadtime, bank 2	>	2.5	sec		
					)					
					)					
					OR					
					(					
					(					
					Rich lambda is requested to empty the oxygen gas from the cat, bank 2	=	TRUE	-		
					a commanded lambda active	=	TRUE	-		
					primary A/F commanded lambda	=	0.91992	-		
					for time	>=	3	sec		
					for time	>=	0.2	sec		
					(					
					Secondary O2 sensor voltage	>=	0.85083	V		
					Or					
					(					
					Secondary O2 sensor voltage	>=	0.749512	V		
					Secondary O2 sensor voltage	<=	0.09944	V/s		
					Secondary O2 sensor voltage	>=	-0.09944	V/s		
					Integrated Oxygen mass flow bank 2	>	0.15	g		
					))					
					(					
					Primary A/F sensor lambda	<=	(a) + (b)			
					(a) Primary lambda control set point	(a)				
					(b) maximum lambda deviation of lean mixture	(b)	0.05005	-		
					Primary A/F sensor lambda	>=	(a) - (b)			
					(a) Primary lambda control set point					
					(b) maximum lambda deviation of rich mixture		0.05005	-		
					for time	>=	0.2	sec		
					Integrated rich exhaust gas mass flow bank 2	>=	15	g		
					(					
					Lean lambda is requested and the cat is filled with oxygen gas due to high sensor voltage, bank 2	=	TRUE	-		
					a commanded lambda active	=	TRUE	-		
					primary A/F commanded lambda	=	1.08008	-		
					for time	>=	3	sec		
					for time	>=	0.2	sec		
					((					
					Secondary O2 sensor voltage	<=	0.150146	V		
					for time	>=	0.1	sec		
					)					
					Or					
					(					
					Secondary O2 sensor voltage	<=	0.150146	V		
					Secondary O2 sensor voltage gradient over 0.05s	<=	0.09944	V/s		
					Secondary O2 sensor voltage gradient over 0.05s	>=	-0.09944	V/s		
					Integrated Oxygen mass flow bank 2	>	0.1	g		
					))					
					(					
					Primary A/F sensor lambda	<=	(a) + (b)			
					(a) Primary lambda control set point	(a)				
					(b) maximum lambda deviation of lean mixture	(b)	0.05005	-		
					Primary A/F sensor lambda	>=	(a) - (b)			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					(a) Primary lambda control set point					
					(b) maximum lambda deviation of rich mixture		0.05005	-		
					for time	>=	0.2	sec		
					Integrated lean exhaust gas mass flow bank 2	>=	15	g		
					OR					
					Lean lambda is requested and the cat is filled with oxygen gas, bank 2	=	TRUE	-		
					a commanded lambda active	=	TRUE	-		
					primary A/F commanded lambda	=	1.08008	-		
					for time	>=	3	sec		
					for time	>=	0.2	sec		
					Secondary O2 sensor voltage	<=	0.200195	V		
					)					
					)					
					for time	=	A * 0.8	sec		
					where in					
					(A) LRS-plantparameter deadtime, bank 2					
					(					
					Reciprocal of actual lambda value, bank 2	<	(A - (B*C))	-		
					where in					
					(A) Minimal or maximal value of reciprocal lambda after step, bank 2					
					(B) Fraction of step height to end step response measurement	=	0.3000031	-		
					(C) Step height in reciprocal lambda, bank 2					
					OR					
					Difference between time after step measurement and LRS-plantparameter deadtime, bank 2	>	2.5	sec		
					)					
					)					
					)					
					Absolute difference between reciprocal of desired lamda limitation of sensor 1, bank 2 and reciprocal lambda setpoint in combustion chamber	>	0.05	-		
					for time	=	A * 0.8	sec		
					where in					
					(A) LRS-plantparameter deadtime, bank 2					
					)					
					(					
					(					
					Number of evaluated steps in lean-rich direction (sensor 1, bank 2)	<	2	counts		
					Number of evaluated steps in lean-rich direction (sensor 1, bank 2)	>	0	-		
					(					
					Delay time from step response measurement in lean-rich direction (sensor 1, bank 2)	<=	A - ((A - B)* (C / D))	sec		
					where in					
					(A) Delay time of best part unacceptable	=	0	sec		
					(B) Fault threshold of delay time (step response, lean to rich)	=	0.6	sec		
					(C) Necessary number of measurements for fault-confirmation	=	2	counts		
					(D) Number of evaluated steps in lean-rich direction (sensor 1, bank 2)					
					Transition time from step response measurement in lean-rich direction (sensor 1, bank 2)	<=	A - ((A - B)* (C / D))	sec		
					where in					
					(A) Transition time of best part unacceptable	=	0	sec		
					(B) Fault threshold of transition time (step response, lean to rich)	=	0.8	sec		
					(C) Necessary number of measurements for fault-confirmation	=	2	counts		
					(D) Number of evaluated steps in lean-rich direction (sensor 1, bank 2)					
					)					
					OR					
					Number of evaluated steps in lean-rich direction (sensor 1, bank 2)	>=	2	counts		
					)					
					OR					
					(					
					Number of evaluated steps in rich-lean direction (sensor 1, bank 2)	<	2	counts		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Number of evaluated steps in rich-lean direction (sensor 1, bank 2)	> 0 -		
					(			
					Delay time from step response measurement in rich-lean direction (sensor 1, bank 2)	<= A - ((A - B)* (C / D)) sec		
					where in			
					(A) Delay time of best part unacceptable	= 0 sec		
					(B) Fault threshold of delay time (step response,rich to lean)	= 0.6 sec		
					(C) Necessary number of measurements for fault-confirmation	= 2 counts		
					(D) Number of evaluated steps in rich-lean direction (sensor 1, bank 2)			
					Transition time from step response measurement in rich-lean direction (sensor 1, bank 2)	<= A - ((A - B)* (C / D)) sec		
					where in			
					(A) Transition time of best part unacceptable	= 0 sec		
					(B) Fault threshold of transition time (step response,rich to lean)	= 0.8 sec		
					(C) Necessary number of measurements for fault-confirmation	= 2 counts		
					(D) Number of evaluated steps in rich-lean direction (sensor 1, bank 2)			
					)			
					OR			
					Number of evaluated steps in rich-lean direction (sensor 1, bank 2)	>= 2 counts		
					)			
					)			
					No pending or confirmed DTCs	= see sheet inhibit table -		
					Basic enable conditions met	= see sheet enable tables -		
Upstream Exhaust Gas sensor, Bank 1	P2196	Plausibility check of upstream exhaust gas sensor when the lambda offset is lesser than the calibrated threshold	Lambda offset of upstream exhaust gas sensor	< -0.059998 -	Debounce condition for fault confirmation by offset adaptation (sensor 1, bank 1)	= TRUE -	once per driving cycle	2 Trips
					(			
					Debouncing of offset fault by slow offset adaptation	= TRUE -		
					(			
					Slow offset adaptation	= TRUE -		
					(			
					Bit p-part controlability primary control enable	= TRUE -		
					(			
					(			
					Lambda regulator setpoint active	= TRUE -		
					(			
					Width of dead zone for lambda control deviation	>= 0.999969 -		
					OR			
					(			
					Lambda closed loop control (upstream catalyst), bank 1	= TRUE -		
					OR			
					(			
					Lambda setpoint for sensor after addition of trim control action is not eqaul to 0	= TRUE -		
					Difference between upper limit action value lambda control and temporary value before test for enleanment protection	>= 0 -		
					Difference between temporary value before test for enleanment protection and lower bound of dfr during enleanmant protection	>= 0 -		
					Lambda (measured and setpoint) is below minimal measurable lambda (bank 1)	= FALSE -		
					TEMIN-limitation active, bench 1	= FALSE -		
					)			
					)			
					)			
					Current lowpass value of p-part control upstream primary control enable	> 0 %		
					Lambda closed loop control (upstream catalyst), bank 1	= TRUE -		
					(			
					Lambda control disabled during or after cylinder cut~off	= FALSE -		
					Lambda swtiched ON after fuel cutoff	= TRUE -		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 TEST GROUP: KGMXV04.2088 EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					(					
					Fuel cut off is active	=	FALSE	-		
					(					
					Time running down after fuel cut−off for enabling lambda control	>	8	sec		
					OR					
					(					
					Absolute value of control difference in lambda, bank 1	<=	0.1001	-		
					Difference of counter time and plant time constant a-(b+c) where a is Time running down after fuel cut−off for enabling lambda control b is plant time constant for continuous air/fuel control c is plant parameter for dead time for lambda control	>	0	sec		
					)					
					)					
					)					
					LSU sensor upstream to catalyst ready for operation	=	TRUE	-		
					(					
					lambda sensor 1 temperature, bank 1	>=	654.998	deg C		
					)					
					Lambda control disabled by a fault	=	FALSE	-		
					lambda control is active since warmup is finished	=	TRUE	-		
					Relative air charge	>	0	%		
					for time	>=	2	sec		
					)					
					HEM condition to block lambda closed loop control upstream catalyst	=	FALSE	-		
					Lamda control active due to GDI mode change	=	TRUE	-		
					(					
					GDI mode homogeneous	=	TRUE	-		
					for time	>=	0.8	sec		
					)					
					)					
					(					
					Lambda control enabled for Cold operation sensor 2 bank 1	=	TRUE	-		
					OR					
					HEGO sensor 2 bank 1, signal valid	=	TRUE	-		
					(					
					Status of heating enable conditions for the sensor operating readiness	=	TRUE	-		
					(					
					Protective heating is finished	=	TRUE	-		
					for time	>=	15	sec		
					OR					
					Internal resistance OK for operating readiness	=	TRUE	-		
					(					
					Unfiltered internal resistance of HEGO sensor	<=	2000	Ohm		
					Protective heating is finished	=	TRUE	-		
					Counter for valid internal resistance measurements	>=	3	counts		
					)					
					)					
					Status of sensor signal enable conditions for the sensor operating readiness	=	TRUE	-		
					(					
					Internal resistance OK for operating readiness	=	TRUE	-		
					OR					
					(					
					(					
					Output voltage of HEGO Sensor	>=	0.551758	V		
					Output voltage of HEGO Sensor	<=	1.201172	V		
					)					
					OR					
					Output voltage of HEGO Sensor	<=	0.322266	V		
					)					
					OR					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					Sensor voltage stuck in countervoltage band	=	TRUE	-		
					(					
					(					
					(					
					Output voltage of HEGO Sensor	<	0.551758	V		
					Output voltage of HEGO Sensor	>	0.322266	V		
					)					
					(					
					Sensor open circuit fault existed in previous trip	=	TRUE	-		
					OR					
					Sensor open circuit fault currently not detected	=	TRUE	-		
					)					
					Electrical diagnostics enabled	=	TRUE	-		
					)					
					for time	>=	20	sec		
					)					
					)					
					for time	>=	0.2	sec		
					)					
					)					
					)					
					Bit p-part system balanced primary control enable	=	TRUE	-		
					(					
					(					
					Lambda setpoint for sensor is set equal to 1	=	TRUE	-		
					OR					
					Lambda setpoint for sensor is set equal to 1	=	FALSE	-		
					for time	>=	10	sec		
					)					
					Rich catalyst purge	=	FALSE	-		
					Mass flow of exhaust gas, sensor 2	>	25	g		
					)					
					P-part active from temperature and dynamic diagnosis	=	TRUE	-		
					(					
					Temperature of catalyst 1	>=	349.96	deg C		
					Temperature of catalyst 1	<	899.96	deg C		
					)					
					)					
					Bit I-part global primary control enable	=	TRUE	-		
					(					
					(					
					Current lowpass value of I-part load primary control enable	>	-1.5938	%		
					Current lowpass value of I-part load primary control enable	<=	1.5938	%		
					)					
					Diagnosis of canister purge system is active	=	FALSE	-		
					Ratio total charge to charge in cylinder	<=	1	-		
					Width of dead zone for lambda control deviation	=	0	-		
					Maximum value among the engine coolant temperature and model-based substitute value for engine temperature signal in case of error	>	34.96	deg C		
					(					
					Bit I-part global load and engine speed control enable	=	TRUE	-		
					(					
					Engine speed with low resolution	<	2600	rpm		
					Engine speed with low resolution	>=	1000	rpm		
					(					
					Half engine mode active	=	TRUE	-		
					(					
					Relative air mass during half engine mode (see Look-Up table #P2096-2)	<	30 to 90	%		
					Relative air mass during half engine mode (see Look-Up table #P2096-3)	>=	15 to 20.3	%		
					)					
					OR					
					Half engine mode active	=	FALSE	-		
					(					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					Relative air mass (see Look-Up Table #P2096-4)	<	30 to 90	%		
					Relative air mass (see Look-Up Table #P2096-5)	>=	15 to 20.3	%		
					)					
					)					
					)					
					)					
					)					
					(					
					Bit i-part system primary control enable	=	TRUE	-		
					(					
					Current integrator value of P-part balanced primary control enable	>	150	g		
					(					
					(					
					Dew point end of sensor 2 Bank1 is reached	=	TRUE	-		
					End of start is reached	=	TRUE	-		
					Exhaust gas mass flow sensor 2 Bank 1	>	179.91	g		
					)					
					OR					
					(					
					(					
					Dew point end of sensor 2 reached	=	FALSE	-		
					OR					
					End of start is reached	=	FALSE	-		
					)					
					Exhaust gas mass flow sensor 2	>	199.82	g		
					)					
					)					
					)					
					Bit i-part system temperature primary control enable	=	TRUE	-		
					(					
					Temperature of catalyst 1	>	349.96	deg C		
					Temperature of catalyst 1	<	869.96	deg C		
					)					
					)					
					)					
					Cumulated time in which slow offset adaptation was active	>=	100	sec		
					)					
					Debounce condition for fault confirmation by fast offset adaptation (sensor 1, bank 1)	=	TRUE	-		
					General enabling condition of fast offset adaptation					
					(					
					Enabling condition of fast offset adaptation due to catalyst conditioning	=	TRUE	-		
					(					
					(					
					Bit signal valid, HEGO sensor 2 bank 1	=	TRUE	-		
					Flag lambda setpoint for sensor equal to 1	=	TRUE	-		
					Rich catalyst purge	=	FALSE	-		
					Bank-independent disabling conditions of fast offset adaptation	=	FALSE	-		
					(					
					Fuel cut-off	=	TRUE	-		
					Mass flow exhaust gas catalyst 1	>	300	g		
					)					
					OR					
					(					
					Fuel cut-off	=	FALSE	-		
					Mass flow exhaust gas catalyst 1	>	180	g		
					)					
					)					
					(					
					(					
					Parallelization done at least once from LSU plausibility diagnosis point of view (sensor 1, bank 1)	=	TRUE	-		
					(					
					(					
					Target sensor voltage for rich during active parallelisation reached once, sensor 1, bank 2	=	TRUE	-		
					Oil gas mass flow by active lambda shifting minus the maximal possible influence of LSU offset part, segment 1, bank 1	>=	1.5	g		
					for time	>=	1	sec		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					)					
					OR					
					(					
					Lean target sensor voltage during active parallelisation reached once, sensor 1, bank 2	=	TRUE	-		
					Oxygen mass flow in catalyst 1, deduct from maximum present LSU Offset in a fault free system	>=	1.2	g		
					for time	>=	1	sec		
					)					
					)					
					OR					
					Dynamic diagnosis error of upstream exhaust gas sensor is not set	=	TRUE	-		
					)					
					OR					
					(					
					(					
					lambda control is set when lambda controller reaches lower limit FRMIN	=	TRUE	-		
					Lambda actual value sensor 1 bank 1	<	1	-		
					Output voltage of HEGO sensor 2 bank 1	<	0.4	-		
					)					
					OR					
					(					
					lambda control is set when lambda controller reaches lower limit FRMAX	=	TRUE	-		
					Lambda actual value sensor 1 bank 1	>	1			
					Output voltage of HEGO sensor 2 bank 1	>	0.6			
					)					
					for time	>=	2	sec		
					Condition for Lambda closed loop control upstream catalyst; bank 1	=	TRUE	-		
					)					
					for time	>=	1	sec		
					)					
					(					
					(					
					Temperature of catalyst 1	>	499.96	deg C		
					Temperature of catalyst 1	<	899.96	deg C		
					)					
					for time	=	0	sec		
					)					
					(					
					(					
					Mass flow exhaust gas catalyst 1	>	3.888888889	g/sec		
					Mass flow exhaust gas catalyst 1	<	69.44444444	g/sec		
					)					
					OR					
					(					
					(					
					Mass flow exhaust gas catalyst 1	>	2.083333333	g/sec		
					Mass flow exhaust gas catalyst 1	<=	3.888888889	g/sec		
					)					
					for time	>=	4	sec		
					)					
					)					
					Condition for upstream cat LSU ready for operation f(lamsons_w)	=	TRUE	-		
					(					
					Sensor type sensor 1 bank 1	>	0	-		
					Lambda signal quality sensor 1 bank 1	<=	12	-		
					)					
					Hydrogen-correction-voltage, HEGO sensor 2 bank 1 with high resolution	<=	0.08057	V		
					(					
					CAT damage during past interval	=	FALSE	-		
					(					
					Ratio total charge to charge in cylinder	<=	1.02002	-		
					Width of dead zone for lambda control deviation	=	0	-		
					)					
					)					
					Mass flow of exhaust gas catalyst 1	>=	200	g		
					Difference betweeen Lambda offset (sensor 1, bank 1) and Lambda offset (delayed by one calculation raster)	<=	0.0079956	-		
					(					
					Counter for no step in offset or increasing offset in a row	>=	2	counts		
					OR					
					Counter for exhaust masses to debounce fault with fast offset adaptation	>=	4	counts		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					)			
					)			
					)			
					)			
					)			
					No pending or confirmed DTCs	= see sheet inhibit table -		
					Basic enable conditions met	= see sheet enable tables -		
Upstream Exhaust Gas sensor, Bank 1	P2195	Plausibility check of upstream exhaust gas sensor when the lambda offset is greater than the calibrated threshold	Lambda offset of upstream exhaust gas sensor	> 0.059998 -	Debounce condition for fault confirmation by offset adaptation (sensor 1, bank 1)	= TRUE -	once per driving cycle	2 Trips
					(			
					Debouncing of offset fault by slow offset adaptation	= TRUE -		
					(			
					Slow offset adaptation	= TRUE -		
					(			
					Bit p-part controlability primary control enable	= TRUE -		
					(			
					(			
					Lambda regulator setpoint active	= TRUE -		
					(			
					Width of dead zone for lambda control deviation	>= 0.999969 -		
					OR			
					(			
					Lambda closed loop control (upstream catalyst), bank 1	= TRUE -		
					OR			
					(			
					Lambda setpoint for sensor after addition of trim control action is not eqaul to 0	= TRUE -		
					Difference between upper limit action value lambda control and temporary value before test for enleanment protection	>= 0 -		
					Difference between temporary value before test for enleanment protection and lower bound of dfr during enleanmant protection	>= 0 -		
					Lambda (measured and setpoint) is below minimal measurable lambda (bank 1)	= FALSE -		
					TEMIN-limitation active, bench 1	= FALSE -		
					)			
					)			
					)			
					Current lowpass value of p-part control upstream primary control enable	> 0 %		
					Lambda closed loop control (upstream catalyst), bank 1	= TRUE -		
					(			
					Lambda control disabled during or after cylinder cut−off	= FALSE -		
					Lambda swtiched ON after fuel cutoff	= TRUE -		
					(			
					Fuel cut off is active	= FALSE -		
					(			
					Time running down after fuel cut−off for enabling lambda control	> 8 sec		
					OR			
					(			
					Absolute value of control difference in lambda, bank 1	<= 0.1001 -		
					Difference of counter time and plant time constant a-(b+c) where a is Time running down after fuel cut−off for enabling lambda control b is plant time constant for continuous air/fuel control c is plant parameter for dead time for lambda control	> 0 sec		
					)			
					)			
					)			
					LSU sensor upstream to catalyst ready for operation	= TRUE -		
					(			
					lambda sensor 1 temperature, bank 1	>= 654.998 deg C		
					)			
					Lambda control disabled by a fault	= FALSE -		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					lambda control is active since warmup is finished	= TRUE -		
					Relative air charge	> 0 %		
					for time	>= 2 sec		
					)			
					HEM condition to block lambda closed loop control upstream catalyst	= FALSE -		
					Lamda control active due to GDI mode change	= TRUE -		
					(			
					GDI mode homogeneous	= TRUE -		
					for time	>= 0.8 sec		
					)			
					)			
					(			
					Lambda control enabled for Cold operation sensor 2 bank 1	= TRUE -		
					OR			
					HEGO sensor 2 bank 1, signal valid	= TRUE -		
					(			
					Status of heating enable conditions for the sensor operating readiness	= TRUE -		
					(			
					Protective heating is finished	= TRUE -		
					for time	>= 15 sec		
					OR			
					Internal resistance OK for operating readiness	= TRUE -		
					(			
					Unfiltered internal resistance of HEGO sensor	<= 2000 Ohm		
					Protective heating is finished	= TRUE -		
					Counter for valid internal resistance measurements	>= 3 counts		
					)			
					)			
					Status of sensor signal enable conditions for the sensor operating readiness	= TRUE -		
					(			
					Internal resistance OK for operating readiness	= TRUE -		
					OR			
					(			
					(			
					Output voltage of HEGO Sensor	>= 0.551758 V		
					Output voltage of HEGO Sensor	<= 1.201172 V		
					)			
					OR			
					Output voltage of HEGO Sensor	<= 0.322266 V		
					)			
					OR			
					Sensor voltage stuck in countervoltage band	= TRUE -		
					(			
					(			
					(			
					Output voltage of HEGO Sensor	< 0.551758 V		
					Output voltage of HEGO Sensor	> 0.322266 V		
					)			
					(			
					Sensor open circuit fault existed in previous trip	= TRUE -		
					OR			
					Sensor open circuit fault currently not detected	= TRUE -		
					)			
					Electrical diagnostics enabled	= TRUE -		
					)			
					for time	>= 20 sec		
					)			
					)			
					for time	>= 0.2 sec		
					)			
					)			
					)			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					Bit p-part system balanced primary control enable	=	TRUE	-		
					(					
					(					
					Lambda setpoint for sensor is set equal to 1	=	TRUE	-		
					OR					
					Lambda setpoint for sensor is set equal to 1	=	FALSE	-		
					for time	>=	10	sec		
					)					
					Rich catalyst purge	=	FALSE	-		
					Mass flow of exhaust gas, sensor 2	>	25	g		
					)					
					P-part active from temperature and dynamic diagnosis	=	TRUE	-		
					(					
					Temperature of catalyst 1	>=	349.96	deg C		
					Temperature of catalyst 1	<	899.96	deg C		
					)					
					)					
					Bit I-part global primary control enable	=	TRUE	-		
					(					
					(					
					Current lowpass value of I-part load primary control enable	>	-1.5938	%		
					Current lowpass value of I-part load primary control enable	<=	1.5938	%		
					)					
					Diagnosis of canister purge system is active	=	FALSE	-		
					Ratio total charge to charge in cylinder	<=	1	-		
					Width of dead zone for lambda control deviation	=	0	-		
					Maximum value among the engine coolant temperature and model-based substitute value for engine temperature signal in case of error	>	34.96	deg C		
					(					
					Bit I-part global load and engine speed control enable	=	TRUE	-		
					(					
					Engine speed with low resolution	<	2600	rpm		
					Engine speed with low resolution	>=	1000	rpm		
					(					
					Half engine mode active	=	TRUE	-		
					(					
					Relative air mass during half engine mode (see Look-Up table #P2096-2)	<	30 to 90	%		
					Relative air mass during half engine mode (see Look-Up table #P2096-3)	>=	15 to 20.3	%		
					)					
					OR					
					Half engine mode active	=	FALSE	-		
					(					
					Relative air mass (see Look-Up Table #P2096-4)	<	30 to 90	%		
					Relative air mass (see Look-Up Table #P2096-5)	>=	15 to 20.3	%		
					)					
					)					
					)					
					)					
					)					
					(					
					Bit i-part system primary control enable	=	TRUE	-		
					(					
					Current integrator value of P-part balanced primary control enable	>	150	g		
					(					
					(					
					Dew point end of sensor 2 Bank1 is reached	=	TRUE	-		
					End of start is reached	=	TRUE	-		
					Exhaust gas mass flow sensor 2 Bank 1	>	179.91	g		
					)					
					OR					
					(					
					(					
					Dew point end of sensor 2 reached	=	FALSE	-		
					OR					
					End of start is reached	=	FALSE	-		
					)					
					Exhaust gas mass flow sensor 2	>	199.82	g		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					)			
					)			
					)			
					Bit i-part system temperature primary control enable	= TRUE -		
					(			
					Temperature of catalyst 1	> 349.96 deg C		
					Temperature of catalyst 1	< 869.96 deg C		
					)			
					)			
					)			
					Cumulated time in which slow offset adaptation was active	>= 100 sec		
					)			
					Debounce condition for fault confirmation by fast offset adaptation (sensor 1, bank 1)	= TRUE -		
					General enabling condition of fast offset adaptation			
					(			
					Enabling condition of fast offset adaptation due to catalyst conditioning	= TRUE -		
					(			
					(			
					Bit signal valid, HEGO sensor 2 bank 1	= TRUE -		
					Flag lambda setpoint for sensor equal to 1	= TRUE -		
					Rich catalyst purge	= FALSE -		
					Bank-independent disabling conditions of fast offset adaptation	= FALSE -		
					(			
					Fuel cut-off	= TRUE -		
					Mass flow exhaust gas catalyst 1	> 300 g		
					)			
					OR			
					(			
					Fuel cut-off	= FALSE -		
					Mass flow exhaust gas catalyst 1	> 180 g		
					)			
					)			
					(			
					(			
					Parallelization done at least once from LSU plausibility diagnosis point of view (sensor 1, bank 1)	= TRUE -		
					(			
					(			
					Target sensor voltage for rich during active parallelisation reached once, sensor 1, bank 2	= TRUE -		
					Oil gas mass flow by active lambda shifting minus the maximal possible influence of LSU offset part, segment 1, bank 1	>= 1500		
					for time	>= 1 sec		
					)			
					OR			
					(			
					Lean target sensor voltage during active parallelisation reached once, sensor 1, bank 2	= TRUE -		
					Oxygen mass flow in catalyst 1, deduct from maximum present LSU Offset in a fault free system	>= 1.2 g		
					for time	>= 1 sec		
					)			
					)			
					OR			
					Dynamic diagnosis error of upstream exhaust gas sensor is not set	= TRUE -		
					)			
					OR			
					(			
					(			
					lambda control is set when lambda controller reaches lower limit FRMIN	= TRUE -		
					Lambda actual value sensor 1 bank 1	< 1 -		
					Output voltage of HEGO sensor 2 bank 1	< 0.4 -		
					)			
					OR			
					(			
					lambda control is set when lambda controller reaches lower limit FRMAX	= TRUE -		
					Lambda actual value sensor 1 bank 1	> 1		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Output voltage of HEGO sensor 2 bank 1	> 0.6		
					)			
					for time	>= 2 sec		
					Condition for Lambda closed loop control upstream catalyst; bank 1	= TRUE -		
					)			
					for time	>= 1 sec		
					)			
					(			
					(			
					Temperature of catalyst 1	> 499.96 deg C		
					Temperature of catalyst 1	< 899.96 deg C		
					)			
					for time	= 0 sec		
					)			
					(			
					(			
					Mass flow exhaust gas catalyst 1	> 3.888888889 g/sec		
					Mass flow exhaust gas catalyst 1	< 69.44444444 g/sec		
					)			
					OR			
					(			
					(			
					Mass flow exhaust gas catalyst 1	> 2.083333333 g/sec		
					Mass flow exhaust gas catalyst 1	<= 3.888888889 g/sec		
					)			
					for time	>= 4 sec		
					)			
					)			
					Condition for upstream cat LSU ready for operation f(lamsons_w)	= TRUE -		
					(			
					Sensor type sensor 1 bank 1	> 0 -		
					Lambda signal quality sensor 1 bank 1	<= 12 -		
					)			
					Hydrogen-correction-voltage, HEGO sensor 2 bank 1 with high resolution	<= 0.08057 V		
					(			
					CAT damage during past interval	= FALSE -		
					(			
					Ratio total charge to charge in cylinder	<= 1.02002 -		
					Width of dead zone for lambda control deviation	= 0 -		
					)			
					)			
					Mass flow of exhaust gas catalyst 1	>= 200 g		
					Difference betweeen Lambda offset (sensor 1, bank 1) and Lambda offset (delayed by one calculation raster)	<= 0.0079956 -		
					(			
					Counter for no step in offset or increasing offset in a row	>= 2 counts		
					OR			
					Counter for exhaust masses to debounce fault with fast offset adaptation	>= 4 counts		
					)			
					)			
					)			
					)			
					)			
					No pending or confirmed DTCs	= see sheet inhibit table -		
					Basic enable conditions met	= see sheet enable tables -		
Upstream Exhaust Gas sensor, Bank 2	P2198	Plausibility check of upstream exhaust gas sensor when the lambda offset is lesser than the calibrated threshold	Lambda offset of upstream exhaust gas sensor, bank 2	< -0.059998 -	Debounce condition for fault confirmation by offset adaptation (sensor 1, bank 2)	= TRUE -	once per driving cycle	2 Trips
					(			
					Debouncing of offset fault by slow offset adaptation, bank 2	= TRUE -		
					(			
					Slow offset adaptation, bank 2	= TRUE -		
					(			
					Bit p-part controlability primary control enable 2	= TRUE -		
					(			
					(			
					Lambda regulator setpoint active, bank 2	= TRUE -		
					(			
					Width of dead zone for lambda control deviation	>= 0.999969 -		
					OR			
					(			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					Lambda closed loop control (upstream catalyst), bank 2	=	TRUE	-		
					OR					
					(					
					Lambda setpoint for sensor after addition of trim control action, bank 2 is not eqaul to 0	=	TRUE	-		
					Difference between upper limit action value lambda control and temporary value before test for enleanment protection, bank 2	>=	0	-		
					Difference between temporary value before test for enleanment protection, bank 2 and lower bound of dfr during enleanmant protection	>=	0	-		
					Lambda (measured and setpoint) is below minimal measurable lambda (bank 2)	=	FALSE	-		
					TEMIN-limitation active, bench 2	=	FALSE	-		
					)					
					)					
					)					
					Current lowpass value of p-part control upstream primary control enable 2	>	0	%		
					Lambda closed loop control (upstream catalyst), bank 2	=	TRUE	-		
					(					
					Lambda control disabled during or after cylinder cut−off, bank 2	=	FALSE	-		
					Lambda swtiched ON after fuel cutoff, bank 2	=	TRUE	-		
					(					
					Fuel cut off is active, bank 2	=	FALSE	-		
					(					
					Time running down after fuel cut−off for enabling lambda control	>	8	sec		
					OR					
					(					
					Absolute value of control difference in lambda, bank 2	<=	0.1001	-		
					Difference of counter time and plant time constant a-(b+c) where a is Time running down after fuel cut−off for enabling lambda control b is plant time constant for continuous air/fuel control, bank 2 c is plant parameter for dead time for lambda control, bank 2	>	0	sec		
					)					
					)					
					)					
					LSU sensor upstream to catalyst ready for operation, bank 2	=	TRUE	-		
					(					
					lambda sensor 1 temperature, bank 2	>=	654.998	deg C		
					)					
					Lambda control disabled by a fault, bank 2	=	FALSE	-		
					lambda control is active since warmup is finished	=	TRUE	-		
					Relative air charge	>	0	%		
					for time	>=	2	sec		
					)					
					HEM condition to block lambda closed loop control upstream catalyst, bank 2	=	FALSE	-		
					Lamda control active due to GDI mode change	=	TRUE	-		
					(					
					GDI mode homogeneous	=	TRUE	-		
					for time	>=	0.8	sec		
					)					
					)					
					(					
					Lambda control enabled for Cold operation sensor 2 bank 2	=	TRUE	-		
					OR					
					HEGO sensor 2 bank 2, signal valid	=	TRUE	-		
					(					
					Status of heating enable conditions for the sensor operating readiness	=	TRUE	-		
					(					
					Protective heating is finished, bank 2	=	TRUE	-		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					for time	>=	15	sec		
					OR					
					Internal resistance OK for operating readiness, bank 2	=	TRUE	-		
					(					
					Unfiltered internal resistance of HEGO sensor, bank 2	<=	2000	Ohm		
					Protective heating is finished, bank 2	=	TRUE	-		
					Counter for valid internal resistance measurements, bank 2	>=	3	counts		
					)					
					)					
					Status of sensor signal enable conditions for the sensor operating readiness, bank 2	=	TRUE	-		
					(					
					Internal resistance OK for operating readiness	=	TRUE	-		
					OR					
					(					
					(					
					Output voltage of HEGO Sensor, bank 2	>=	0.551758	V		
					Output voltae of HEGO Sensor, bank 2	<=	1.201172	V		
					)					
					OR					
					Output voltae of HEGO Sensor, bank 2	<=	0.322266	V		
					)					
					OR					
					Sensor voltage stuck in countervoltage band	=	TRUE	-		
					(					
					(					
					(					
					Output voltage of HEGO Sensor, bank 2	<	0.551758	V		
					Output voltage of HEGO Sensor, bank 2	>	0.322266	V		
					)					
					(					
					Sensor open circuit fault existed in previous trip	=	TRUE	-		
					OR					
					Sensor open circuit fault currently not detected	=	TRUE	-		
					)					
					Electrical diagnostics enabled, bank 2	=	TRUE	-		
					)					
					for time	>=	20	sec		
					)					
					)					
					for time	>=	0.2	sec		
					)					
					)					
					)					
					Bit p-part system balanced primary control enable 2	=	TRUE	-		
					(					
					(					
					Lambda setpoint for sensor is set equal to 1, bank 2	=	TRUE	-		
					OR					
					Lambda setpoint for sensor is set equal to 1, bank 2	=	FALSE	-		
					for time	>=	10	sec		
					)					
					Rich catalyst purge, bank 2	=	FALSE	-		
					Mass flow of exhaust gas, sensor 1, bank 2	>	25	g		
					)					
					P-part active from temperature and dynamic diagnosis, bank 2	=	TRUE	-		
					(					
					Temperature of catalyst 1, bank 2	>=	349.96	deg C		
					Temperature of catalyst 1, bank 2	<	899.96	deg C		
					)					
					)					
					Bit I-part global primary control enable	=	TRUE	-		
					(					
					(					
					Current lowpass value of I-part load primary control enable	>	-1.5938	%		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					Current lowpass value of I-part load primary control enable	<=	1.5938	%		
					)					
					Diagnosis of canister purge system is active	=	FALSE	-		
					Ratio total charge to charge in cylinder	<=	1	-		
					Width of dead zone for lambda control deviation	=	0	-		
					Maximum value among the engine coolant temperature and model-based substitute value for engine temperature signal in case of error	>	34.96	deg C		
					(					
					Bit I-part global load and engine speed control enable	=	TRUE	-		
					(					
					Engine speed with low resolution	<	2600	rpm		
					Engine speed with low resolution	>=	1000	rpm		
					(					
					Half engine mode active	=	TRUE	-		
					(					
					Relative air mass during half engine mode (see Look-Up table #P2096-2)	<	30 to 90	%		
					Relative air mass during half engine mode (see Look-Up table #P2096-3)	>=	15 to 20.3	%		
					)					
					OR					
					Half engine mode active	=	FALSE	-		
					(					
					Relative air mass (see Look-Up Table #P2096-4)	<	30 to 90	%		
					Relative air mass (see Look-Up Table #P2096-5)	>=	15 to 20.3	%		
					)					
					)					
					)					
					)					
					)					
					(					
					Bit i-part system primary control enable, bank 2	=	TRUE	-		
					(					
					Current integrator value of P-part balanced primary control enable, bank 2	>	150	g		
					(					
					(					
					Dew point end of sensor 1 Bank 2 is reached	=	TRUE	-		
					End of start is reached	=	TRUE	-		
					Exhaust gas mass flow sensor 1 Bank 2	>	179.91	g		
					)					
					OR					
					(					
					(					
					Dew point end of sensor 2 reached, bank 2	=	FALSE	-		
					OR					
					End of start is reached	=	FALSE	-		
					)					
					Exhaust gas mass flow sensor 1 Bank 2	>	199.82	g		
					)					
					)					
					Bit i-part system temperature primary control enable, bank 2	=	TRUE	-		
					(					
					Temperature of catalyst 1, bank 2	>	349.96	deg C		
					Temperature of catalyst 1, bank 2	<	869.96	deg C		
					)					
					)					
					)					
					Cumulated time in which slow offset adaptation was active, bank 2	>=	100	sec		
					)					
					Debounce condition for fault confirmation by fast offset adaptation (sensor 1, bank 2)	=	TRUE	-		
					General enabling condition of fast offset adaptation, bank 2					
					(					
					Enabling condition of fast offset adaptation due to catalyst conditioning, bank 2	=	TRUE	-		
					(					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					(			
					Bit signal valid. HEGO sensor 2 bank 2	= TRUE -		
					Flag lambda setpoint for sensor equal to 1, bank 2	= TRUE -		
					Rich catalyst purge, bank 2	= FALSE -		
					Bank-independent disabling conditions of fast offset adaptation	= FALSE -		
					(			
					Fuel cut-off, bank	= TRUE -		
					Mass flow exhaust gas catalyst 1, bank 2	> 300 g		
					)			
					OR			
					(			
					Fuel cut-off	= FALSE -		
					Mass flow exhaust gas catalyst 1, bank 2	> 180 g		
					)			
					)			
					(			
					(			
					Parallelization done at least once from LSU plausibility diagnosis point of view (sensor 1, bank 2)	= TRUE -		
					(			
					(			
					Target sensor voltage for rich during active parallelisation reached once, sensor 1, bank 2	= TRUE -		
					Oil gas mass flow by active lambda shifting minus the maximal possible influence of LSU offset part, segment 1, bank 2	>= 1500		
					for time	>= 1 sec		
					)			
					OR			
					(			
					Lean target sensor voltage during active parallelisation reached once, sensor 1, bank 2	= TRUE -		
					Oxygen mass flow in catalyst 1, deduct from maximum present LSU Offset in a fault free system, bank 2	>= 1.2 g		
					for time	>= 1 sec		
					)			
					)			
					OR			
					Dynamic diagnosis error of upstream exhaust gas sensor is not set	= TRUE -		
					)			
					OR			
					(			
					(			
					lambda control is set when lambda controller reaches lower limit FRMIN, bank 2	= TRUE -		
					Lambda actual value sensor 1 bank 2	< 1 -		
					Output voltage of HEGO sensor 2 bank 2	< 0.4 -		
					)			
					OR			
					(			
					lambda control is set when lambda controller reaches lower limit FRMAX, bank 2	= TRUE -		
					Lambda actual value sensor 1 bank 2	> 1		
					Output voltage of HEGO sensor 2 bank 2	> 0.6		
					)			
					for time	>= 2 sec		
					Condition for Lambda closed loop control upstream catalyst; bank 2	= TRUE -		
					)			
					for time	>= 1 sec		
					)			
					(			
					(			
					Temperature of catalyst 1, bank 2	> 499.96 deg C		
					Temperature of catalyst 1, bank 2	< 899.96 deg C		
					)			
					for time	= 0 sec		
					)			
					(			
					(			
					Mass flow exhaust gas catalyst 1, bank 2	> 3.888888889 g/sec		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
							Mass flow exhaust gas catalyst 1, bank 2	<	69.44444444	g/sec		
							)					
							OR					
							(					
							(					
							Mass flow exhaust gas catalyst 1, bank 2	>	2.083333333	g/sec		
							Mass flow exhaust gas catalyst 1, bank 2	<=	3.888888889	g/sec		
							)					
							for time	>=	4	sec		
							)					
							)					
							Condition for upstream cat LSU ready for operation f(lamsons_w), bank 2	=	TRUE	-		
							(					
							Sensor type sensor 1 bank 2	>	0	-		
							Lambda signal quality sensor 1 bank 2	<=	12	-		
							)					
							Hydrogen-correction-voltage, HEGO sensor 2 bank 2 with high resolution	<=	0.08057	V		
							(					
							CAT damage during past interval	=	FALSE	-		
							(					
							Ratio total charge to charge in cylinder	<=	1.02002	-		
							Width of dead zone for lambda control deviation	=	0	-		
							)					
							)					
							Mass flow of exhaust gas catalyst 1, bank 2	>=	200	g		
							Difference betweeen Lambda offset (sensor 1, bank 2) and Lambda offset (delayed by one calculation raster)	<=	0.0079956	-		
							(					
							Counter for no step in offset or increasing offset in a row, bank 2	>=	2	counts		
							OR					
							Counter for exhaust masses to debounce fault with fast offset adaptation, bank 2	>=	4	counts		
							)					
							)					
							)					
							)					
							)					
							No pending or confirmed DTCs	=	see sheet inhibit table	-		
							Basic enable conditions met	=	see sheet enable tables	-		
Upstream Exhaust Gas sensor, bank 2	P2197	Plausibility check of upstream exhaust gas sensor when the lambda offset is greater than the calibrated threshold	Lambda offset of upstream exhaust gas sensor, bank 2	>	0.059998	-	Debounce condition for fault confirmation by offset adaptation (sensor 1, bank 2)	=	TRUE	-	once per driving cycle	2 Trips
							(					
							Debouncing of offset fault by slow offset adaptation, bank 2	=	TRUE	-		
							(					
							Slow offset adaptation, bank 2	=	TRUE	-		
							(					
							Bit p-part controlability primary control enable 2	=	TRUE	-		
							(					
							(					
							Lambda regulator setpoint active, bank 2	=	TRUE	-		
							(					
							Width of dead zone for lambda control deviation	>=	0.999969	-		
							OR					
							(					
							Lambda closed loop control (upstream catalyst), bank 2	=	TRUE	-		
							OR					
							(					
							Lambda setpoint for sensor after addition of trim control action, bank 2 is not eqaul to 0	=	TRUE	-		
							Difference between upper limit action value lambda control and temporary value before test for enleanment protection, bank 2	>=	0	-		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					Difference between temporary value before test for enleanment protection, bank 2 and lower bound of dfr during enleanmant protection	>=	0	-		
					Lambda (measured and setpoint) is below minimal measurable lambda (bank 2)	=	FALSE	-		
					TEMIN-limitation active, bench 2	=	FALSE	-		
					)					
					)					
					)					
					Current lowpass value of p-part control upstream primary control enable 2	>	0	%		
					Lambda closed loop control (upstream catalyst), bank 2	=	TRUE	-		
					(					
					Lambda control disabled during or after cylinder cut−off, bank 2	=	FALSE	-		
					Lambda swtiched ON after fuel cutoff, bank 2	=	TRUE	-		
					(					
					Fuel cut off is active, bank 2	=	FALSE	-		
					(					
					Time running down after fuel cut−off for enabling lambda control	>	8	sec		
					OR					
					(					
					Absolute value of control difference in lambda, bank 2	<=	0.1001	-		
					Difference of counter time and plant time constant a-(b+c) where a is Time running down after fuel cut−off for enabling lambda control b is plant time constant for continuous air/fuel control, bank 2 c is plant parameter for dead time for lambda control, bank 2	>	0	sec		
					)					
					)					
					)					
					LSU sensor upstream to catalyst ready for operation, bank 2	=	TRUE	-		
					(					
					lambda sensor 1 temperature, bank 2	>=	654.998	deg C		
					)					
					Lambda control disabled by a fault, bank 2	=	FALSE	-		
					lambda control is active since warmup is finished	=	TRUE	-		
					Relative air charge	>	0	%		
					for time	>=	2	sec		
					)					
					HEM condition to block lambda closed loop control upstream catalyst, bank 2	=	FALSE	-		
					Lamda control active due to GDI mode change	=	TRUE	-		
					(					
					GDI mode homogeneous	=	TRUE	-		
					for time	>=	0.8	sec		
					)					
					)					
					(					
					Lambda control enabled for Cold operation sensor 2 bank 2	=	TRUE	-		
					OR					
					HEGO sensor 2 bank 2, signal valid	=	TRUE	-		
					(					
					Status of heating enable conditions for the sensor operating readiness	=	TRUE	-		
					(					
					Protective heating is finished, bank 2	=	TRUE	-		
					for time	>=	15	sec		
					OR					
					Internal resistance OK for operating readiness, bank 2	=	TRUE	-		
					(					
					Unfiltered internal resistance of HEGO sensor, bank 2	<=	2000	Ohm		
					Protective heating is finished, bank 2	=	TRUE	-		
					Counter for valid internal resistance measurements, bank 2	>=	3	counts		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					)					
					)					
					Status of sensor signal enable conditions for the sensor operating readiness, bank 2	=	TRUE	-		
					(					
					Internal resistance OK for operating readiness	=	TRUE	-		
					OR					
					(					
					(					
					Output voltage of HEGO Sensor, bank 2	>=	0.551758	V		
					Output voltae of HEGO Sensor, bank 2	<=	1.201172	V		
					)					
					OR					
					Output voltae of HEGO Sensor, bank 2	<=	0.322266	V		
					)					
					OR					
					Sensor voltage stuck in countervoltage band	=	TRUE	-		
					(					
					(					
					(					
					Output voltage of HEGO Sensor, bank 2	<	0.551758	V		
					Output voltage of HEGO Sensor, bank 2	>	0.322266	V		
					)					
					(					
					Sensor open circuit fault existed in previous trip	=	TRUE	-		
					OR					
					Sensor open circuit fault currently not detected	=	TRUE	-		
					)					
					Electrical diagnostics enabled, bank 2	=	TRUE	-		
					)					
					for time	>=	20	sec		
					)					
					)					
					for time	>=	0.2	sec		
					)					
					)					
					)					
					Bit p-part system balanced primary control enable 2	=	TRUE	-		
					(					
					(					
					Lambda setpoint for sensor is set equal to 1, bank 2	=	TRUE	-		
					OR					
					Lambda setpoint for sensor is set equal to 1, bank 2	=	FALSE	-		
					for time	>=	10	sec		
					)					
					Rich catalyst purge, bank 2	=	FALSE	-		
					Mass flow of exhaust gas, sensor 1, bank 2	>	25	g		
					)					
					P-part active from temperature and dynamic diagnosis, bank 2	=	TRUE	-		
					(					
					Temperature of catalyst 1, bank 2	>=	349.96	deg C		
					Temperature of catalyst 1, bank 2	<	899.96	deg C		
					)					
					)					
					Bit I-part global primary control enable	=	TRUE	-		
					(					
					(					
					Current lowpass value of I-part load primary control enable	>	-1.5938	%		
					Current lowpass value of I-part load primary control enable	<=	1.5938	%		
					)					
					Diagnosis of canister purge system is active	=	FALSE	-		
					Ratio total charge to charge in cylinder	<=	1	-		
					Width of dead zone for lambda control deviation	=	0	-		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					Maximum value among the engine coolant temperature and model-based substitute value for engine temperature signal in case of error	>	34.96	deg C		
					(					
					Bit I-part global load and engine speed control enable	=	TRUE	-		
					(					
					Engine speed with low resolution	<	2600	rpm		
					Engine speed with low resolution	>=	1000	rpm		
					(					
					Half engine mode active	=	TRUE	-		
					(					
					Relative air mass during half engine mode (see Look-Up table #P2096-2)	<	30 to 90	%		
					Relative air mass during half engine mode (see Look-Up table #P2096-3)	>=	15 to 20.3	%		
					)					
					OR					
					Half engine mode active	=	FALSE	-		
					(					
					Relative air mass (see Look-Up Table #P2096-4)	<	30 to 90	%		
					Relative air mass (see Look-Up Table #P2096-5)	>=	15 to 20.3	%		
					)					
					)					
					)					
					)					
					)					
					(					
					Bit i-part system primary control enable, bank 2	=	TRUE	-		
					(					
					Current integrator value of P-part balanced primary control enable, bank 2	>	150	g		
					(					
					(					
					Dew point end of sensor 1 Bank 2 is reached	=	TRUE	-		
					End of start is reached	=	TRUE	-		
					Exhaust gas mass flow sensor 1 Bank 2	>	179.91	g		
					)					
					OR					
					(					
					(					
					Dew point end of sensor 2 reached, bank 2	=	FALSE	-		
					OR					
					End of start is reached	=	FALSE	-		
					)					
					Exhaust gas mass flow sensor 1 Bank 2	>	199.82	g		
					)					
					)					
					)					
					Bit i-part system temperature primary control enable, bank 2	=	TRUE	-		
					(					
					Temperature of catalyst 1, bank 2	>	349.96	deg C		
					Temperature of catalyst 1, bank 2	<	869.96	deg C		
					)					
					)					
					)					
					Cumulated time in which slow offset adaptation was active, bank 2	>=	100	sec		
					)					
					Debounce condition for fault confirmation by fast offset adaptation (sensor 1, bank 2)	=	TRUE	-		
					General enabling condition of fast offset adaptation, bank 2					
					(					
					Enabling condition of fast offset adaptation due to catalyst conditioning, bank 2	=	TRUE	-		
					(					
					(					
					Bit signal valid, HEGO sensor 2 bank 2	=	TRUE	-		
					Flag lambda setpoint for sensor equal to 1, bank 2	=	TRUE	-		
					Rich catalyst purge, bank 2	=	FALSE	-		
					Bank-independent disabling conditions of fast offset adaptation	=	FALSE	-		
					(					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					Fuel cut-off, bank	=	TRUE	-		
					Mass flow exhaust gas catalyst 1, bank 2	>	300	g		
					)					
					OR					
					(					
					Fuel cut-off	=	FALSE	-		
					Mass flow exhaust gas catalyst 1, bank 2	>	180	g		
					)					
					)					
					(					
					(					
					Parallelization done at least once from LSU plausibility diagnosis point of view (sensor 1, bank 2)	=	TRUE	-		
					(					
					(					
					Target sensor voltage for rich during active parallelisation reached once, sensor 1, bank 2	=	TRUE	-		
					Oil gas mass flow by active lambda shifting minus the maximal possible influence of LSU offset part, segment 1, bank 2	>=	1500			
					for time	>=	1	sec		
					)					
					OR					
					(					
					Lean target sensor voltage during active parallelisation reached once, sensor 1, bank 2	=	TRUE	-		
					Oxygen mass flow in catalyst 1, deduct from maximum present LSU Offset in a fault free system, bank 2	>=	1.2	g		
					for time	>=	1	sec		
					)					
					)					
					OR					
					Dynamic diagnosis error of upstream exhaust gas sensor is not set	=	TRUE	-		
					)					
					OR					
					(					
					(					
					lambda control is set when lambda controller reaches lower limit FRMIN, bank 2	=	TRUE	-		
					Lambda actual value sensor 1 bank 2	<	1	-		
					Output voltage of HEGO sensor 2 bank 2	<	0.4	-		
					)					
					OR					
					(					
					lambda control is set when lambda controller reaches lower limit FRMAX, bank 2	=	TRUE	-		
					Lambda actual value sensor 1 bank 2	>	1			
					Output voltage of HEGO sensor 2 bank 2	>	0.6			
					)					
					for time	>=	2	sec		
					Condition for Lambda closed loop control upstream catalyst; bank 2	=	TRUE	-		
					)					
					for time	>=	1	sec		
					)					
					(					
					(					
					Temperature of catalyst 1, bank 2	>	499.96	deg C		
					Temperature of catalyst 1, bank 2	<	899.96	deg C		
					)					
					for time	=	0	sec		
					)					
					(					
					(					
					Mass flow exhaust gas catalyst 1, bank 2	>	3.888888889	g/sec		
					Mass flow exhaust gas catalyst 1, bank 2	<	69.44444444	g/sec		
					)					
					OR					
					(					
					(					
					Mass flow exhaust gas catalyst 1, bank 2	>	2.083333333	g/sec		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Mass flow exhaust gas catalyst 1, bank 2	<= 3.888888889 g/sec		
					)			
					for time	>= 4 sec		
					)			
					)			
					Condition for upstream cat LSU ready for operation f(lamsons_w), bank 2	= TRUE -		
					(			
					Sensor type sensor 1 bank 2	> 0 -		
					Lambda signal quality sensor 1 bank 2	<= 12 -		
					)			
					Hydrogen-correction-voltage, HEGO sensor 2 bank 2 with high resolution	<= 0.08057 V		
					(			
					CAT damage during past interval	= FALSE -		
					(			
					Ratio total charge to charge in cylinder	<= 1.02002 -		
					Width of dead zone for lambda control deviation	= 0 -		
					)			
					)			
					Mass flow of exhaust gas catalyst 1, bank 2	>= 200 g		
					Difference betweeen Lambda offset (sensor 1, bank 2) and Lambda offset (delayed by one calculation raster)	<= 0.0079956 -		
					(			
					Counter for no step in offset or increasing offset in a row, bank 2	>= 2 counts		
					OR			
					Counter for exhaust masses to debounce fault with fast offset adaptation, bank 2	>= 4 counts		
					)			
					)			
					)			
					)			
					)			
					No pending or confirmed DTCs	= see sheet inhibit table -		
					Basic enable conditions met	= see sheet enable tables -		
Oxygen Sensors before front catalyst	P2297	Air fuel ratio signal check for oxygen sensor 1 bank 1	Lambda equivalent value based on electrically corrected pump current sensor 1 bank 1	> 12 -	UEGO Release condition for O2 signal is fulfilled under following condition for sensor1 bank1 :	= TRUE -	10 sec continuous	2 Trips
					(			
					Temperature of ceramic Sensor 1,Bank 1	> 654.998 deg C		
					(			
					Calculation of reverse charge sensor 1 bank 1	= TRUE -		
					Condition for pump current calculation in sync started	= TRUE -		
					Reference pump current for pump current correction status	= TRUE -		
					Valid status of correction	= TRUE -		
					for time	= 0.5 sec		
					)			
					Validity of Reverse Pump Current Mode Sensor 1 Bank 1	= FALSE -		
					(			
					Condition for evaluation temperature valid sensor 1 bank 1	= TRUE -		
					for time	= 1 sec		
					)			
					Condition of UN0 for sensor 1 and bank 1 regulated	= TRUE -		
					)			
					Injection valves are activated	= TRUE -		
					End of start is reached and combustion engine runs on its own power	= TRUE -		
					Required lambda referring to lambda sensor fitting location	< 1.19995 -		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
	P2298	Air fuel ratio signal check for oxygen sensor 1 bank 2	Lambda equivalent value based on electrically corrected pump current sensor 1 bank 2	> 12 -	UEGO Release condition for O2 signal is fulfilled under following condition for sensor1 bank2 :	= TRUE -	10 sec continuous	2 Trips
					(			
					Temperature of ceramic Sensor 1,Bank 2	> 654.998 deg C		
					(			
					Calculation of reverse charge sensor 1 bank 2	= TRUE -		
					Condition for pump current calculation in sync started	= TRUE -		
					Reference pump current for pump current correction status	= TRUE -		
					Valid status of correction	= TRUE -		
					for time	= 0.5 sec		
					)			
					Validity of Reverse Pump Current Mode Sensor 1 Bank 2	= FALSE -		
					(			
					Condition for evaluation temperature valid sensor 1 bank 2	= TRUE -		
					for time	= 1 sec		
					)			
					Condition of UN0 for sensor 1 and bank 2 regulated	= TRUE -		
					)			
					Injection valves are activated	= TRUE -		
					End of start is reached and combustion engine runs on its own power	= TRUE -		
					Required lambda referring to lambda sensor fitting location	< 1.19995 -		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
Downstream Exhaust Gas Sensor	P013A	Compares measured transition response time of Seconday O2 sensor 2 bank 1 with the calibrated threshold when the sensor voltage changes Rich to Lean	arithmetic filtered delay response time of Secondary O2 sensor 2, bank 1, Rich to Lean: tiArth	> 0.5 sec	primary A/F commanded lambda	<= 1.09009 Unitless	2	2 Trip
			tiArth = old tiArth + ((((a) - (b)) - old tiArth) * 1/ sample order)		primary A/F commanded lambda	>= 0.8501 Unitless		
			(a) Raw transition response time of secondary O2 S2B1 Rich to Lean		engine runs	= TRUE -		
			(b) Exhaust mass flow dependent correction for transition response time of secondary O2 S2B1 Rich to Lean (see Look-Up-Table #P013A-2)	0.05 to 0.1 sec	Vehicle speed	>= 4.350528278 mph		
					engine speed	<= 3520 rpm		
					engine speed	>= 1000 rpm		
					engine load @ full engine mode (see Look-Up-Table #P0420-4)	>= 12 to 19.992 %		
					(engine load of full engine mode / 2) @ half engine mode (see Look-Up-Table #P0420-4)	>= 12 to 19.992 %		
					for time	>= 3 sec		
					Ratio total charge to charge in cylinder	< 1.00024 Unitless		
					for time	>= 2 sec		
					Integrated air mass flow	> 100 g		
					measured ambient temperatuer	>= -39.8 deg C		
					measured ambient pressure	>= 50 kPa		
					measured engine coolant temperature	>= 52.06 deg C		
					no transmission gear change	= TRUE -		
					for time	>= 2 sec		
					)			
					(			
					integrated exhaust gas mass flow after the following operation points are in the monitoring window Bank 2	> 100 g		
					(			
					Change of exhaust gas mass flow Bank 2: (a) - (b)	<= 6.944444444 g/sec		
					Change of exhaust gas mass flow Bank 2: (a) - (b)	>= -6.944444444 g/sec		
					(a) exhaust gas mass flow Bank 2			
					(b) filtered exhaust gas mass flow Bank 2			
					PT1 time constant	1.20029304 sec		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					Low window exhaust gas mass flow Bank 2 (see Look-Up-Table #P0420-2)	<=	22.2222222222222 to 27.7777777777778	g/sec		
					Low window exhaust gas mass flow Bank 2	>=	3.888888889	g/sec		
					Low window exhaust gas mass flow bank 1	>=	(a) - (b)			
					(a) minimum exhaust gas mass flow bank 1		3.888888889	g/sec		
					(b) offset exhaust gas mass flow bank 1 at tip-out		0.833333333	g/sec		
					for time	>=	3	sec		
					High window exhaust gas mass flow bank 1 (see Look-Up-Table #P0420-1)	<=	22.2222222222222 to 27.7777777777778	g/sec		
					High window exhaust gas mass flow bank 1	>=	3.888888889	g/sec		
					)					
					(					
					Modeled catalyst temperature gradient bank 1: (a) - (b)	<=	40.0078	deg C		
					Modeled catalyst temperature gradient bank 1: (a) - (b)	>=	-40.0078	deg C		
					(a) Modeled catalyst temperature bank 1					
					(b) filtered modeled catalyst temperature bank 1 PT1 time constant	=	4.9989321	sec		
					Low window modeled catalyst temperature	<=	650.006	deg C		
					Low window Modeled catalyst temperature bank 1	>=	520.022	deg C		
					High window modeled catalyst temperature bank 1	<=	780.014	deg C		
					High window Modeled catalyst temperature bank 1	>=	600.014	deg C		
					Modeled catalyst temperature bank 1 after the first engine start and driving	>	420.06	deg C		
					for time	>=	12	sec		
					))					
					((					
					Integrated purge mass flow after a longer purge stop	>=	1.51	g		
					HC concentration factor in chacoal canister	<=	40	factor		
					relative fuel portion of canister purge to injected fuel mass : (a) / (b) (a) fuel mass supplied by canister purge control (b) fuel mass supplied by injection		0.200012	Unitless		
					OR					
					open loop canister purge control	=	TRUE	-		
					OR					
					canister purge control mass flow into the manifold	<=	5.555555556	g/sec		
					((					
					integrated exhaust gas mass flow bank 1 since engine start (see Look-Up-Table #P0420-3)	>	1600 to 2850	g		
					integrated exhaust gas mass flow bank 1 after the following sensors's readiness	>	40	g		
					(					
					Secondary O2 sensor readiness bank 1					
					Primary A/F sensor readiness bank 1					
					)					
						>=	299.991	deg C		
					temperature deviation of Primary A/F sensor heater control bank 1: (a) - (b)	<	64.9922	deg C		
					(a) primary A/F sensor temperature set point for heater control		800.006	deg C		
					(b) measured primary A/F sensor temperature for heater control					
					)					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					statemachine = sm			
					statemachine (sm =0) : inactive	=		
					a commanded lambda active	= FALSE -		
					primary A/F commanded lambda	= 1 Unitless		
					if the following conditions are met, sm moves to sm = 2			
					Secondary O2 sensor voltage bank1	>= 0.749512 V		
					if the following conditions are met, sm moves to sm = 1			
					Secondary O2 sensor voltage bank1	< 0.749512 V		
					Secondary O2 sensor voltage bank1	>= 0.450439 V		
					statemachine (sm=1) - rich mixture in catalyst	= TRUE -		
					a commanded lambda active	= TRUE -		
					primary A/F commanded lambda bank1	= 0.91992 Unitless		
					for time	>= 3 sec		
					for time	>= 0.2 sec		
					if the following conditions are met, sm moves to sm = 2			
					((			
					Secondary O2 sensor voltage gradient over 0.05s	>= 0.069 V/s		
					Secondary O2 sensor voltage bank1	>= 0.749512 V		
					)			
					OR			
					Secondary O2 sensor voltage bank1	>= 0.749512 V		
					)			
					Integrated exhaust mass flow bank 1	>= 0.12 g		
					if the following conditions are met, sm moves to sm = 3			
					(			
					Secondary O2 sensor voltage bank 1	>= 0.85083 V		
					OR			
					(			
					Secondary O2 sensor voltage bank 1	>= 0.749512 V		
					Secondary O2 sensor voltage gradient over 0.05s	<= 0.09944 V/s		
					Secondary O2 sensor voltage gradient over 0.05s	>= -0.09944 V/s		
					Integrated Oxygen mass flow bank 1	> 0.15 g		
					))			
					(			
					Primary A/F sensor lambda bank 1	<= (a) + (b)		
					(a) Primary lambda control set point bank 1	(a)		
					(b) maximum lambda deviation of lean mixture	(b) 0.05005 Unitless		
					Primary A/F sensor lambda bank 1	>= (a) - (b)		
					(a) Primary lambda control set point			
					(b) maximum lambda deviation of rich mixture	0.05005 Unitless		
					for time	>= 0.2 sec		
					Integrated rich exhaust gas mass flow bank 1	>= 15 g		
					)			
					And			
					(			
					Secondary O2 sensor voltage bank 1	> (a) + (b)		
					(a) minimum secondary O2 voltage			
					(b) Offset voltage of Secondary O2 sensor	= 0.030518 V		
					)			
					statemachine (sm=2) - Lean mixture in catalyst			
					a commanded lambda active	= TRUE -		
					primary A/F commanded lambda	= 1.08008 Unitless		
					for time	>= 3 sec		
					for time	>= 0.2 sec		
					if the following conditions are met, sm moves to sm = 4			
					((			
					Secondary O2 sensor voltage	<= 0.150146 V		
					for time	>= 0.1 sec		
					)			
					OR			
					(			
					Secondary O2 sensor voltage	<= 0.150146 V		
					Secondary O2 sensor voltage gradient over 0.05s	<= 0.09944 V/s		
					Secondary O2 sensor voltage gradient over 0.05s	>= -0.09944 V/s		
					Integrated Oxygen mass flow bank 1	> 0.1 g		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					))			
					(			
					Primary A/F sensor lambda	<= (a) + (b)		
					(a) Primary lambda control set point	(a)		
					(b) maximum lambda deviation of lean mixture	(b) 0.05005 Unitless		
					Primary A/F sensor lambda	>= (a) - (b)		
					(a) Primary lambda control set point			
					(b) maximum lambda deviation of rich mixture	0.05005 Unitless		
					for time	>= 0.2 sec		
					Integrated lean exhaust gas mass flow bank 1	>= 15 g		
					)			
					statemachine (sm=3) - Lean mixture in catalyst	**= TRUE -**		
					a commanded lambda active bank 1	= TRUE -		
					primary A/F commanded lambda bank 1	= 1.08008 Unitless		
					for time	>= 3 sec		
					for time	>= 0.2 sec		
					if the following conditions are met, sm moves to sm = 4			
					(			
					Secondary O2 sensor voltage bank 1	<= 0.150146 V		
					for time	>= 0.1 sec		
					OR			
					(			
					Secondary O2 sensor voltage bank 1	<= 0.150146 V		
					Secondary O2 sensor voltage gradient over 0.05s	<= 0.09944 V/s		
					Secondary O2 sensor voltage gradient over 0.05s	>= -0.09944 V/s		
					Integrated Oxygen mass flow bank 1	> 0.1 g		
					))			
					(			
					Primary A/F sensor lambda bank 1	<= (a) + (b)		
					(a) Primary lambda control set point	(a)		
					(b) maximum lambda deviation of lean mixture	(b) 0.05005 Unitless		
					Primary A/F sensor lambda bank 1	>= (a) - (b)		
					(a) Primary lambda control set point			
					(b) maximum lambda deviation of rich mixture	0.05005 Unitless		
					for time	>= 0.2 sec		
					Integrated lean exhaust gas mass flow bank 1	>= 15 g		
					)			
					(			
					Secondary O2 sensor voltage difference: (a) - (b)	< 0.014648 V		
					(a) old Secondary O2 sensor voltage bank 1			
					(b) Secondary O2 sensor voltage bank 1			
					Secondary O2 sensor voltage bank 1	<= 0.202637 V		
					for time	>= 2.5 sec		
					)			
					statemachine (sm=4) - Rich mixture in catalyst	= TRUE -		
					a commanded lambda active	= TRUE -		
					primary A/F commanded lambda	= 0.91992 Unitless		
					for time	>= 3 sec		
					for time	>= 0.2 sec		
					if the following conditions are met, sm moves to sm = 3			
					(			
					Secondary O2 sensor voltage bank 1	>= 0.85083 V		
					OR			
					(			
					Secondary O2 sensor voltage bank 1	>= 0.749512 V		
					Secondary O2 sensor voltage gradient over 0.05s	<= 0.09944 V/s		
					Secondary O2 sensor voltage gradient over 0.05s	>= -0.09944 V/s		
					Integrated Oxygen mass flow bank 1	> 0.15 g		
					))			
					(			
					Primary A/F sensor lambda bank 1	<= (a) + (b)		
					(a) Primary lambda control set point bank 1	(a)		
					(b) maximum lambda deviation of lean mixture	(b) 0.05005 Unitless		
					Primary A/F sensor lambda bank 1	>= (a) - (b)		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					(a) Primary lambda control set point (b) maximum lambda deviation of rich mixture	0.05005 Unitless		
					for time	>= 0.2 sec		
					Integrated rich exhaust gas mass flow bank 1) And (	>= 15 g		
					No pending or confirmed DTCs	= see sheet inhibit table		
					Basic enable conditions met	= see sheet enable tables -		
Downstream Exhaust Gas Sensor	P013B	Compares measured transition response time of Seconday O2 sensor 2 bank 1 with the calibrated threshold when the sensor voltage changes Lean to Rich	arithmetic filtered delay response time of Secondary O2 sensor 2, bank 1, Lean to Rich: tiArth	> 0.5 sec	primary A/F commanded lambda	<= 1.09009 Unitless	2 counts	2 Trip
			tiArth = old tiArth + ((((a) - (b)) - old tiArth) * 1/ sample order) (a) Raw transition response time of secondary O2 S2B1 Lean to Rich		primary A/F commanded lambda	>= 0.8501 Unitless		
					engine runs	= TRUE -		
			(b) Exhaust mass flow dependent correction for transition response time of secondary O2 S2B1 Lean to Rich (see Look-Up-Table #P013A-1)	0.06 to 0.07 sec	Vehicle speed	>= 4.350528278 mph		
					engine speed	<= 3520 rpm		
					engine speed	>= 1000 rpm		
					engine load @ full engine mode (see Look-Up-Table #P0420-4)	>= 12 to 19.992 %		
					(engine load of full engine mode / 2) @ half engine mode (see Look-Up-Table #P0420-4)	>= 12 to 19.992 %		
					for time	>= 3 sec		
					Ratio total charge to charge in cylinder	< 1.00024 Unitless		
					for time	>= 2 sec		
					Integrated air mass flow	> 60 g		
					measured ambient temperatuer	>= -39.8 deg C		
					measured ambient pressure	>= 50 kPa		
					measured engine coolant temperature	>= 52.06 deg C		
					no transmission gear change	= TRUE -		
					for time)	>= 2 sec		
					(integrated exhaust gas mass flow after the following operation points are in the monitoring window bank 1 (	> 60 g		
					Change of exhaust gas mass flow bank 1: (a) - (b)	<= 6.944444444 g/sec		
					Change of exhaust gas mass flow bank 1: (a) - (b)	>= -6.944444444 g/sec		
					(a) exhaust gas mass flow bank 1 (b) filtered exhaust gas mass flow bank 1			
					PT1 time constant	1.20029304 sec		
					Low window exhaust gas mass flow bank 1 (see Look-Up-Table #P0420-2)	<= 22.2222222222222 to 27.7777777777778 g/sec		
					Low window exhaust gas mass flow bank 1	>= 3.888888889 g/sec		
					Low window exhaust gas mass flow bank 1	>= (a) - (b)		
					(a) minimum exhaust gas mass flow bank 1	3.888888889 g/sec		
					(b) offset exhaust gas mass flow bank 1 at tip-out	0.833333333 g/sec		
					for time	>= 3 sec		
					High window exhaust gas mass flow bank 1 (see Look-Up-Table #P0420-1)	<= 22.2222222222222 to 27.7777777777778 g/sec		
					High window exhaust gas mass flow bank 1	>= 3.888888889 g/sec		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					)			
					(			
					Modeled catalyst temperature gradient bank 1: (a) - (b)	<= 40.0078 deg C		
					Modeled catalyst temperature gradient bank 1: (a) - (b) (a) Modeled catalyst temperature bank 1	>= -40.0078 deg C		
					(b) filtered modeled catalyst temperature bank 1 PT1 time constant	= 4.9989321 sec		
					Low window modeled catalyst temperature	<= 650.006 deg C		
					Low window Modeled catalyst temperature bank 1	>= 520.022 deg C		
					High window modeled catalyst temperature bank 1	<= 780.014 deg C		
					High window Modeled catalyst temperature bank 1	>= 600.014 deg C		
					Modeled catalyst temperature bank 1 after the first engine start and driving	> 420.06 deg C		
					for time	>= 12 sec		
					))			
					((			
					Integrated purge mass flow after a longer purge stop	>= 1.51 g		
					HC concentration factor in chacoal canister	<= 40 factor		
					relative fuel portion of canister purge to injected fuel mass : (a) / (b) (a) fuel mass supplied by canister purge control (b) fuel mass supplied by injection	0.200012 Unitless		
					OR			
					open loop canister purge control	= TRUE -		
					OR			
					canister purge control mass flow into the manifold	<= 5.555555556 g/sec		
					((			
					integrated exhaust gas mass flow bank 1 since engine start (see Look-Up-Table #P0420-3)	> 1600 to 2850 g		
					integrated exhaust gas mass flow bank 1 after the following sensors's readiness	> 40 g		
					(			
					Secondary O2 sensor readiness bank 1			
					Primary A/F sensor readiness bank 1			
					)			
						>= 299.991 deg C		
					temperature deviation of Primary A/F sensor heater control bank 1: (a) - (b)	< 64.9922 deg C		
					(a) primary A/F sensor temperature set point for heater control (b) measured primary A/F sensor temperature for heater control	800.006 deg C		
					)			
					statemachine = sm			
					statemachine (sm =0) : inactive	=		
					a commanded lambda active	= FALSE -		
					primary A/F commanded lambda	= 1 Unitless		
					if the following conditions are met, sm moves to sm = 2			
					Secondary O2 sensor voltage bank1	>= 0.749512 V		
					if the following conditions are met, sm moves to sm = 1			
					Secondary O2 sensor voltage bank1	< 0.749512 V		
					Secondary O2 sensor voltage bank1	>= 0.450439 V		
					statemachine (sm=1) - rich mixture in catalyst	= TRUE -		
					a commanded lambda active	= TRUE -		
					primary A/F commanded lambda bank1	= 0.91992 Unitless		
					for time	>= 3 sec		
					for time	>= 0.2 sec		
					if the following conditions are met, sm moves to sm = 2			
					((			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Secondary O2 sensor voltage gradient over 0.05s	>= 0.069 V/s		
					Secondary O2 sensor voltage bank1	>= 0.749512 V		
					)			
					OR			
					Secondary O2 sensor voltage bank1	>= 0.749512 V		
					)			
					Integrated exhaust mass flow bank 1	>= 0.12 g		
					if the following conditions are met, sm moves to sm = 3			
					(			
					Secondary O2 sensor voltage bank 1	>= 0.85083 V		
					OR			
					(			
					Secondary O2 sensor voltage bank 1	>= 0.749512 V		
					Secondary O2 sensor voltage gradient over 0.05s	<= 0.09944 V/s		
					Secondary O2 sensor voltage gradient over 0.05s	>= -0.09944 V/s		
					Integrated Oxygen mass flow bank 1	> 0.15 g		
					))			
					(			
					Primary A/F sensor lambda bank 1	<= (a) + (b)		
					(a) Primary lambda control set point bank 1	(a)		
					(b) maximum lambda deviation of lean mixture	(b) 0.05005 Unitless		
					Primary A/F sensor lambda bank 1	>= (a) - (b)		
					(a) Primary lambda control set point			
					(b) maximum lambda deviation of rich mixture	0.05005 Unitless		
					for time	>= 0.2 sec		
					Integrated rich exhaust gas mass flow bank 1	>= 15 g		
					)			
					And			
					(			
					Secondary O2 sensor voltage bank 1	> (a) + (b)		
					(a) minimum secondary O2 voltage			
					(b) Offset voltage of Secondary O2 sensor	= 0.030518 V		
					)			
					statemachine (sm=2) - Lean mixture in catalyst			
					a commanded lambda active	= TRUE -		
					primary A/F commanded lambda	= 1.08008 Unitless		
					for time	>= 3 sec		
					for time	>= 0.2 sec		
					if the following conditions are met, sm moves to sm = 4			
					((			
					Secondary O2 sensor voltage	<= 0.150146 V		
					for time	>= 0.1 sec		
					)			
					OR			
					(			
					Secondary O2 sensor voltage	<= 0.150146 V		
					Secondary O2 sensor voltage gradient over 0.05s	<= 0.09944 V/s		
					Secondary O2 sensor voltage gradient over 0.05s	>= -0.09944 V/s		
					Integrated Oxygen mass flow bank 1	> 0.1 g		
					))			
					(			
					Primary A/F sensor lambda	<= (a) + (b)		
					(a) Primary lambda control set point	(a)		
					(b) maximum lambda deviation of lean mixture	(b) 0.05005 Unitless		
					Primary A/F sensor lambda	>= (a) - (b)		
					(a) Primary lambda control set point			
					(b) maximum lambda deviation of rich mixture	0.05005 Unitless		
					for time	>= 0.2 sec		
					Integrated lean exhaust gas mass flow bank 1	>= 15 g		
					)			
					statemachine (sm=3) - Lean mixture in catalyst	**= TRUE** -		
					a commanded lambda active bank 1	= TRUE -		
					primary A/F commanded lambda bank 1	= 1.08008 Unitless		
					for time	>= 3 sec		
					for time	>= 0.2 sec		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					if the following conditions are met, sm moves to sm = 4			
					(			
					Secondary O2 sensor voltage bank 1	<= 0.150146 V		
					for time	>= 0.1 sec		
					OR			
					(			
					Secondary O2 sensor voltage bank 1	<= 0.150146 V		
					Secondary O2 sensor voltage gradient over 0.05s	<= 0.09944 V/s		
					Secondary O2 sensor voltage gradient over 0.05s	>= -0.09944 V/s		
					Integrated Oxygen mass flow bank 1	> 0.1 g		
					))			
					(			
					Primary A/F sensor lambda bank 1	<= (a) + (b)		
					(a) Primary lambda control set point	(a)		
					(b) maximum lambda deviation of lean mixture	(b) 0.05005 Unitless		
					Primary A/F sensor lambda bank 1	>= (a) - (b)		
					(a) Primary lambda control set point			
					(b) maximum lambda deviation of rich mixture	0.05005 Unitless		
					for time	>= 0.2 sec		
					Integrated lean exhaust gas mass flow bank 1	>= 15 g		
					)			
					statemachine (sm=4) - Rich mixture in catalyst	= TRUE -		
					a commanded lambda active	= TRUE -		
					primary A/F commanded lambda	= 0.91992 Unitless		
					for time	>= 3 sec		
					for time	>= 0.2 sec		
					if the following conditions are met, sm moves to sm = 3			
					(			
					Secondary O2 sensor voltage bank 1	>= 0.85083 V		
					OR			
					(			
					Secondary O2 sensor voltage bank 1	>= 0.749512 V		
					Secondary O2 sensor voltage gradient over 0.05s	<= 0.09944 V/s		
					Secondary O2 sensor voltage gradient over 0.05s	>= -0.09944 V/s		
					Integrated Oxygen mass flow bank 1	> 0.15 g		
					))			
					(			
					Primary A/F sensor lambda bank 1	<= (a) + (b)		
					(a) Primary lambda control set point bank 1	(a)		
					(b) maximum lambda deviation of lean mixture	(b) 0.05005 Unitless		
					Primary A/F sensor lambda bank 1	>= (a) - (b)		
					(a) Primary lambda control set point			
					(b) maximum lambda deviation of rich mixture	0.05005 Unitless		
					for time	>= 0.2 sec		
					Integrated rich exhaust gas mass flow bank 1	>= 15 g		
					)			
					And			
					(			
					Secondary O2 sensor voltage difference: (a) - (b)	> 0.014648 V		
					(a) old Secondary O2 sensor voltage bank 1			
					(b) Secondary O2 sensor voltage bank 1			
					Secondary O2 sensor voltage bank 1	>= 0.650635 V		
					)			
					No pending or confirmed DTCs	= see sheet inhibit table		
					Basic enable conditions met	= see sheet enable tables -		
Downstream Exhaust Gas Sensor	P013C	Compares measured transition response time of Seconday O2 sensor 2 bank 2 with the calibrated threshold when the sensor voltage changes Rich to Lean	arithmetic filtered delay response time of Secondary O2 sensor 2, bank 2, Rich to Lean: tiArth	> 0.5 sec	primary A/F commanded lambda	<= 1.09009 Unitless	2	2 Trip
			tiArth = old tiArth + ((((a) - (b)) - old tiArth) * 1/ sample order)		primary A/F commanded lambda	>= 0.8501 Unitless		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
			(a) Raw transition response time of secondary O2 S2B2 Rich to Lean		engine runs	= TRUE -		
			(b) Exhaust mass flow dependent correction for transition response time of secondary O2 S2B2 Rich to Lean (see Look-Up-Table #P013A-2)	0.05 to 0.1 sec	Vehicle speed	>= 4.350528278 mph		
					engine speed	<= 3520 rpm		
					engine speed	>= 1000 rpm		
					engine load @ full engine mode (see Look-Up-Table #P0420-4)	>= 12 to 19.992 %		
					(engine load of full engine mode / 2) @ half engine mode (see Look-Up-Table #P0420-4)	>= 12 to 19.992 %		
					for time	>= 3 sec		
					Ratio total charge to charge in cylinder	< 1.00024 Unitless		
					for time	>= 2 sec		
					Integrated air mass flow	> 100 g		
					measured ambient temperatuer	>= -39.8 deg C		
					measured ambient pressure	>= 50 kPa		
					measured engine coolant temperature	>= 52.06 deg C		
					no transmission gear change	= TRUE -		
					for time	>= 2 sec		
					)			
					(			
					integrated exhaust gas mass flow after the following operation points are in the monitoring window Bank 2	> 100 g		
					(			
					Change of exhaust gas mass flow Bank 2: (a) - (b)	<= 6.944444444 g/sec		
					Change of exhaust gas mass flow Bank 2: (a) - (b)	>= -6.944444444 g/sec		
					(a) exhaust gas mass flow Bank 2			
					(b) filtered exhaust gas mass flow Bank 2			
					PT1 time constant	1.20029304 sec		
					Low window exhaust gas mass flow Bank 2 (see Look-Up-Table #P0420-2)	<= 22.2222222222222 to 27.7777777777778 g/sec		
					Low window exhaust gas mass flow Bank 2	>= 3.888888889 g/sec		
					Low window exhaust gas mass flow bank 2	>= (a) - (b)		
					(a) minimum exhaust gas mass flow bank 2	3.888888889 g/sec		
					(b) offset exhaust gas mass flow bank 2 at tip-out	0.833333333 g/sec		
					for time	>= 3 sec		
					High window exhaust gas mass flow bank 2 (see Look-Up-Table #P0420-1)	<= 22.2222222222222 to 27.7777777777778 g/sec		
					High window exhaust gas mass flow bank 2	>= 3.888888889 g/sec		
					)			
					(			
					Modeled catalyst temperature gradient bank 2: (a) - (b)	<= 40.0078 deg C		
					Modeled catalyst temperature gradient bank 2: (a) - (b)	>= -40.0078 deg C		
					(a) Modeled catalyst temperature bank 2			
					(b) filtered modeled catalyst temperature bank 2	= 4.9989321 sec		
					PT1 time constant			
					Low window modeled catalyst temperature	<= 650.006 deg C		
					Low window Modeled catalyst temperature bank 2	>= 520.022 deg C		
					High window modeled catalyst temperature bank 2	<= 780.014 deg C		
					High window Modeled catalyst temperature bank 2	>= 600.014 deg C		
					Modeled catalyst temperature bank 2 after the first engine start and driving	> 420.06 deg C		
					for time	>= 12 sec		
					))			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					((			
					Integrated purge mass flow after a longer purge stop	>= 1.51 g		
					HC concentration factor in chacoal canister	<= 40 factor		
					relative fuel portion of canister purge to injected fuel mass : (a) / (b) (a) fuel mass supplied by canister purge control (b) fuel mass supplied by injection	0.200012 Unitless		
					OR			
					open loop canister purge control	= TRUE -		
					OR			
					canister purge control mass flow into the manifold	<= 5.555555556 g/sec		
					((			
					integrated exhaust gas mass flow bank 2 since engine start (see Look-Up-Table #P0420-3)	> 1600 to 2850 g		
					integrated exhaust gas mass flow bank 2 after the following sensors's readiness	> 40 g		
					(			
					Secondary O2 sensor readiness bank 2			
					Primary A/F sensor readiness bank 2			
					)			
						>= 299.991 deg C		
					temperature deviation of Primary A/F sensor heater control bank 2: (a) - (b)	< 64.9922 deg C		
					(a) primary A/F sensor temperature set point for heater control	800.006 deg C		
					(b) measured primary A/F sensor temperature for heater control			
					)			
					statemachine = sm			
					statemachine (sm =0) : inactive	=		
					a commanded lambda active	= FALSE -		
					primary A/F commanded lambda	= 1 Unitless		
					if the following conditions are met, sm moves to sm = 2			
					Secondary O2 sensor voltage bank1	>= 0.749512 V		
					if the following conditions are met, sm moves to sm = 1			
					Secondary O2 sensor voltage bank1	< 0.749512 V		
					Secondary O2 sensor voltage bank1	>= 0.450439 V		
					statemachine (sm=1) - rich mixture in catalyst	= TRUE -		
					a commanded lambda active	= TRUE -		
					primary A/F commanded lambda bank1	= 0.91992 Unitless		
					for time	>= 3 sec		
					for time	>= 0.2 sec		
					if the following conditions are met, sm moves to sm = 2			
					((			
					Secondary O2 sensor voltage gradient over 0.05s	>= 0.069 V/s		
					Secondary O2 sensor voltage bank1	>= 0.749512 V		
					)			
					OR			
					Secondary O2 sensor voltage bank1	>= 0.749512 V		
					)			
					Integrated exhaust mass flow bank 2	>= 0.12 g		
					if the following conditions are met, sm moves to sm = 3			
					(			
					Secondary O2 sensor voltage bank 2	>= 0.85083 V		
					OR			
					(			
					Secondary O2 sensor voltage bank 2	>= 0.749512 V		
					Secondary O2 sensor voltage gradient over 0.05s	<= 0.09944 V/s		
					Secondary O2 sensor voltage gradient over 0.05s	>= -0.09944 V/s		
					Integrated Oxygen mass flow bank 2	> 0.15 g		
					))			
					(			
					Primary A/F sensor lambda bank 2	<= (a) + (b)		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					(a) Primary lambda control set point bank 2	(a)		
					(b) maximum lambda deviation of lean mixture	(b) 0.05005 Unitless		
					Primary A/F sensor lambda bank 2	>= (a) - (b)		
					(a) Primary lambda control set point			
					(b) maximum lambda deviation of rich mixture	0.05005 Unitless		
					for time	>= 0.2 sec		
					Integrated rich exhaust gas mass flow bank 2	>= 15 g		
					)			
					And			
					(			
					Secondary O2 sensor voltage bank 2	> (a) + (b)		
					(a) minimum secondary O2 voltage			
					(b) Offset voltage of Secondary O2 sensor	= 0.030518 V		
					)			
					statemachine (sm=2) - Lean mixture in catalyst			
					a commanded lambda active	= TRUE -		
					primary A/F commanded lambda	= 1.08008 Unitless		
					for time	>= 3 sec		
					for time	>= 0.2 sec		
					if the following conditions are met, sm moves to sm = 4			
					((			
					Secondary O2 sensor voltage	<= 0.150146 V		
					for time	>= 0.1 sec		
					)			
					OR			
					(			
					Secondary O2 sensor voltage	<= 0.150146 V		
					Secondary O2 sensor voltage gradient over 0.05s	<= 0.09944 V/s		
					Secondary O2 sensor voltage gradient over 0.05s	>= -0.09944 V/s		
					Integrated Oxygen mass flow bank 2	> 0.1 g		
					))			
					(			
					Primary A/F sensor lambda	<= (a) + (b)		
					(a) Primary lambda control set point	(a)		
					(b) maximum lambda deviation of lean mixture	(b) 0.05005 Unitless		
					Primary A/F sensor lambda	>= (a) - (b)		
					(a) Primary lambda control set point			
					(b) maximum lambda deviation of rich mixture	0.05005 Unitless		
					for time	>= 0.2 sec		
					Integrated lean exhaust gas mass flow bank 2	>= 15 g		
					)			
					statemachine (sm=3) - Lean mixture in catalyst	**= TRUE -**		
					a commanded lambda active bank 2	= TRUE -		
					primary A/F commanded lambda bank 2	= 1.08008 Unitless		
					for time	>= 3 sec		
					for time	>= 0.2 sec		
					if the following conditions are met, sm moves to sm = 4			
					(			
					Secondary O2 sensor voltage bank 2	<= 0.150146 V		
					for time	>= 0.1 sec		
					OR			
					(			
					Secondary O2 sensor voltage bank 2	<= 0.150146 V		
					Secondary O2 sensor voltage gradient over 0.05s	<= 0.09944 V/s		
					Secondary O2 sensor voltage gradient over 0.05s	>= -0.09944 V/s		
					Integrated Oxygen mass flow bank 2	> 0.1 g		
					))			
					(			
					Primary A/F sensor lambda bank 2	<= (a) + (b)		
					(a) Primary lambda control set point	(a)		
					(b) maximum lambda deviation of lean mixture	(b) 0.05005 Unitless		
					Primary A/F sensor lambda bank 2	>= (a) - (b)		
					(a) Primary lambda control set point			
					(b) maximum lambda deviation of rich mixture	0.05005 Unitless		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					for time	>= 0.2 sec		
					Integrated lean exhaust gas mass flow bank 2	>= 15 g		
					)			
					(			
					Secondary O2 sensor voltage difference: (a) - (b)	< 0.014648 V		
					(a) old Secondary O2 sensor voltage bank 2			
					(b) Secondary O2 sensor voltage bank 2			
					Secondary O2 sensor voltage bank 2	<= 0.202637 V		
					for time	>= 2.5 sec		
					)			
					statemachine (sm=4) - Rich mixture in catalyst	= TRUE -		
					a commanded lambda active	= TRUE -		
					primary A/F commanded lambda	= 0.91992 Unitless		
					for time	>= 3 sec		
					for time	>= 0.2 sec		
					if the following conditions are met, sm moves to sm = 3			
					(			
					Secondary O2 sensor voltage bank 2	>= 0.85083 V		
					OR			
					(			
					Secondary O2 sensor voltage bank 2	>= 0.749512 V		
					Secondary O2 sensor voltage gradient over 0.05s	<= 0.09944 V/s		
					Secondary O2 sensor voltage gradient over 0.05s	>= -0.09944 V/s		
					Integrated Oxygen mass flow bank 2	> 0.15 g		
					))			
					(			
					Primary A/F sensor lambda bank 2	<= (a) + (b)		
					(a) Primary lambda control set point bank 2	(a)		
					(b) maximum lambda deviation of lean mixture	(b) 0.05005 Unitless		
					Primary A/F sensor lambda bank 2	>= (a) - (b)		
					(a) Primary lambda control set point			
					(b) maximum lambda deviation of rich mixture	0.05005 Unitless		
					for time	>= 0.2 sec		
					Integrated rich exhaust gas mass flow bank 2	>= 15 g		
					)			
					(			
					No pending or confirmed DTCs	= see sheet inhibit table		
					Basic enable conditions met	= see sheet enable tables -		
Downstream Exhaust Gas Sensor	P013D	Compares measured transition response time of Seconday O2 sensor 2 bank 2 with the calibrated threshold when the sensor voltage changes Lean to Rich	arithmetic filtered delay response time of Secondary O2 sensor 2, bank 2, Lean to Rich: tiArth	> 0.5 sec	primary A/F commanded lambda	<= 1.09009 Unitless	2 counts	2 Trip
			tiArth = old tiArth + ((((a) - (b)) - old tiArth) * 1/ sample order)		primary A/F commanded lambda	>= 0.8501 Unitless		
			(a) Raw transition response time of secondary O2 S2B2 Lean to Rich		engine runs	= TRUE -		
			(b) Exhaust mass flow dependent correction for transition response time of secondary O2 S2B2 Lean to Rich (see Look-Up-Table #P013A-1)	0.06 to 0.07 sec	Vehicle speed	>= 4.350528278 mph		
					engine speed	<= 3520 rpm		
					engine speed	>= 1000 rpm		
					engine load @ full engine mode (see Look-Up-Table #P0420-4)	>= 12 to 19.992 %		
					(engine load of full engine mode / 2) @ half engine mode (see Look-Up-Table #P0420-4)	>= 12 to 19.992 %		
					for time	>= 3 sec		
					Ratio total charge to charge in cylinder	< 1.00024 Unitless		
					for time	>= 2 sec		
					Integrated air mass flow	> 100 g		
					measured ambient temperatuer	>= -39.8 deg C		
					measured ambient pressure	>= 50 kPa		
					measured engine coolant temperature	>= 52.06 deg C		
					no transmission gear change	= TRUE -		
					for time	>= 2 sec		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					)			
					(			
					integrated exhaust gas mass flow after the following operation points are in the monitoring window bank 2	> 100 g		
					(			
					Change of exhaust gas mass flow bank 2: (a) - (b)	<= 6.944444444 g/sec		
					Change of exhaust gas mass flow bank 2: (a) - (b)	>= -6.944444444 g/sec		
					(a) exhaust gas mass flow bank 2 (b) filtered exhaust gas mass flow bank 2 PT1 time constant	1.20029304 sec		
					Low window exhaust gas mass flow bank 2 (see Look-Up-Table #P0420-2)	<= 22.2222222222222 to 27.7777777777778 g/sec		
					Low window exhaust gas mass flow bank 2	>= 3.888888889 g/sec		
					Low window exhaust gas mass flow bank 2	>= (a) - (b)		
					(a) minimum exhaust gas mass flow bank 2	3.888888889 g/sec		
					(b) offset exhaust gas mass flow bank 2 at tip-out	0.833333333 g/sec		
					for time	>= 3 sec		
					High window exhaust gas mass flow bank 2 (see Look-Up-Table #P0420-1)	<= 22.2222222222222 to 27.7777777777778 g/sec		
					High window exhaust gas mass flow bank 2	>= 3.888888889 g/sec		
					)			
					(			
					Modeled catalyst temperature gradient bank 2: (a) - (b)	<= 40.0078 deg C		
					Modeled catalyst temperature gradient bank 2: (a) - (b)	>= -40.0078 deg C		
					(a) Modeled catalyst temperature bank 2 (b) filtered modeled catalyst temperature bank 2 PT1 time constant	= 4.9989321 sec		
					Low window modeled catalyst temperature	<= 650.006 deg C		
					Low window Modeled catalyst temperature bank 2	>= 520.022 deg C		
					High window modeled catalyst temperature bank 2	<= 780.014 deg C		
					High window Modeled catalyst temperature bank 2	>= 600.014 deg C		
					Modeled catalyst temperature bank 2 after the first engine start and driving	> 420.06 deg C		
					for time	>= 12 sec		
					))			
					((			
					Integrated purge mass flow after a longer purge stop	>= 1.51 g		
					HC concentration factor in chacoal canister	<= 40 factor		
					relative fuel portion of canister purge to injected fuel mass : (a) / (b) (a) fuel mass supplied by canister purge control (b) fuel mass supplied by injection	0.200012 Unitless		
					OR			
					open loop canister purge control	= TRUE -		
					OR			
					canister purge control mass flow into the manifold	<= 5.555555556 g/sec		
					((			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					integrated exhaust gas mass flow bank 2 since engine start (see Look-Up-Table #P0420-3)	>	1600 to 2850	g		
					integrated exhaust gas mass flow bank 2 after the following sensors's readiness	>	40	g		
					(					
					Secondary O2 sensor readiness bank 2					
					Primary A/F sensor readiness bank 2					
					)					
						>=	299.991	deg C		
					temperature deviation of Primary A/F sensor heater control bank 2: (a) - (b)	<	64.9922	deg C		
					(a) primary A/F sensor temperature set point for heater control		800.006	deg C		
					(b) measured primary A/F sensor temperature for heater control					
					)					
					statemachine = sm					
					statemachine (sm =0) : inactive	=				
					a commanded lambda active	=	FALSE	-		
					primary A/F commanded lambda	=	1	Unitless		
					if the following conditions are met, sm moves to sm = 2					
					Secondary O2 sensor voltage bank1	>=	0.749512	V		
					if the following conditions are met, sm moves to sm = 1					
					Secondary O2 sensor voltage bank1	<	0.749512	V		
					Secondary O2 sensor voltage bank1	>=	0.450439	V		
					statemachine (sm=1) - rich mixture in catalyst	=	TRUE	-		
					a commanded lambda active	=	TRUE	-		
					primary A/F commanded lambda bank1	=	0.91992	Unitless		
					for time	>=	3	sec		
					for time	>=	0.2	sec		
					if the following conditions are met, sm moves to sm = 2					
					((					
					Secondary O2 sensor voltage gradient over 0.05s	>=	0.069	V/s		
					Secondary O2 sensor voltage bank1	>=	0.749512	V		
					)					
					OR					
					Secondary O2 sensor voltage bank1	>=	0.749512	V		
					)					
					Integrated exhaust mass flow bank 2	>=	0.12	g		
					if the following conditions are met, sm moves to sm = 3					
					(					
					Secondary O2 sensor voltage bank 2	>=	0.85083	V		
					OR					
					(					
					Secondary O2 sensor voltage bank 2	>=	0.749512	V		
					Secondary O2 sensor voltage gradient over 0.05s	<=	0.09944	V/s		
					Secondary O2 sensor voltage gradient over 0.05s	>=	-0.09944	V/s		
					Integrated Oxygen mass flow bank 2	>	0.15	g		
					))					
					(					
					Primary A/F sensor lambda bank 2	<=	(a) + (b)			
					(a) Primary lambda control set point bank 2	(a)				
					(b) maximum lambda deviation of lean mixture	(b)	0.05005	Unitless		
					Primary A/F sensor lambda bank 2	>=	(a) - (b)			
					(a) Primary lambda control set point					
					(b) maximum lambda deviation of rich mixture		0.05005	Unitless		
					for time	>=	0.2	sec		
					Integrated rich exhaust gas mass flow bank 2	>=	15	g		
					)					
					(					
					Secondary O2 sensor voltage bank 2	>	(a) + (b)			
					(a) minimum secondary O2 voltage					
					(b) Offset voltage of Secondary O2 sensor	=	0.030518	V		
					)					
					statemachine (sm=2) - Lean mixture in catalyst					
					a commanded lambda active	=	TRUE	-		
					primary A/F commanded lambda	=	1.08008	Unitless		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 TEST GROUP: KGMXV04.2088 EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					for time	>=	3	sec		
					for time	>=	0.2	sec		
					if the following conditions are met, sm moves to sm = 4					
					((					
					Secondary O2 sensor voltage	<=	0.150146	V		
					for time	>=	0.1	sec		
					)					
					OR					
					(					
					Secondary O2 sensor voltage	<=	0.150146	V		
					Secondary O2 sensor voltage gradient over 0.05s	<=	0.09944	V/s		
					Secondary O2 sensor voltage gradient over 0.05s	>=	-0.09944	V/s		
					Integrated Oxygen mass flow bank 2	>	0.1	g		
					))					
					(					
					Primary A/F sensor lambda	<=	(a) + (b)			
					(a) Primary lambda control set point	(a)				
					(b) maximum lambda deviation of lean mixture	(b)	0.05005	Unitless		
					Primary A/F sensor lambda	>=	(a) - (b)			
					(a) Primary lambda control set point					
					(b) maximum lambda deviation of rich mixture		0.05005	Unitless		
					for time	>=	0.2	sec		
					Integrated lean exhaust gas mass flow bank 2	>=	15	g		
					)					
					statemachine (sm=3) - Lean mixture in catalyst	**=**	**TRUE**	-		
					a commanded lambda active bank 2	=	TRUE	-		
					primary A/F commanded lambda bank 2	=	1.08008	Unitless		
					for time	>=	3	sec		
					for time	>=	0.2	sec		
					if the following conditions are met, sm moves to sm = 4					
					(					
					Secondary O2 sensor voltage bank 2	<=	0.150146	V		
					for time	>=	0.1	sec		
					OR					
					(					
					Secondary O2 sensor voltage bank 2	<=	0.150146	V		
					Secondary O2 sensor voltage gradient over 0.05s	<=	0.09944	V/s		
					Secondary O2 sensor voltage gradient over 0.05s	>=	-0.09944	V/s		
					Integrated Oxygen mass flow bank 2	>	0.1	g		
					))					
					(					
					Primary A/F sensor lambda bank 2	<=	(a) + (b)			
					(a) Primary lambda control set point	(a)				
					(b) maximum lambda deviation of lean mixture	(b)	0.05005	Unitless		
					Primary A/F sensor lambda bank 2	>=	(a) - (b)			
					(a) Primary lambda control set point					
					(b) maximum lambda deviation of rich mixture		0.05005	Unitless		
					for time	>=	0.2	sec		
					Integrated lean exhaust gas mass flow bank 2	>=	15	g		
					)					
					statemachine (sm=4) - Rich mixture in catalyst	=	TRUE	-		
					a commanded lambda active	=	TRUE	-		
					primary A/F commanded lambda	=	0.91992	Unitless		
					for time	>=	3	sec		
					for time	>=	0.2	sec		
					if the following conditions are met, sm moves to sm = 3					
					(					
					Secondary O2 sensor voltage bank 2	>=	0.85083	V		
					OR					
					(					
					Secondary O2 sensor voltage bank 2	>=	0.749512	V		
					Secondary O2 sensor voltage gradient over 0.05s	<=	0.09944	V/s		
					Secondary O2 sensor voltage gradient over 0.05s	>=	-0.09944	V/s		
					Integrated Oxygen mass flow bank 2	>	0.15	g		
					))					
					(					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Primary A/F sensor lambda bank 2	<= (a) + (b)		
					(a) Primary lambda control set point bank 2	(a)		
					(b) maximum lambda deviation of lean mixture	(b) 0.05005 Unitless		
					Primary A/F sensor lambda bank 2	>= (a) - (b)		
					(a) Primary lambda control set point			
					(b) maximum lambda deviation of rich mixture	0.05005 Unitless		
					for time	>= 0.2 sec		
					Integrated rich exhaust gas mass flow bank 2	>= 15 g		
					)			
					(			
					Secondary O2 sensor voltage difference: (a) - (b)	> 0.014648 V		
					(a) old Secondary O2 sensor voltage bank 2			
					(b) Secondary O2 sensor voltage bank 2			
					Secondary O2 sensor voltage bank 2	>= 0.650635 V		
					)			
					No pending or confirmed DTCs	= see sheet inhibit table		
					Basic enable conditions met	= see sheet enable tables -		
Downstream Exhaust Gas Sensor	P013E	Compares measured delayed response time of Seconday O2 sensor 2 bank 1 with the calibrated threshold when the sensor voltage changes Rich to Lean	Ewma filtered delay response time of Secondary O2 sensor 2, bank 1, Rich to Lean	> 0.75 sec	primary A/F commanded lambda	<= 1.09009 Unitless	2 Once per driving cycle	1 Trip
			(a) Raw delay response time of secondary O2 S2B1 Rich to Lean		primary A/F commanded lambda	>= 0.8501 Unitless		
			(b) Exhaust mass flow dependent correction for delay response time of secondary O2 sensor Rich to Lean	0 sec	engine runs	= TRUE -		
					Vehicle speed	>= 4.350528278 mph		
					engine speed	<= 3520 rpm		
					engine speed	>= 1000 rpm		
					engine load @ full engine mode (see Look-Up-Table #P0420-4)	>= 12 to 19.992 %		
					(engine load of full engine mode / 2) @ half engine mode (see Look-Up-Table #P0420-4)	>= 12 to 19.992 %		
					for time	>= 3 sec		
					Ratio total charge to charge in cylinder	< 1.00024 Unitless		
					for time	>= 2 sec		
					Integrated air mass flow	> 60 g		
					measured ambient temperatuer	>= -39.8 deg C		
					measured ambient pressure	>= 50 kPa		
					measured engine coolant temperature	>= 52.06 deg C		
					no transmission gear change	= TRUE -		
					for time	>= 2 sec		
					)			
					(			
					integrated exhaust gas mass flow after the following operation points are in the monitoring window bank 1	> 60 g		
					(			
					Change of exhaust gas mass flow bank 1: (a) - (b)	<= 6.944444444 g/sec		
					Change of exhaust gas mass flow bank 1: (a) - (b)	>= -6.944444444 g/sec		
					(a) exhaust gas mass flow bank 1			
					(b) filtered exhaust gas mass flow bank 1			
					PT1 time constant	1.20029304 sec		
					Low window exhaust gas mass flow bank 1 (see Look-Up-Table #P0420-2)	<= 22.2222222222222 to 27.7777777777778 g/sec		
					Low window exhaust gas mass flow bank 1	>= 3.888888889 g/sec		
					Low window exhaust gas mass flow bank 1	>= (a) - (b)		
					(a) minimum exhaust gas mass flow bank 1	3.888888889 g/sec		
					(b) offset exhaust gas mass flow bank 1 at tip-out	0.833333333 g/sec		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 TEST GROUP: KGMXV04.2088 EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					for time	>=	3	sec		
					High window exhaust gas mass flow bank 1 (see Look-Up-Table #P0420-1)	<=	22.2222222222222 to 27.7777777777778	g/sec		
					High window exhaust gas mass flow bank 1	>=	3.888888889	g/sec		
					)					
					(					
					Modeled catalyst temperature gradient bank 1: (a) - (b)	<=	40.0078	deg C		
					Modeled catalyst temperature gradient bank 1: (a) - (b)	>=	-40.0078	deg C		
					(a) Modeled catalyst temperature bank 1					
					(b) filtered modeled catalyst temperature bank 1 PT1 time constant	=	4.9989321	sec		
					Low window modeled catalyst temperature	<=	650.006	deg C		
					Low window Modeled catalyst temperature bank 1	>=	520.022	deg C		
					High window modeled catalyst temperature bank 1	<=	780.014	deg C		
					High window Modeled catalyst temperature bank 1	>=	600.014	deg C		
					Modeled catalyst temperature bank 1 after the first engine start and driving	>	420.06	deg C		
					for time	>=	12	sec		
					))					
					((					
					Integrated purge mass flow after a longer purge stop	>=	1.51	g		
					HC concentration factor in chacoal canister	<=	40	factor		
					relative fuel portion of canister purge to injected fuel mass : (a) / (b)		0.200012	Unitless		
					(a) fuel mass supplied by canister purge control					
					(b) fuel mass supplied by injection					
					OR					
					open loop canister purge control	=	TRUE	-		
					OR					
					canister purge control mass flow into the manifold	<=	5.555555556	g/sec		
					((					
					integrated exhaust gas mass flow bank 1 since engine start (see Look-Up-Table #P0420-3)	>	1600 to 2850	g		
					integrated exhaust gas mass flow bank 1 after the following sensors's readiness	>	40	g		
					(					
					Secondary O2 sensor readiness bank 1					
					Primary A/F sensor readiness bank 1					
					)					
						>=	299.991	deg C		
					temperature deviation of Primary A/F sensor heater control bank 1: (a) - (b)	<	64.9922	deg C		
					(a) primary A/F sensor temperature set point for heater control		800.006	deg C		
					(b) measured primary A/F sensor temperature for heater control					
					)					
					statemachine = sm					
					statemachine (sm =0) : inactive	=				
					a commanded lambda active	=	FALSE	-		
					primary A/F commanded lambda	=	1	Unitless		
					if the following conditions are met, sm moves to sm = 2					
					Secondary O2 sensor voltage Bank 1	>=	0.749512	V		
					if the following conditions are met, sm moves to sm = 1					
					Secondary O2 sensor voltage Bank 1	<	0.749512	V		
					Secondary O2 sensor voltage Bank 1	>=	0.450439	V		
					statemachine (sm=1) - rich mixture in catalyst	=	TRUE	-		
					a commanded lambda active	=	TRUE	-		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 TEST GROUP: KGMXV04.2088 EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					primary A/F commanded lambda Bank 1	=	0.91992	Unitless		
					for time	>=	3	sec		
					for time	>=	0.2	sec		
					if the following conditions are met, sm moves to sm = 2					
					((					
					Secondary O2 sensor voltage gradient over 0.05s	>=	0.069	V/s		
					Secondary O2 sensor voltage Bank 1	>=	0.749512	V		
					)					
					OR					
					Secondary O2 sensor voltage Bank 1	>=	0.749512	V		
					)					
					Integrated exhaust mass flow bank 1	>=	0.12	g		
					if the following conditions are met, sm moves to sm = 3					
					(					
					Secondary O2 sensor voltage bank 1	>=	0.85083	V		
					OR					
					(					
					Secondary O2 sensor voltage bank 1	>=	0.749512	V		
					Secondary O2 sensor voltage gradient over 0.05s	<=	0.09944	V/s		
					Secondary O2 sensor voltage gradient over 0.05s	>=	-0.09944	V/s		
					Integrated Oxygen mass flow bank 1	>	0.15	g		
					))					
					(					
					Primary A/F sensor lambda bank 1	<=	(a) + (b)			
					(a) Primary lambda control set point bank 1	(a)				
					(b) maximum lambda deviation of lean mixture	(b)	0.05005	Unitless		
					Primary A/F sensor lambda bank 1	>=	(a) - (b)			
					(a) Primary lambda control set point					
					(b) maximum lambda deviation of rich mixture		0.05005	Unitless		
					for time	>=	0.2	sec		
					Integrated rich exhaust gas mass flow bank 1	>=	15	g		
					)					
					And					
					(					
					Secondary O2 sensor voltage bank 1	>	(a) + (b)			
					(a) minimum secondary O2 voltage					
					(b) Offset voltage of Secondary O2 sensor	=	0.030518	V		
					)					
					statemachine (sm=2) - Lean mixture in catalyst					
					a commanded lambda active	=	TRUE	-		
					primary A/F commanded lambda	=	1.08008	Unitless		
					for time	>=	3	sec		
					for time	>=	0.2	sec		
					if the following conditions are met, sm moves to sm = 4					
					((					
					Secondary O2 sensor voltage	<=	0.150146	V		
					for time	>=	0.1	sec		
					)					
					OR					
					(					
					Secondary O2 sensor voltage	<=	0.150146	V		
					Secondary O2 sensor voltage gradient over 0.05s	<=	0.09944	V/s		
					Secondary O2 sensor voltage gradient over 0.05s	>=	-0.09944	V/s		
					Integrated Oxygen mass flow bank 1	>	0.1	g		
					))					
					(					
					Primary A/F sensor lambda	<=	(a) + (b)			
					(a) Primary lambda control set point	(a)				
					(b) maximum lambda deviation of lean mixture	(b)	0.05005	Unitless		
					Primary A/F sensor lambda	>=	(a) - (b)			
					(a) Primary lambda control set point					
					(b) maximum lambda deviation of rich mixture		0.05005	Unitless		
					for time	>=	0.2	sec		
					Integrated lean exhaust gas mass flow bank 1	>=	15	g		
					)					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					statemachine (sm=3) -	**=**	**TRUE**	-		
					Lean mixture in catalyst					
					a commanded lambda active bank 1	=	TRUE	-		
					primary A/F commanded lambda bank 1	=	1.08008	Unitless		
					for time	>=	3	sec		
					for time	>=	0.2	sec		
					if the following conditions are met,					
					sm moves to sm = 4					
					(					
					Secondary O2 sensor voltage bank 1	<=	0.150146	V		
					for time	>=	0.1	sec		
					OR					
					(					
					Secondary O2 sensor voltage bank 1	<=	0.150146	V		
					Secondary O2 sensor voltage gradient over 0.05s	<=	0.09944	V/s		
					Secondary O2 sensor voltage gradient over 0.05s	>=	-0.09944	V/s		
					Integrated Oxygen mass flow bank 1	>	0.1	g		
					))					
					(					
					Primary A/F sensor lambda bank 1	<=	(a) + (b)			
					(a) Primary lambda control set point	(a)				
					(b) maximum lambda deviation of lean mixture	(b)	0.05005	Unitless		
					Primary A/F sensor lambda bank 1	>=	(a) - (b)			
					(a) Primary lambda control set point					
					(b) maximum lambda deviation of rich mixture		0.05005	Unitless		
					for time	>=	0.2	sec		
					Integrated lean exhaust gas mass flow bank 1	>=	15	g		
					)					
					(					
					Primary A/F commanded lambda bank 1	<=	(a) + (b)			
					(a) Primary A/F commanded lambda bank 1					
					(b) offset to the commanded lambda bank 1		0.06006			
					Secondary O2 sensor voltage bank 1	>	(a) + (b)			
					(a) minimum secondary O2 voltage Bank 1					
					(b) Offset voltage of Secondary O2 sensor	=	0.030518	V		
					)					
					statemachine (sm=4) -	=	TRUE	-		
					Rich mixture in catalyst					
					a commanded lambda active	=	TRUE	-		
					primary A/F commanded lambda	=	0.91992	Unitless		
					for time	>=	3	sec		
					for time	>=	0.2	sec		
					if the following conditions are met,					
					sm moves to sm = 3					
					(					
					Secondary O2 sensor voltage bank 1	>=	0.85083	V		
					OR					
					(					
					Secondary O2 sensor voltage bank 1	>=	0.749512	V		
					Secondary O2 sensor voltage gradient over 0.05s	<=	0.09944	V/s		
					Secondary O2 sensor voltage gradient over 0.05s	>=	-0.09944	V/s		
					Integrated Oxygen mass flow bank 1	>	0.15	g		
					))					
					(					
					Primary A/F sensor lambda bank 1	<=	(a) + (b)			
					(a) Primary lambda control set point bank 1	(a)				
					(b) maximum lambda deviation of lean mixture	(b)	0.05005	Unitless		
					Primary A/F sensor lambda bank 1	>=	(a) - (b)			
					(a) Primary lambda control set point					
					(b) maximum lambda deviation of rich mixture		0.05005	Unitless		
					for time	>=	0.2	sec		
					Integrated rich exhaust gas mass flow bank 1	>=	15	g		
					)					
					EWMA filter strategy					
					Fast initialization mode (FIR)	**=**	**TRUE**	-		
					EWMA filter initial value for FIR mode	=	0.4	sec		
					EWMA filter constant	=	0.3594	Unitless		
					Maximum number of samples per trip	=	2	counts		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Total number of samples for FIR mode	= 4 counts		
					Response to Step Change mode (RSC)	= TRUE -		
					Response to Step Change mode inactive	= TRUE -		
					absolute difference : ABS((a) - (b))	> (b) * (c)		
					(a) measured delayed response time			
					(b) EWMA filtered normalized monitoring result			
					(c) Step change detection factor	0.45 sec		
					EWMA filter constant	= 0.3594 Unitless		
					Maximum number of samples per trip	= 2 counts		
					Total number of samples for RSC mode	= 4 counts		
					EWMA filter constant	= 0.3594 Unitless		
					Total number of samples for stabilized mode	= 1 counts		
					No pending or confirmed DTCs	= see sheet inhibit table		
					Basic enable conditions met	= see sheet enable tables -		
	P013F	Compares measured delay response time of Seconday O2 sensor 2 bank 1 with the calibrated threshold when the sensor voltage changes Lean to Rich	arithmetic filtered delay response time tiArth of Secondary O2 sensor 2, bank 1, Lean to Rich: tiArth	> 0.65 sec	primary A/F commanded lambda	<= 1.09009 Unitless	2 counts	2 Trip
			tiArth = old tiArth + ((((a) - (b)) - old tiArth) * 1/ sample order)		primary A/F commanded lambda	>= 0.8501 Unitless		
			(a) Raw delay response time of secondary O2 S2B1 Lean to Rich		engine runs	= TRUE -		
			(b) Exhaust mass flow dependent correction for delay response time of secondary O2 sensor Lean to Rich	0 sec	Vehicle speed	>= 4.350528278 mph		
					engine speed	<= 3520 rpm		
					engine speed	>= 1000 rpm		
					engine load @ full engine mode (see Look-Up-Table #P0420-4)	>= 12 to 19.992 %		
					(engine load of full engine mode / 2) @ half engine mode (see Look-Up-Table #P0420-4)	>= 12 to 19.992 %		
					for time	>= 3 sec		
					Ratio total charge to charge in cylinder	< 1.00024 Unitless		
					for time	>= 2 sec		
					Integrated air mass flow	> 100 g		
					measured ambient temperatuer	>= -39.8 deg C		
					measured ambient pressure	>= 50 kPa		
					measured engine coolant temperature	>= 52.06 deg C		
					no transmission gear change	= TRUE -		
					for time	>= 2 sec		
					)			
					(			
					integrated exhaust gas mass flow after the following operation points are in the monitoring window bank 1	> 100 g		
					(			
					Change of exhaust gas mass flow bank 1: (a) - (b)	<= 6.944444444 g/sec		
					Change of exhaust gas mass flow bank 1: (a) - (b)	>= -6.944444444 g/sec		
					(a) exhaust gas mass flow bank 1			
					(b) filtered exhaust gas mass flow bank 1			
					PT1 time constant	1.20029304 sec		
					Low window exhaust gas mass flow bank 1 (see Look-Up-Table #P0420-2)	<= 22.222222222222 2 to 27.777777777777 8 g/sec		
					Low window exhaust gas mass flow bank 1	>= 3.888888889 g/sec		
					Low window exhaust gas mass flow bank 1	>= (a) - (b)		
					(a) minimum exhaust gas mass flow bank 1	3.888888889 g/sec		
					(b) offset exhaust gas mass flow bank 1 at tip-out	0.833333333 g/sec		
					for time	>= 3 sec		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					High window exhaust gas mass flow bank 1 (see Look-Up-Table #P0420-1)	<=	22.2222222222222 to 27.7777777777778	g/sec		
					High window exhaust gas mass flow bank 1	>=	3.888888889	g/sec		
					)					
					(					
					Modeled catalyst temperature gradient bank 1: (a) - (b)	<=	40.0078	deg C		
					Modeled catalyst temperature gradient bank 1: (a) - (b)	>=	-40.0078	deg C		
					(a) Modeled catalyst temperature bank 1 (b) filtered modeled catalyst temperature bank 1 PT1 time constant	=	4.9989321	sec		
					Low window modeled catalyst temperature bank 1	<=	650.006	deg C		
					Low window Modeled catalyst temperature bank 1	>=	520.022	deg C		
					High window modeled catalyst temperature bank 1	<=	780.014	deg C		
					High window Modeled catalyst temperature bank 1	>=	600.014	deg C		
					Modeled catalyst temperature bank 1 after the first engine start and driving	>	420.06	deg C		
					for time	>=	12	sec		
					))					
					((					
					Integrated purge mass flow after a longer purge stop	>=	1.51	g		
					HC concentration factor in chacoal canister	<=	40	factor		
					relative fuel portion of canister purge to injected fuel mass : (a) / (b) (a) fuel mass supplied by canister purge control (b) fuel mass supplied by injection		0.200012	Unitless		
					OR					
					open loop canister purge control	=	TRUE	-		
					OR					
					canister purge control mass flow into the manifold	<=	5.555555556	g/sec		
					((					
					integrated exhaust gas mass flow bank 1 since engine start (see Look-Up-Table #P0420-3)	>	1600 to 2850	g		
					integrated exhaust gas mass flow bank 1 after the following sensors's readiness	>	40	g		
					(					
					Secondary O2 sensor readiness bank 1					
					Primary A/F sensor readiness bank 1					
					)					
						>=	299.991	deg C		
					temperature deviation of Primary A/F sensor heater control bank 1: (a) - (b)	<	64.9922	deg C		
					(a) primary A/F sensor temperature set point for heater control		800.006	deg C		
					(b) measured primary A/F sensor temperature for heater control					
					)					
					statemachine = sm					
					statemachine (sm =0) : inactive	=				
					a commanded lambda active	=	FALSE	-		
					primary A/F commanded lambda	=	1	Unitless		
					if the following conditions are met, sm moves to sm = 2					
					Secondary O2 sensor voltage Bank 1	>=	0.749512	V		
					if the following conditions are met, sm moves to sm = 1					
					Secondary O2 sensor voltage Bank 1	<	0.749512	V		
					Secondary O2 sensor voltage Bank 1	>=	0.450439	V		
					statemachine (sm=1) - rich mixture in catalyst	=	TRUE	-		
					a commanded lambda active	=	TRUE	-		
					primary A/F commanded lambda Bank 1	=	0.91992	Unitless		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					for time	>= 3 sec		
					for time	>= 0.2 sec		
					if the following conditions are met, sm moves to sm = 2			
					((			
					Secondary O2 sensor voltage gradient over 0.05s	>= 0.069 V/s		
					Secondary O2 sensor voltage Bank 1	>= 0.749512 V		
					)			
					OR			
					Secondary O2 sensor voltage Bank 1	>= 0.749512 V		
					)			
					Integrated exhaust mass flow bank 1	>= 0.12 g		
					if the following conditions are met, sm moves to sm = 3			
					(			
					Secondary O2 sensor voltage bank 1	>= 0.85083 V		
					OR			
					(			
					Secondary O2 sensor voltage bank 1	>= 0.749512 V		
					Secondary O2 sensor voltage gradient over 0.05s	<= 0.09944 V/s		
					Secondary O2 sensor voltage gradient over 0.05s	>= -0.09944 V/s		
					Integrated Oxygen mass flow bank 1	> 0.15 g		
					))			
					(			
					Primary A/F sensor lambda bank 1	<= (a) + (b)		
					(a) Primary lambda control set point bank 1	(a)		
					(b) maximum lambda deviation of lean mixture	(b) 0.05005 Unitless		
					Primary A/F sensor lambda bank 1	>= (a) - (b)		
					(a) Primary lambda control set point			
					(b) maximum lambda deviation of rich mixture	0.05005 Unitless		
					for time	>= 0.2 sec		
					Integrated rich exhaust gas mass flow bank 1	>= 15 g		
					)			
					(			
					Secondary O2 sensor voltage bank 1	> (a) + (b)		
					(a) minimum secondary O2 voltage			
					(b) Offset voltage of Secondary O2 sensor	= 0.030518 V		
					)			
					statemachine (sm=2) - Lean mixture in catalyst			
					a commanded lambda active	= TRUE -		
					primary A/F commanded lambda	= 1.08008 Unitless		
					for time	>= 3 sec		
					for time	>= 0.2 sec		
					if the following conditions are met, sm moves to sm = 4			
					((			
					Secondary O2 sensor voltage	<= 0.150146 V		
					for time	>= 0.1 sec		
					)			
					OR			
					(			
					Secondary O2 sensor voltage	<= 0.150146 V		
					Secondary O2 sensor voltage gradient over 0.05s	<= 0.09944 V/s		
					Secondary O2 sensor voltage gradient over 0.05s	>= -0.09944 V/s		
					Integrated Oxygen mass flow bank 1	> 0.1 g		
					))			
					(			
					Primary A/F sensor lambda	<= (a) + (b)		
					(a) Primary lambda control set point	(a)		
					(b) maximum lambda deviation of lean mixture	(b) 0.05005 Unitless		
					Primary A/F sensor lambda	>= (a) - (b)		
					(a) Primary lambda control set point			
					(b) maximum lambda deviation of rich mixture	0.05005 Unitless		
					for time	>= 0.2 sec		
					Integrated lean exhaust gas mass flow bank 1	>= 15 g		
					)			
					statemachine (sm=3) - Lean mixture in catalyst	**= TRUE** -		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					a commanded lambda active bank 1	= TRUE -		
					primary A/F commanded lambda bank 1	= 1.08008 Unitless		
					for time	>= 3 sec		
					for time	>= 0.2 sec		
					if the following conditions are met, sm moves to sm = 4			
					(			
					Secondary O2 sensor voltage bank 1	<= 0.150146 V		
					for time	>= 0.1 sec		
					OR			
					(			
					Secondary O2 sensor voltage bank 1	<= 0.150146 V		
					Secondary O2 sensor voltage gradient over 0.05s	<= 0.09944 V/s		
					Secondary O2 sensor voltage gradient over 0.05s	>= -0.09944 V/s		
					Integrated Oxygen mass flow bank 1	> 0.1 g		
					))			
					(			
					Primary A/F sensor lambda bank 1	<= (a) + (b)		
					(a) Primary lambda control set point	(a)		
					(b) maximum lambda deviation of lean mixture	(b) 0.05005 Unitless		
					Primary A/F sensor lambda bank 1	>= (a) - (b)		
					(a) Primary lambda control set point			
					(b) maximum lambda deviation of rich mixture	0.05005 Unitless		
					for time	>= 0.2 sec		
					Integrated lean exhaust gas mass flow bank 1	>= 15 g		
					)			
					statemachine (sm=4) - Rich mixture in catalyst	= TRUE -		
					a commanded lambda active	= TRUE -		
					primary A/F commanded lambda	= 0.91992 Unitless		
					for time	>= 3 sec		
					for time	>= 0.2 sec		
					if the following conditions are met, sm moves to sm = 3			
					(			
					Secondary O2 sensor voltage bank 1	>= 0.85083 V		
					OR			
					(			
					Secondary O2 sensor voltage bank 1	>= 0.749512 V		
					Secondary O2 sensor voltage gradient over 0.05s	<= 0.09944 V/s		
					Secondary O2 sensor voltage gradient over 0.05s	>= -0.09944 V/s		
					Integrated Oxygen mass flow bank 1	> 0.15 g		
					))			
					(			
					Primary A/F sensor lambda bank 1	<= (a) + (b)		
					(a) Primary lambda control set point bank 1	(a)		
					(b) maximum lambda deviation of lean mixture	(b) 0.05005 Unitless		
					Primary A/F sensor lambda bank 1	>= (a) - (b)		
					(a) Primary lambda control set point			
					(b) maximum lambda deviation of rich mixture	0.05005 Unitless		
					for time	>= 0.2 sec		
					Integrated rich exhaust gas mass flow bank 1	>= 15 g		
					)			
					(			
					Primary A/F commanded lambda bank 1	<= (a) + (b)		
					(a) Primary A/F commanded lambda bank 1			
					(b) offset to the commanded lambda bank 1	0.1001		
					Secondary O2 sensor voltage bank 1	> (a) + (b)		
					(a) minimum secondary O2 voltage Bank 1			
					(b) Offset voltage of Secondary O2 sensor	= 0.030518 V		
					)			
					No pending or confirmed DTCs	= see sheet inhibit table		
					Basic enable conditions met	= see sheet enable tables -		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required		MIL Illum.
Downstream Exhaust Gas Sensor	P014A	Compares measured delay response time of Seconday O2 sensor 2 bank 2 with the calibrated threshold when the sensor voltage changes Rich to Lean	Ewma filtered delay response time of Secondary O2 sensor 2, bank 2, Rich to Lean	>	0.75	sec	primary A/F commanded lambda Bank 2	<=	1.09009	Unitless	2	Once per driving cycle	1 Trip
			(a) Raw delay response time of secondary O2 S2B2 Rich to Lean				primary A/F commanded lambda Bank 2	>=	0.8501	Unitless			
			(b) Exhaust mass flow dependent correction for delay response time of secondary O2 sensor Rich to Lean	=	0	sec	engine runs	=	TRUE	-			
							Vehicle speed	>=	4.350528278	mph			
							engine speed	<=	3520	rpm			
							engine speed	>=	1000	rpm			
							engine load @ full engine mode (see Look-Up-Table #P0420-4)	>=	12 to 19.992	%			
							(engine load of full engine mode / 2) @ half engine mode (see Look-Up-Table #P0420-4)	>=	12 to 19.992	%			
							for time	>=	3	sec			
							Ratio total charge to charge in cylinder	<	1.00024	Unitless			
							for time	>=	2	sec			
							Integrated air mass flow	>	60	g			
							measured ambient temperatuer	>=	-39.8	deg C			
							measured ambient pressure	>=	50	kPa			
							measured engine coolant temperature	>=	52.06	deg C			
							no transmission gear change	=	TRUE	-			
							for time	>=	2	sec			
							)						
							(						
							integrated exhaust gas mass flow after the following operation points are in the monitoring window bank 2	>	60	g			
							(						
							Change of exhaust gas mass flow bank 2: (a) - (b)	<=	6.944444444	g/sec			
							Change of exhaust gas mass flow bank 2: (a) - (b)	>=	-6.944444444	g/sec			
							(a) exhaust gas mass flow bank 2						
							(b) filtered exhaust gas mass flow bank 2						
							PT1 time constant		1.20029304	sec			
							Low window exhaust gas mass flow bank 2 (see Look-Up-Table #P0420-2)	<=	22.2222222222222 to 27.7777777777778	g/sec			
							Low window exhaust gas mass flow bank 2	>=	3.888888889	g/sec			
							Low window exhaust gas mass flow bank 2	>=	(a) - (b)				
							(a) minimum exhaust gas mass flow bank 2		3.888888889	g/sec			
							(b) offset exhaust gas mass flow bank 2 at tip-out		0.833333333	g/sec			
							for time	>=	3	sec			
							High window exhaust gas mass flow bank 2 (see Look-Up-Table #P0420-1)	<=	22.2222222222222 to 27.7777777777778	g/sec			
							High window exhaust gas mass flow bank 2	>=	3.888888889	g/sec			
							)						
							(						
							Modeled catalyst temperature gradient bank 2: (a) - (b)	<=	40.0078	deg C			
							Modeled catalyst temperature gradient bank 2: (a) - (b)	>=	-40.0078	deg C			
							(a) Modeled catalyst temperature bank 2						
							(b) filtered modeled catalyst temperature bank 2 PT1 time constant	=	4.9989321	sec			
							Low window modeled catalyst temperature	<=	650.006	deg C			
							Low window Modeled catalyst temperature bank 2	>=	520.022	deg C			
							High window modeled catalyst temperature bank 2	<=	780.014	deg C			
							High window Modeled catalyst temperature bank 2	>=	600.014	deg C			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Modeled catalyst temperature bank 2 after the first engine start and driving	> 420.06 deg C		
					for time	>= 12 sec		
					))			
					((			
					Integrated purge mass flow after a longer purge stop	>= 1.51 g		
					HC concentration factor in chacoal canister	<= 40 factor		
					relative fuel portion of canister purge to injected fuel mass : (a) / (b) (a) fuel mass supplied by canister purge control (b) fuel mass supplied by injection	0.200012 Unitless		
					OR			
					open loop canister purge control	= TRUE -		
					OR			
					canister purge control mass flow into the manifold	<= 5.555555556 g/sec		
					((			
					integrated exhaust gas mass flow bank 2 since engine start (see Look-Up-Table #P0420-3)	> 1600 to 2850 g		
					integrated exhaust gas mass flow bank 2 after the following sensors's readiness	> 40 g		
					(			
					Secondary O2 sensor readiness bank 2			
					Primary A/F sensor readiness bank 2			
					)			
						>= 299.991 deg C		
					temperature deviation of Primary A/F sensor heater control bank 2: (a) - (b)	< 64.9922 deg C		
					(a) primary A/F sensor temperature set point for heater control	800.006 deg C		
					(b) measured primary A/F sensor temperature for heater control			
					)			
					statemachine = sm			
					statemachine (sm =0) : inactive	=		
					a commanded lambda active	= FALSE -		
					primary A/F commanded lambda	= 1 Unitless		
					if the following conditions are met, sm moves to sm = 2			
					Secondary O2 sensor voltage Bank 2	>= 0.749512 V		
					if the following conditions are met, sm moves to sm = 1			
					Secondary O2 sensor voltage Bank 2	< 0.749512 V		
					Secondary O2 sensor voltage Bank 2	>= 0.450439 V		
					statemachine (sm=1) - rich mixture in catalyst	= TRUE -		
					a commanded lambda active	= TRUE -		
					primary A/F commanded lambda Bank 2	= 0.91992 Unitless		
					for time	>= 3 sec		
					for time	>= 0.2 sec		
					if the following conditions are met, sm moves to sm = 2			
					((			
					Secondary O2 sensor voltage gradient over 0.05s	>= 0.069 V/s		
					Secondary O2 sensor voltage Bank 2	>= 0.749512 V		
					)			
					OR			
					Secondary O2 sensor voltage Bank 2	>= 0.749512 V		
					)			
					Integrated exhaust mass flow bank 2	>= 0.12 g		
					if the following conditions are met, sm moves to sm = 3			
					(			
					Secondary O2 sensor voltage bank 2	>= 0.85083 V		
					OR			
					(			
					Secondary O2 sensor voltage bank 2	>= 0.749512 V		
					Secondary O2 sensor voltage gradient over 0.05s	<= 0.09944 V/s		
					Secondary O2 sensor voltage gradient over 0.05s	>= -0.09944 V/s		
					Integrated Oxygen mass flow bank 2	> 0.15 g		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 TEST GROUP: KGMXV04.2088 EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					))			
					(			
					Primary A/F sensor lambda bank 2	<= (a) + (b)		
					(a) Primary lambda control set point bank 2	(a)		
					(b) maximum lambda deviation of lean mixture	(b) 0.05005 Unitless		
					Primary A/F sensor lambda bank 2	>= (a) - (b)		
					(a) Primary lambda control set point			
					(b) maximum lambda deviation of rich mixture	0.05005 Unitless		
					for time	>= 0.2 sec		
					Integrated rich exhaust gas mass flow bank 2	>= 15 g		
					)			
					And			
					(			
					Secondary O2 sensor voltage bank 2	> (a) + (b)		
					(a) minimum secondary O2 voltage			
					(b) Offset voltage of Secondary O2 sensor	= 0.030518 V		
					)			
					statemachine (sm=2) - Lean mixture in catalyst			
					a commanded lambda active	= TRUE -		
					primary A/F commanded lambda	= 1.08008 Unitless		
					for time	>= 3 sec		
					for time	>= 0.2 sec		
					if the following conditions are met, sm moves to sm = 4			
					((			
					Secondary O2 sensor voltage	<= 0.150146 V		
					for time	>= 0.1 sec		
					)			
					OR			
					(			
					Secondary O2 sensor voltage	<= 0.150146 V		
					Secondary O2 sensor voltage gradient over 0.05s	<= 0.09944 V/s		
					Secondary O2 sensor voltage gradient over 0.05s	>= -0.09944 V/s		
					Integrated Oxygen mass flow bank 2	> 0.1 g		
					))			
					(			
					Primary A/F sensor lambda	<= (a) + (b)		
					(a) Primary lambda control set point	(a)		
					(b) maximum lambda deviation of lean mixture	(b) 0.05005 Unitless		
					Primary A/F sensor lambda	>= (a) - (b)		
					(a) Primary lambda control set point			
					(b) maximum lambda deviation of rich mixture	0.05005 Unitless		
					for time	>= 0.2 sec		
					Integrated lean exhaust gas mass flow bank 2	>= 15 g		
					)			
					statemachine (sm=3) - Lean mixture in catalyst	**= TRUE** -		
					a commanded lambda active bank 2	= TRUE -		
					primary A/F commanded lambda bank 2	= 1.08008 Unitless		
					for time	>= 3 sec		
					for time	>= 0.2 sec		
					if the following conditions are met, sm moves to sm = 4			
					(			
					Secondary O2 sensor voltage bank 2	<= 0.150146 V		
					for time	>= 0.1 sec		
					OR			
					(			
					Secondary O2 sensor voltage bank 2	<= 0.150146 V		
					Secondary O2 sensor voltage gradient over 0.05s	<= 0.09944 V/s		
					Secondary O2 sensor voltage gradient over 0.05s	>= -0.09944 V/s		
					Integrated Oxygen mass flow bank 2	> 0.1 g		
					))			
					(			
					Primary A/F sensor lambda bank 2	<= (a) + (b)		
					(a) Primary lambda control set point	(a)		
					(b) maximum lambda deviation of lean mixture	(b) 0.05005 Unitless		
					Primary A/F sensor lambda bank 2	>= (a) - (b)		
					(a) Primary lambda control set point			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					(b) maximum lambda deviation of rich mixture	0.05005 Unitless		
					for time	>= 0.2 sec		
					Integrated lean exhaust gas mass flow bank 2	>= 15 g		
					)			
					(			
					Primary A/F commanded lambda bank 2	<= (a) + (b)		
					(a) Primary A/F commanded lambda bank 2			
					(b) offset to the commanded lambda bank 2	0.06006		
					Secondary O2 sensor voltage bank 2	> (a) + (b)		
					(a) minimum secondary O2 voltage Bank 2			
					(b) Offset voltage of Secondary O2 sensor	= 0.030518 V		
					)			
					statemachine (sm=4) - Rich mixture in catalyst	= TRUE -		
					a commanded lambda active	= TRUE -		
					primary A/F commanded lambda	= 0.91992 Unitless		
					for time	>= 3 sec		
					for time	>= 0.2 sec		
					if the following conditions are met, sm moves to sm = 3			
					(			
					Secondary O2 sensor voltage bank 2	>= 0.85083 V		
					OR			
					(			
					Secondary O2 sensor voltage bank 2	>= 0.749512 V		
					Secondary O2 sensor voltage gradient over 0.05s	<= 0.09944 V/s		
					Secondary O2 sensor voltage gradient over 0.05s	>= -0.09944 V/s		
					Integrated Oxygen mass flow bank 2	> 0.15 g		
					))			
					(			
					Primary A/F sensor lambda bank 2	<= (a) + (b)		
					(a) Primary lambda control set point bank 2	(a)		
					(b) maximum lambda deviation of lean mixture	(b) 0.05005 Unitless		
					Primary A/F sensor lambda bank 2	>= (a) - (b)		
					(a) Primary lambda control set point			
					(b) maximum lambda deviation of rich mixture	0.05005 Unitless		
					for time	>= 0.2 sec		
					Integrated rich exhaust gas mass flow bank 2	>= 15 g		
					)			
					EWMA filter strategy			
					Fast initialization mode (FIR)	**= TRUE** -		
					EWMA filter initial value for FIR mode	= 0.4 sec		
					EWMA filter constant	= 0.3594 Unitless		
					Maximum number of samples per trip	= 2 counts		
					Total number of samples for FIR mode	= 4 counts		
					Response to Step Change mode (RSC)	**=** TRUE -		
					Response to Step Change mode inactive	= TRUE -		
					absolute difference : ABS((a) - (b))	> (b) * (c)		
					(a) measured delayed response time			
					(b) EWMA filtered normalized monitoring result			
					(c) Step change detection factor	0.45 sec		
					EWMA filter constant	= 0.3594 Unitless		
					Maximum number of samples per trip	= 2 counts		
					Total number of samples for RSC mode	= 4 counts		
					EWMA filter constant	= 0.3594 Unitless		
					Total number of samples for stabilized mode	= 1 counts		
					No pending or confirmed DTCs	= see sheet inhibit table		
					Basic enable conditions met	= see sheet enable tables -		
	P014B	Compares measured delay response time of Seconday O2 sensor 2 bank 2 with the calibrated threshold when the sensor voltage changes Lean to Rich	arithmetic filtered delay response time tiArth of Secondary O2 sensor 2, bank 2, Lean to Rich: tiArth	> 0.65 sec	primary A/F commanded lambda Bank 2	<= 1.09009 Unitless	2 counts	1 Trip

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
			tiArth = old tiArth + ((((a) - (b)) - old tiArth) * 1/ sample order) (a) Raw delay response time of secondary O2 S2B2 Lean to Rich (b) Exhaust mass flow dependent correction for delay response time of secondary O2 sensor Lean to Rich	0 sec	primary A/F commanded lambda Bank 2	>= 0.8501 Unitless		
					engine runs	= TRUE -		
					Vehicle speed	>= 4.350528278 mph		
					engine speed	<= 3520 rpm		
					engine speed	>= 1000 rpm		
					engine load @ full engine mode (see Look-Up-Table #P0420-4)	>= 12 to 19.992 %		
					(engine load of full engine mode / 2) @ half engine mode (see Look-Up-Table #P0420-4)	>= 12 to 19.992 %		
					for time	>= 3 sec		
					Ratio total charge to charge in cylinder	< 1.00024 Unitless		
					for time	>= 2 sec		
					Integrated air mass flow	> 100 g		
					measured ambient temperatuer	>= -39.8 deg C		
					measured ambient pressure	>= 50 kPa		
					measured engine coolant temperature	>= 52.06 deg C		
					no transmission gear change	= TRUE -		
					for time	>= 2 sec		
					)			
					(			
					integrated exhaust gas mass flow after the following operation points are in the monitoring window bank 2	> 100 g		
					(			
					Change of exhaust gas mass flow bank 2: (a) - (b)	<= 6.944444444 g/sec		
					Change of exhaust gas mass flow bank 2: (a) - (b)	>= -6.944444444 g/sec		
					(a) exhaust gas mass flow bank 2 (b) filtered exhaust gas mass flow bank 2 PT1 time constant	1.20029304 sec		
					Low window exhaust gas mass flow bank 2 (see Look-Up-Table #P0420-2)	<= 22.222222222222 2 to 27.777777777777 8 g/sec		
					Low window exhaust gas mass flow bank 2	>= 3.888888889 g/sec		
					Low window exhaust gas mass flow bank 2	>= (a) - (b)		
					(a) minimum exhaust gas mass flow bank 2	3.888888889 g/sec		
					(b) offset exhaust gas mass flow bank 2 at tip-out	0.833333333 g/sec		
					for time	>= 3 sec		
					High window exhaust gas mass flow bank 2 (see Look-Up-Table #P0420-1)	<= 22.222222222222 2 to 27.777777777777 8 g/sec		
					High window exhaust gas mass flow bank 2	>= 3.888888889 g/sec		
					)			
					(			
					Modeled catalyst temperature gradient bank 2: (a) - (b)	<= 40.0078 deg C		
					Modeled catalyst temperature gradient bank 2: (a) - (b)	>= -40.0078 deg C		
					(a) Modeled catalyst temperature bank 2 (b) filtered modeled catalyst temperature bank 2 PT1 time constant	= 4.9989321 sec		
					Low window modeled catalyst temperature bank 2	<= 650.006 deg C		
					Low window Modeled catalyst temperature bank 2	>= 520.022 deg C		
					High window modeled catalyst temperature bank 2	<= 780.014 deg C		
					High window Modeled catalyst temperature bank 2	>= 600.014 deg C		
					Modeled catalyst temperature bank 2 after the first engine start and driving	> 420.06 deg C		
					for time	>= 12 sec		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					))					
					((					
					Integrated purge mass flow after a longer purge stop	>=	1.51	g		
					HC concentration factor in chacoal canister	<=	40	factor		
					relative fuel portion of canister purge to injected fuel mass : (a) / (b) (a) fuel mass supplied by canister purge control (b) fuel mass supplied by injection		0.200012	Unitless		
					OR					
					open loop canister purge control	=	TRUE	-		
					OR					
					canister purge control mass flow into the manifold	<=	5.555555556	g/sec		
					((					
					integrated exhaust gas mass flow bank 2 since engine start (see Look-Up-Table #P0420-3)	>	1600 to 2850	g		
					integrated exhaust gas mass flow bank 2 after the following sensors's readiness	>	40	g		
					(					
					Secondary O2 sensor readiness bank 2					
					Primary A/F sensor readiness bank 2					
					)					
						>=	299.991	deg C		
					temperature deviation of Primary A/F sensor heater control bank 2: (a) - (b)	<	64.9922	deg C		
					(a) primary A/F sensor temperature set point for heater control		800.006	deg C		
					(b) measured primary A/F sensor temperature for heater control					
					)					
					statemachine = sm					
					statemachine (sm =0) : inactive	=				
					a commanded lambda active	=	FALSE	-		
					primary A/F commanded lambda	=	1	Unitless		
					if the following conditions are met, sm moves to sm = 2					
					Secondary O2 sensor voltage Bank 2	>=	0.749512	V		
					if the following conditions are met, sm moves to sm = 1					
					Secondary O2 sensor voltage Bank 2	<	0.749512	V		
					Secondary O2 sensor voltage Bank 2	>=	0.450439	V		
					statemachine (sm=1) - rich mixture in catalyst	=	TRUE	-		
					a commanded lambda active	=	TRUE	-		
					primary A/F commanded lambda Bank 2	=	0.91992	Unitless		
					for time	>=	3	sec		
					for time	>=	0.2	sec		
					if the following conditions are met, sm moves to sm = 2					
					((					
					Secondary O2 sensor voltage gradient over 0.05s	>=	0.069	V/s		
					Secondary O2 sensor voltage Bank 2	>=	0.749512	V		
					)					
					OR					
					Secondary O2 sensor voltage Bank 2	>=	0.749512	V		
					)					
					Integrated exhaust mass flow bank 2	>=	0.12	g		
					if the following conditions are met, sm moves to sm = 3					
					(					
					Secondary O2 sensor voltage bank 2	>=	0.85083	V		
					OR					
					(					
					Secondary O2 sensor voltage bank 2	>=	0.749512	V		
					Secondary O2 sensor voltage gradient over 0.05s	<=	0.09944	V/s		
					Secondary O2 sensor voltage gradient over 0.05s	>=	-0.09944	V/s		
					Integrated Oxygen mass flow bank 2	>	0.15	g		
					))					
					(					
					Primary A/F sensor lambda bank 2	<=	(a) + (b)			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					(a) Primary lambda control set point bank 2	(a)				
					(b) maximum lambda deviation of lean mixture	(b)	0.05005	Unitless		
					Primary A/F sensor lambda bank 2	>=	(a) - (b)			
					(a) Primary lambda control set point					
					(b) maximum lambda deviation of rich mixture		0.05005	Unitless		
					for time	>=	0.2	sec		
					Integrated rich exhaust gas mass flow bank 2	>=	15	g		
					)					
					And					
					(					
					Secondary O2 sensor voltage bank 2	>	(a) + (b)			
					(a) minimum secondary O2 voltage					
					(b) Offset voltage of Secondary O2 sensor	=	0.030518	V		
					)					
					statemachine (sm=2) - Lean mixture in catalyst					
					a commanded lambda active	=	TRUE	-		
					primary A/F commanded lambda	=	1.08008	Unitless		
					for time	>=	3	sec		
					for time	>=	0.2	sec		
					if the following conditions are met, sm moves to sm = 4					
					((					
					Secondary O2 sensor voltage	<=	0.150146	V		
					for time	>=	0.1	sec		
					)					
					OR					
					(					
					Secondary O2 sensor voltage	<=	0.150146	V		
					Secondary O2 sensor voltage gradient over 0.05s	<=	0.09944	V/s		
					Secondary O2 sensor voltage gradient over 0.05s	>=	-0.09944	V/s		
					Integrated Oxygen mass flow bank 2	>	0.1	g		
					))					
					(					
					Primary A/F sensor lambda	<=	(a) + (b)			
					(a) Primary lambda control set point	(a)				
					(b) maximum lambda deviation of lean mixture	(b)	0.05005	Unitless		
					Primary A/F sensor lambda	>=	(a) - (b)			
					(a) Primary lambda control set point					
					(b) maximum lambda deviation of rich mixture		0.05005	Unitless		
					for time	>=	0.2	sec		
					Integrated lean exhaust gas mass flow bank 2	>=	15	g		
					)					
					statemachine (sm=3) - Lean mixture in catalyst	**=**	**TRUE**	-		
					a commanded lambda active bank 2	=	TRUE	-		
					primary A/F commanded lambda bank 2	=	1.08008	Unitless		
					for time	>=	3	sec		
					for time	>=	0.2	sec		
					if the following conditions are met, sm moves to sm = 4					
					(					
					Secondary O2 sensor voltage bank 2	<=	0.150146	V		
					for time	>=	0.1	sec		
					OR					
					(					
					Secondary O2 sensor voltage bank 2	<=	0.150146	V		
					Secondary O2 sensor voltage gradient over 0.05s	<=	0.09944	V/s		
					Secondary O2 sensor voltage gradient over 0.05s	>=	-0.09944	V/s		
					Integrated Oxygen mass flow bank 2	>	0.1	g		
					))					
					(					
					Primary A/F sensor lambda bank 2	<=	(a) + (b)			
					(a) Primary lambda control set point	(a)				
					(b) maximum lambda deviation of lean mixture	(b)	0.05005	Unitless		
					Primary A/F sensor lambda bank 2	>=	(a) - (b)			
					(a) Primary lambda control set point					
					(b) maximum lambda deviation of rich mixture		0.05005	Unitless		
					for time	>=	0.2	sec		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Integrated lean exhaust gas mass flow bank 2	>= 15 g		
					)			
					statemachine (sm=4) - Rich mixture in catalyst	= TRUE -		
					a commanded lambda active	= TRUE -		
					primary A/F commanded lambda	= 0.91992 Unitless		
					for time	>= 3 sec		
					for time	>= 0.2 sec		
					if the following conditions are met, sm moves to sm = 3			
					(			
					Secondary O2 sensor voltage bank 2	>= 0.85083 V		
					OR			
					(			
					Secondary O2 sensor voltage bank 2	>= 0.749512 V		
					Secondary O2 sensor voltage gradient over 0.05s	<= 0.09944 V/s		
					Secondary O2 sensor voltage gradient over 0.05s	>= -0.09944 V/s		
					Integrated Oxygen mass flow bank 2	> 0.15 g		
					))			
					(			
					Primary A/F sensor lambda bank 2	<= (a) + (b)		
					(a) Primary lambda control set point bank 2	(a)		
					(b) maximum lambda deviation of lean mixture	(b) 0.05005 Unitless		
					Primary A/F sensor lambda bank 2	>= (a) - (b)		
					(a) Primary lambda control set point			
					(b) maximum lambda deviation of rich mixture	0.05005 Unitless		
					for time	>= 0.2 sec		
					Integrated rich exhaust gas mass flow bank 2	>= 15 g		
					)			
					(			
					Primary A/F commanded lambda bank 2	<= (a) + (b)		
					(a) Primary A/F commanded lambda bank 2			
					(b) offset to the commanded lambda bank 2	0.1001		
					Secondary O2 sensor voltage bank 2	> (a) + (b)		
					(a) minimum secondary O2 voltage Bank 2			
					(b) Offset voltage of Secondary O2 sensor	= 0.030518 V		
					)			
					(			
					Secondary O2 sensor voltage bank 2	> (a) + (b)		
					(a) minimum secondary O2 voltage Bank 2			
					(b) Offset voltage of Secondary O2 sensor	= 0.030518 V		
					)			
					No pending or confirmed DTCs	= see sheet inhibit table		
					Basic enable conditions met	= see sheet enable tables -		
Downstream Exhaust Gas Sensor	P2270	Compare maximum secondary O2 sensor voltage bank 1 with a calibrated threshold during intrusive commanded rich lambda	Maximum Secondary O2 sensor voltage bank 1 during lambda shifting to rich	< 0.749512 V			once per driving cycle	2 Trips
					primary A/F commanded lambda	<= 1.09009 Unitless		
					primary A/F commanded lambda	>= 0.8501 Unitless		
					engine runs	= TRUE -		
					(			
					Deceleration Fuel Cut-Off (DFCO)	= FALSE -		
					for time	>= 3 sec		
					Vehicle speed	>= 4.350528278 mph		
					engine speed	<= 3520 rpm		
					engine speed	>= 1000 rpm		
					engine load @ full engine mode (see Look-Up-Table #P0420-4)	>= 12 to 19.992 %		
					(engine load of full engine mode / 2) @ half engine mode (see Look-Up-Table #P0420-4)	>= 12 to 19.992 %		
					for time	>= 3 sec		
					Ratio total charge to charge in cylinder	< 1.00024 Unitless		
					for time	>= 2 sec		
					Integrated air mass flow	> 60 g		
					measured ambient temperatuer	>= -39.8 deg C		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					measured ambient pressure	>= 50 kPa		
					measured engine coolant temperature	>= 52.06 deg C		
					no transmission gear change	= TRUE -		
					for time	>= 2 sec		
					)			
					(			
					integrated exhaust gas mass flow after the following operation points are in the monitoring window bank 1	> 60 g		
					(			
					Change of exhaust gas mass flow bank 1: (a) - (b)	<= 6.944444444 g/sec		
					Change of exhaust gas mass flow bank 1: (a) - (b)	>= -6.944444444 g/sec		
					(a) exhaust gas mass flow bank 1 (b) filtered exhaust gas mass flow bank 1 PT1 time constant	1.20029304 sec		
					Low window exhaust gas mass flow bank 1 (see Look-Up-Table #P0420-2)	<= 22.2222222222222 to 27.7777777777778 g/sec		
					Low window exhaust gas mass flow bank 1	>= 3.888888889 g/sec		
					Low window exhaust gas mass flow bank 1	>= (a) - (b)		
					(a) minimum exhaust gas mass flow bank 1	3.888888889 g/sec		
					(b) offset exhaust gas mass flow bank 1 at tip-out	0.833333333 g/sec		
					for time	>= 3 sec		
					High window exhaust gas mass flow bank 1 (see Look-Up-Table #P0420-1)	<= 22.2222222222222 to 27.7777777777778 g/sec		
					High window exhaust gas mass flow bank 1	>= 3.888888889 g/sec		
					)			
					(			
					Modeled catalyst temperature gradient bank 1: (a) - (b)	<= 40.0078 deg C		
					Modeled catalyst temperature gradient bank 1: (a) - (b)	>= -40.0078 deg C		
					(a) Modeled catalyst temperature bank 1 (b) filtered modeled catalyst temperature bank 1 PT1 time constant	= 4.9989321 sec		
					Low window modeled catalyst temperature bank 1	<= 650.006 deg C		
					Low window Modeled catalyst temperature bank 1	>= 520.022 deg C		
					High window modeled catalyst temperature bank 1	<= 780.014 deg C		
					High window Modeled catalyst temperature bank 1	>= 600.014 deg C		
					Modeled catalyst temperature bank 1 after the first engine start and driving	> 420.06 deg C		
					for time	>= 12 sec		
					))			
					((			
					Integrated purge mass flow after a longer purge stop	>= 1.51 g		
					HC concentration factor in chacoal canister	<= 40 factor		
					relative fuel portion of canister purge to injected fuel mass : (a) / (b) (a) fuel mass supplied by canister purge control (b) fuel mass supplied by injection	0.200012 Unitless		
					OR			
					open loop canister purge control	= TRUE -		
					OR			
					canister purge control mass flow into the manifold	<= 5.555555556 g/sec		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					((			
					integrated exhaust gas mass flow bank 1 since engine start (see Look-Up-Table #P0420-3)	> 1600 to 2850 g		
					integrated exhaust gas mass flow bank 1 after the following sensors's readiness	> 40 g		
					(			
					Secondary O2 sensor readiness bank 1			
					Primary A/F sensor readiness bank 1			
					)			
						>= 299.991 deg C		
					temperature deviation of Primary A/F sensor heater control bank 1: (a) - (b)	< 64.9922 deg C		
					(a) primary A/F sensor temperature set point for heater control	800.006 deg C		
					(b) measured primary A/F sensor temperature for heater control			
					)			
					statemachine = sm			
					statemachine (sm =0) : inactive	=		
					a commanded lambda active	= FALSE -		
					primary A/F commanded lambda	= 1 Unitless		
					if the following conditions are met, sm moves to sm = 2			
					Secondary O2 sensor voltage bank1	>= 0.749512 V		
					if the following conditions are met, sm moves to sm = 1			
					Secondary O2 sensor voltage bank1	< 0.749512 V		
					Secondary O2 sensor voltage bank1	>= 0.450439 V		
					statemachine (sm=1) - rich mixture in catalyst	= TRUE -		
					a commanded lambda active	= TRUE -		
					primary A/F commanded lambda bank1	= 0.91992 Unitless		
					for time	>= 3 sec		
					for time	>= 0.2 sec		
					Integrated Rich Gas Storage Capacity	>=		
					for time	>=		
					Primary A/F commanded lambda bank 1	<= 0.75		
					Integreted Exhaust mass flow	>= 200 g		
					for time	>=		
					if the following conditions are met, sm moves to sm = 2			
					((			
					Secondary O2 sensor voltage gradient over 0.05s	>= 0.069 V/s		
					Secondary O2 sensor voltage bank1	>= 0.749512 V		
					)			
					OR			
					Secondary O2 sensor voltage bank1	>= 0.749512 V		
					)			
					Integrated exhaust mass flow bank 1	>= 0.12 g		
					if the following conditions are met, sm moves to sm = 3			
					(			
					Secondary O2 sensor voltage bank 1	>= 0.85083 V		
					OR			
					(			
					Secondary O2 sensor voltage bank 1	>= 0.749512 V		
					Secondary O2 sensor voltage gradient over 0.05s	<= 0.09944 V/s		
					Secondary O2 sensor voltage gradient over 0.05s	>= -0.09944 V/s		
					Integrated Oxygen mass flow bank 1	> 0.15 g		
					))			
					(			
					Primary A/F sensor lambda bank 1	<= (a) + (b)		
					(a) Primary lambda control set point bank 1	(a)		
					(b) maximum lambda deviation of lean mixture	(b) 0.05005 Unitless		
					Primary A/F sensor lambda bank 1	>= (a) - (b)		
					(a) Primary lambda control set point			
					(b) maximum lambda deviation of rich mixture	0.05005 Unitless		
					for time	>= 0.2 sec		
					Integrated rich exhaust gas mass flow bank 1	>= 15 g		
					)			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					(			
					Secondary O2 sensor voltage bank 1	> (a) + (b)		
					(a) minimum secondary O2 voltage			
					(b) Offset voltage of Secondary O2 sensor	= 0.030518 V		
					)			
					statemachine (sm=2) -			
					Lean mixture in catalyst			
					a commanded lambda active	= TRUE -		
					primary A/F commanded lambda	= 1.08008 Unitless		
					for time	>= 3 sec		
					for time	>= 0.2 sec		
					if the following conditions are met,			
					sm moves to sm = 4			
					((			
					Secondary O2 sensor voltage bank 1	<= 0.150146 V		
					for time	>= 0.1 sec		
					)			
					OR			
					(			
					Secondary O2 sensor voltage	<= 0.150146 V		
					Secondary O2 sensor voltage gradient over 0.05s	<= 0.09944 V/s		
					Secondary O2 sensor voltage gradient over 0.05s	>= -0.09944 V/s		
					Integrated Oxygen mass flow bank 1	> 0.1 g		
					))			
					(			
					Primary A/F sensor lambda	<= (a) + (b)		
					(a) Primary lambda control set point	(a)		
					(b) maximum lambda deviation of lean mixture	(b) 0.05005 Unitless		
					Primary A/F sensor lambda	>= (a) - (b)		
					(a) Primary lambda control set point			
					(b) maximum lambda deviation of rich mixture	0.05005 Unitless		
					for time	>= 0.2 sec		
					Integrated lean exhaust gas mass flow bank 1	>= 15 g		
					)			
					statemachine (sm=3) -	**= TRUE** -		
					Lean mixture in catalyst			
					a commanded lambda active bank 1	= TRUE -		
					primary A/F commanded lambda bank 1	= 1.08008 Unitless		
					for time	>= 3 sec		
					for time	>= 0.2 sec		
					if the following conditions are met,			
					sm moves to sm = 4			
					(			
					Secondary O2 sensor voltage bank 1	<= 0.150146 V		
					for time	>= 0.1 sec		
					OR			
					(			
					Secondary O2 sensor voltage bank 1	<= 0.150146 V		
					Secondary O2 sensor voltage gradient over 0.05s	<= 0.09944 V/s		
					Secondary O2 sensor voltage gradient over 0.05s	>= -0.09944 V/s		
					Integrated Oxygen mass flow bank 1	> 0.1 g		
					))			
					(			
					Primary A/F sensor lambda bank 1	<= (a) + (b)		
					(a) Primary lambda control set point	(a)		
					(b) maximum lambda deviation of lean mixture	(b) 0.05005 Unitless		
					Primary A/F sensor lambda bank 1	>= (a) - (b)		
					(a) Primary lambda control set point			
					(b) maximum lambda deviation of rich mixture	0.05005 Unitless		
					for time	>= 0.2 sec		
					Integrated lean exhaust gas mass flow bank 1	>= 15 g		
					)			
					statemachine (sm=4) -	= TRUE -		
					Rich mixture in catalyst			
					a commanded lambda active	= TRUE -		
					primary A/F commanded lambda	= 0.91992 Unitless		
					for time	>= 3 sec		
					for time	>= 0.2 sec		
					Integrated Rich Gas Storage Capacity	>=		
					for time	>=		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Primary A/F commanded lambda bank 1	<= 0.75		
					Integreted Exhaust mass flow	>= 200 g		
					for time	>=		
					if the following conditions are met, sm moves to sm = 3			
					(			
					Secondary O2 sensor voltage bank 1	>= 0.85083 V		
					OR			
					(			
					Secondary O2 sensor voltage bank 1	>= 0.749512 V		
					Secondary O2 sensor voltage gradient over 0.05s	<= 0.09944 V/s		
					Secondary O2 sensor voltage gradient over 0.05s	>= -0.09944 V/s		
					Integrated Oxygen mass flow bank 1	> 0.15 g		
					))			
					(			
					Primary A/F sensor lambda bank 1	<= (a) + (b)		
					(a) Primary lambda control set point bank 1	(a)		
					(b) maximum lambda deviation of lean mixture	(b) 0.05005 Unitless		
					Primary A/F sensor lambda bank 1	>= (a) - (b)		
					(a) Primary lambda control set point			
					(b) maximum lambda deviation of rich mixture	0.05005 Unitless		
					for time	>= 0.2 sec		
					Integrated rich exhaust gas mass flow bank 1	>= 15 g		
					)			
					No pending or confirmed DTCs	= see sheet inhibit table -		
					Basic enable conditions met	= see sheet enable tables		
	P2271	Compare maximum secondary O2 sensor voltage bank 1 with a calibrated threshold during intrusive commanded rich lambda	Minimum secondary O2 sensor voltage bank 1 during lambda shifting to lean	> 0.150146 V	primary A/F commanded lambda	<= 1.09009 Unitless	once per driving cycle	2 Trips
					primary A/F commanded lambda	>= 0.8501 Unitless		
					engine runs	= TRUE -		
					(			
					Deceleration Fuel Cut-Off (DFCO)	= FALSE -		
					for time	>= 3 sec		
					Vehicle speed	>= 4.350528278 mph		
					engine speed	<= 3520 rpm		
					engine speed	>= 1000 rpm		
					engine load @ full engine mode (see Look-Up-Table #P0420-4)	>= 12 to 19.992 %		
					(engine load of full engine mode / 2) @ half engine mode (see Look-Up-Table #P0420-4)	>= 12 to 19.992 %		
					for time	>= 3 sec		
					Ratio total charge to charge in cylinder	< 1.00024 Unitless		
					for time	>= 2 sec		
					Integrated air mass flow	> 60 g		
					measured ambient temperatuer	>= -39.8 deg C		
					measured ambient pressure	>= 50 kPa		
					measured engine coolant temperature	>= 52.06 deg C		
					no transmission gear change	= TRUE -		
					for time	>= 2 sec		
					)			
					(			
					integrated exhaust gas mass flow after the following operation points are in the monitoring window bank 1	> 60 g		
					(			
					Change of exhaust gas mass flow bank 1: (a) - (b)	<= 6.944444444 g/sec		
					Change of exhaust gas mass flow bank 1: (a) - (b)	>= -6.944444444 g/sec		
					(a) exhaust gas mass flow bank 1			
					(b) filtered exhaust gas mass flow bank 1			
					PT1 time constant	1.20029304 sec		
					Low window exhaust gas mass flow bank 1 (see Look-Up-Table #P0420-2)	<= 22.222222222222 2 to 27.777777777777 8 g/sec		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Low window exhaust gas mass flow bank 1	>= 3.888888889 g/sec		
					Low window exhaust gas mass flow bank 1	>= (a) - (b)		
					(a) minimum exhaust gas mass flow bank 1	3.888888889 g/sec		
					(b) offset exhaust gas mass flow bank 1 at tip-out	0.833333333 g/sec		
					for time	>= 3 sec		
					High window exhaust gas mass flow bank 1 (see Look-Up-Table #P0420-1)	<= 22.2222222222222 to 27.7777777777778 g/sec		
					High window exhaust gas mass flow bank 1	>= 3.888888889 g/sec		
					)			
					(			
					Modeled catalyst temperature gradient bank 1: (a) - (b)	<= 40.0078 deg C		
					Modeled catalyst temperature gradient bank 1: (a) - (b) (a) Modeled catalyst temperature bank 1 (b) filtered modeled catalyst temperature bank 1	>= -40.0078 deg C		
					PT1 time constant	= 4.9989321 sec		
					Low window modeled catalyst temperature bank 1	<= 650.006 deg C		
					Low window Modeled catalyst temperature bank 1	>= 520.022 deg C		
					High window modeled catalyst temperature bank 1	<= 780.014 deg C		
					High window Modeled catalyst temperature bank 1	>= 600.014 deg C		
					Modeled catalyst temperature bank 1 after the first engine start and driving	> 420.06 deg C		
					for time	>= 12 sec		
					))			
					((			
					Integrated purge mass flow after a longer purge stop	>= 1.51 g		
					HC concentration factor in chacoal canister	<= 40 factor		
					relative fuel portion of canister purge to injected fuel mass : (a) / (b) (a) fuel mass supplied by canister purge control (b) fuel mass supplied by injection	0.200012 Unitless		
					OR			
					open loop canister purge control	= TRUE -		
					OR			
					canister purge control mass flow into the manifold	<= 5.555555556 g/sec		
					((			
					integrated exhaust gas mass flow bank 1 since engine start (see Look-Up-Table #P0420-3)	> 1600 to 2850 g		
					integrated exhaust gas mass flow bank 1 after the following sensors's readiness	> 40 g		
					(			
					Secondary O2 sensor readiness bank 1			
					Primary A/F sensor readiness bank 1			
					)			
						>= 299.991 deg C		
					temperature deviation of Primary A/F sensor heater control bank 1: (a) - (b)	< 64.9922 deg C		
					(a) primary A/F sensor temperature set point for heater control	800.006 deg C		
					(b) measured primary A/F sensor temperature for heater control			
					)			
					statemachine = sm			
					statemachine (sm =0) : inactive	=		
					a commanded lambda active	= FALSE -		
					primary A/F commanded lambda	= 1 Unitless		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					if the following conditions are met, sm moves to sm = 2			
					Secondary O2 sensor voltage bank1	>= 0.749512 V		
					if the following conditions are met, sm moves to sm = 1			
					Secondary O2 sensor voltage bank1	< 0.749512 V		
					Secondary O2 sensor voltage bank1	>= 0.450439 V		
					statemachine (sm=1) - rich mixture in catalyst	= TRUE -		
					a commanded lambda active	= TRUE -		
					primary A/F commanded lambda bank1	= 0.91992 Unitless		
					for time	>= 3 sec		
					for time	>= 0.2 sec		
					if the following conditions are met, sm moves to sm = 2			
					((			
					Secondary O2 sensor voltage gradient over 0.05s	>= 0.069 V/s		
					Secondary O2 sensor voltage bank1	>= 0.749512 V		
					)			
					OR			
					Secondary O2 sensor voltage bank1	>= 0.749512 V		
					)			
					Integrated exhaust mass flow bank 1	>= 0.12 g		
					if the following conditions are met, sm moves to sm = 3			
					(			
					Secondary O2 sensor voltage bank 1	>= 0.85083 V		
					OR			
					(			
					Secondary O2 sensor voltage bank 1	>= 0.749512 V		
					Secondary O2 sensor voltage gradient over 0.05s	<= 0.09944 V/s		
					Secondary O2 sensor voltage gradient over 0.05s	>= -0.09944 V/s		
					Integrated Oxygen mass flow bank 1	> 0.15 g		
					))			
					(			
					Primary A/F sensor lambda bank 1	<= (a) + (b)		
					(a) Primary lambda control set point bank 1	(a)		
					(b) maximum lambda deviation of lean mixture	(b) 0.05005 Unitless		
					Primary A/F sensor lambda bank 1	>= (a) - (b)		
					(a) Primary lambda control set point			
					(b) maximum lambda deviation of rich mixture	0.05005 Unitless		
					for time	>= 0.2 sec		
					Integrated rich exhaust gas mass flow bank 1	>= 15 g		
					)			
					(			
					Secondary O2 sensor voltage bank 1	> (a) + (b)		
					(a) minimum secondary O2 voltage			
					(b) Offset voltage of Secondary O2 sensor	= 0.030518 V		
					)			
					statemachine (sm=2) - Lean mixture in catalyst			
					a commanded lambda active	= TRUE -		
					primary A/F commanded lambda	= 1.08008 Unitless		
					for time	>= 3 sec		
					for time	>= 0.2 sec		
					(			
					Integrated Oxygen Storage Capacity	>= 1.2 g		
					for time	>= 1 sec		
					Primary A/F commanded lambda bank 1	>= 1.1499		
					Integreted Exhaust mass flow	>= 200 g		
					for time	>= 0.2 sec		
					)			
					if the following conditions are met, sm moves to sm = 4			
					((			
					Secondary O2 sensor voltage bank 1	<= 0.150146 V		
					for time	>= 0.1 sec		
					)			
					OR			
					(			
					Secondary O2 sensor voltage	<= 0.150146 V		
					Secondary O2 sensor voltage gradient over 0.05s	<= 0.09944 V/s		
					Secondary O2 sensor voltage gradient over 0.05s	>= -0.09944 V/s		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Integrated Oxygen mass flow bank 1	> 0.1 g		
					))			
					(			
					Primary A/F sensor lambda	<= (a) + (b)		
					(a) Primary lambda control set point	(a)		
					(b) maximum lambda deviation of lean mixture	(b) 0.05005 Unitless		
					Primary A/F sensor lambda	>= (a) - (b)		
					(a) Primary lambda control set point			
					(b) maximum lambda deviation of rich mixture	0.05005 Unitless		
					for time	>= 0.2 sec		
					Integrated lean exhaust gas mass flow bank 1	>= 15 g		
					)			
					statemachine (sm=3) - Lean mixture in catalyst	**= TRUE -**		
					a commanded lambda active bank 1	= TRUE -		
					primary A/F commanded lambda bank 1	= 1.08008 Unitless		
					for time	>= 3 sec		
					for time	>= 0.2 sec		
					Integrated Oxygen Storage Capacity	>= 1.2 g		
					for time	>= 1 sec		
					Primary A/F commanded lambda bank 1	>= 1.1499		
					Integreted Exhaust mass flow	>= 200 g		
					for time	>= 0.2 sec		
					)			
					if the following conditions are met, sm moves to sm = 4			
					(			
					Secondary O2 sensor voltage bank 1	<= 0.150146 V		
					for time	>= 0.1 sec		
					OR			
					(			
					Secondary O2 sensor voltage bank 1	<= 0.150146 V		
					Secondary O2 sensor voltage gradient over 0.05s	<= 0.09944 V/s		
					Secondary O2 sensor voltage gradient over 0.05s	>= -0.09944 V/s		
					Integrated Oxygen mass flow bank 1	> 0.1 g		
					))			
					(			
					Primary A/F sensor lambda bank 1	<= (a) + (b)		
					(a) Primary lambda control set point	(a)		
					(b) maximum lambda deviation of lean mixture	(b) 0.05005 Unitless		
					Primary A/F sensor lambda bank 1	>= (a) - (b)		
					(a) Primary lambda control set point			
					(b) maximum lambda deviation of rich mixture	0.05005 Unitless		
					for time	>= 0.2 sec		
					Integrated lean exhaust gas mass flow bank 1	>= 15 g		
					)			
					statemachine (sm=4) - Rich mixture in catalyst	= TRUE -		
					a commanded lambda active	= TRUE -		
					primary A/F commanded lambda	= 0.91992 Unitless		
					for time	>= 3 sec		
					for time	>= 0.2 sec		
					if the following conditions are met, sm moves to sm = 3			
					(			
					Secondary O2 sensor voltage bank 1	>= 0.85083 V		
					OR			
					(			
					Secondary O2 sensor voltage bank 1	>= 0.749512 V		
					Secondary O2 sensor voltage gradient over 0.05s	<= 0.09944 V/s		
					Secondary O2 sensor voltage gradient over 0.05s	>= -0.09944 V/s		
					Integrated Oxygen mass flow bank 1	> 0.15 g		
					))			
					(			
					Primary A/F sensor lambda bank 1	<= (a) + (b)		
					(a) Primary lambda control set point bank 1	(a)		
					(b) maximum lambda deviation of lean mixture	(b) 0.05005 Unitless		
					Primary A/F sensor lambda bank 1	>= (a) - (b)		
					(a) Primary lambda control set point			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					(b) maximum lambda deviation of rich mixture	0.05005 Unitless		
					for time	>= 0.2 sec		
					Integrated rich exhaust gas mass flow bank 1	>= 15 g		
					)			
					No pending or confirmed DTCs	= see sheet inhibit table -		
					Basic enable conditions met	= see sheet enable tables		
	P2270	Compare maximum secondary O2 sensor voltage bank 1 with a calibrated threshold during intrusive commanded rich lambda	Maximum Secondary O2 sensor voltage bank 1 during lambda shifting to rich	< 0.749512 V			once per driving cycle	2 Trips
					primary A/F commanded lambda	<= 1.09009 Unitless		
					primary A/F commanded lambda	>= 0.8501 Unitless		
					engine runs	= TRUE -		
					(			
					Deceleration Fuel Cut-Off (DFCO)	= FALSE -		
					for time	>= 3 sec		
					Vehicle speed	>= 4.350528278 mph		
					engine speed	<= 3520 rpm		
					engine speed	>= 1000 rpm		
					engine load @ full engine mode (see Look-Up-Table #P0420-4)	>= 12 to 19.992 %		
					(engine load of full engine mode / 2) @ half engine mode (see Look-Up-Table #P0420-4)	>= 12 to 19.992 %		
					for time	>= 3 sec		
					Ratio total charge to charge in cylinder	< 1.00024 Unitless		
					for time	>= 2 sec		
					Integrated air mass flow	> 60 g		
					measured ambient temperatuer	>= -39.8 deg C		
					measured ambient pressure	>= 50 kPa		
					measured engine coolant temperature	>= 52.06 deg C		
					no transmission gear change	= TRUE -		
					for time	>= 2 sec		
					)			
					(			
					integrated exhaust gas mass flow after the following operation points are in the monitoring window bank 1	> 60 g		
					(			
					Change of exhaust gas mass flow bank 1: (a) - (b)	<= 6.944444444 g/sec		
					Change of exhaust gas mass flow bank 1: (a) - (b)	>= -6.944444444 g/sec		
					(a) exhaust gas mass flow bank 1			
					(b) filtered exhaust gas mass flow bank 1			
					PT1 time constant	1.20029304 sec		
					Low window exhaust gas mass flow bank 1 (see Look-Up-Table #P0420-2)	<= 22.2222222222222 to 27.7777777777778 g/sec		
					Low window exhaust gas mass flow bank 1	>= 3.888888889 g/sec		
					Low window exhaust gas mass flow bank 1	>= (a) - (b)		
					(a) minimum exhaust gas mass flow bank 1	3.888888889 g/sec		
					(b) offset exhaust gas mass flow bank 1 at tip-out	0.833333333 g/sec		
					for time	>= 3 sec		
					High window exhaust gas mass flow bank 1 (see Look-Up-Table #P0420-1)	<= 22.2222222222222 to 27.7777777777778 g/sec		
					High window exhaust gas mass flow bank 1	>= 3.888888889 g/sec		
					)			
					(			
					Modeled catalyst temperature gradient bank 1: (a) - (b)	<= 40.0078 deg C		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 TEST GROUP: KGMXV04.2088 EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					Modeled catalyst temperature gradient bank 1: (a) - (b) (a) Modeled catalyst temperature bank 1 (b) filtered modeled catalyst temperature bank 1	>=	-40.0078	deg C		
					PT1 time constant	=	4.9989321	sec		
					Low window modeled catalyst temperature bank 1	<=	650.006	deg C		
					Low window Modeled catalyst temperature bank 1	>=	520.022	deg C		
					High window modeled catalyst temperature bank 1	<=	780.014	deg C		
					High window Modeled catalyst temperature bank 1	>=	600.014	deg C		
					Modeled catalyst temperature bank 1 after the first engine start and driving	>	420.06	deg C		
					for time	>=	12	sec		
					))					
					((					
					Integrated purge mass flow after a longer purge stop	>=	1.51	g		
					HC concentration factor in chacoal canister	<=	40	factor		
					relative fuel portion of canister purge to injected fuel mass : (a) / (b) (a) fuel mass supplied by canister purge control (b) fuel mass supplied by injection		0.200012	Unitless		
					OR					
					open loop canister purge control	=	TRUE	-		
					OR					
					canister purge control mass flow into the manifold	<=	5.555555556	g/sec		
					((					
					integrated exhaust gas mass flow bank 1 since engine start (see Look-Up-Table #P0420-3)	>	1600 to 2850	g		
					integrated exhaust gas mass flow bank 1 after the following sensors's readiness	>	40	g		
					(					
					Secondary O2 sensor readiness bank 1					
					Primary A/F sensor readiness bank 1					
					)					
						>=	299.991	deg C		
					temperature deviation of Primary A/F sensor heater control bank 1: (a) - (b)	<	64.9922	deg C		
					(a) primary A/F sensor temperature set point for heater control		800.006	deg C		
					(b) measured primary A/F sensor temperature for heater control					
					)					
					statemachine = sm					
					statemachine (sm =0) : inactive	=				
					a commanded lambda active	=	FALSE	-		
					primary A/F commanded lambda	=	1	Unitless		
					if the following conditions are met, sm moves to sm = 2					
					Secondary O2 sensor voltage bank1	>=	0.749512	V		
					if the following conditions are met, sm moves to sm = 1					
					Secondary O2 sensor voltage bank1	<	0.749512	V		
					Secondary O2 sensor voltage bank1	>=	0.450439	V		
					statemachine (sm=1) - rich mixture in catalyst	=	TRUE	-		
					a commanded lambda active	=	TRUE	-		
					primary A/F commanded lambda bank1	=	0.91992	Unitless		
					for time	>=	3	sec		
					for time	>=	0.2	sec		
					Integrated Rich Gas Storage Capacity	>=				
					for time	>=				
					Primary A/F commanded lambda bank 1	<=	0.75			
					Integreted Exhaust mass flow	>=	200	g		
					for time	>=				
					if the following conditions are met, sm moves to sm = 2					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 TEST GROUP: KGMXV04.2088 EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					((			
					Secondary O2 sensor voltage gradient over 0.05s	>= 0.069 V/s		
					Secondary O2 sensor voltage bank1	>= 0.749512 V		
					)			
					OR			
					Secondary O2 sensor voltage bank1	>= 0.749512 V		
					)			
					Integrated exhaust mass flow bank 1	>= 0.12 g		
					if the following conditions are met, sm moves to sm = 3			
					(			
					Secondary O2 sensor voltage bank 1	>= 0.85083 V		
					OR			
					(			
					Secondary O2 sensor voltage bank 1	>= 0.749512 V		
					Secondary O2 sensor voltage gradient over 0.05s	<= 0.09944 V/s		
					Secondary O2 sensor voltage gradient over 0.05s	>= -0.09944 V/s		
					Integrated Oxygen mass flow bank 1	> 0.15 g		
					))			
					(			
					Primary A/F sensor lambda bank 1	<= (a) + (b)		
					(a) Primary lambda control set point bank 1	(a)		
					(b) maximum lambda deviation of lean mixture	(b) 0.05005 Unitless		
					Primary A/F sensor lambda bank 1	>= (a) - (b)		
					(a) Primary lambda control set point			
					(b) maximum lambda deviation of rich mixture	0.05005 Unitless		
					for time	>= 0.2 sec		
					Integrated rich exhaust gas mass flow bank 1	>= 15 g		
					)			
					(			
					Secondary O2 sensor voltage bank 1	> (a) + (b)		
					(a) minimum secondary O2 voltage			
					(b) Offset voltage of Secondary O2 sensor	= 0.030518 V		
					)			
					statemachine (sm=2) - Lean mixture in catalyst			
					a commanded lambda active	= TRUE -		
					primary A/F commanded lambda	= 1.08008 Unitless		
					for time	>= 3 sec		
					for time	>= 0.2 sec		
					if the following conditions are met, sm moves to sm = 4			
					((			
					Secondary O2 sensor voltage bank 1	<= 0.150146 V		
					for time	>= 0.1 sec		
					)			
					OR			
					(			
					Secondary O2 sensor voltage	<= 0.150146 V		
					Secondary O2 sensor voltage gradient over 0.05s	<= 0.09944 V/s		
					Secondary O2 sensor voltage gradient over 0.05s	>= -0.09944 V/s		
					Integrated Oxygen mass flow bank 1	> 0.1 g		
					))			
					(			
					Primary A/F sensor lambda	<= (a) + (b)		
					(a) Primary lambda control set point	(a)		
					(b) maximum lambda deviation of lean mixture	(b) 0.05005 Unitless		
					Primary A/F sensor lambda	>= (a) - (b)		
					(a) Primary lambda control set point			
					(b) maximum lambda deviation of rich mixture	0.05005 Unitless		
					for time	>= 0.2 sec		
					Integrated lean exhaust gas mass flow bank 1	>= 15 g		
					)			
					statemachine (sm=3) - Lean mixture in catalyst	**= TRUE** -		
					a commanded lambda active bank 1	= TRUE -		
					primary A/F commanded lambda bank 1	= 1.08008 Unitless		
					for time	>= 3 sec		
					for time	>= 0.2 sec		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					if the following conditions are met, sm moves to sm = 4			
					(			
					Secondary O2 sensor voltage bank 1	<= 0.150146 V		
					for time	>= 0.1 sec		
					OR			
					(			
					Secondary O2 sensor voltage bank 1	<= 0.150146 V		
					Secondary O2 sensor voltage gradient over 0.05s	<= 0.09944 V/s		
					Secondary O2 sensor voltage gradient over 0.05s	>= -0.09944 V/s		
					Integrated Oxygen mass flow bank 1	> 0.1 g		
					))			
					(			
					Primary A/F sensor lambda bank 1	<= (a) + (b)		
					(a) Primary lambda control set point	(a)		
					(b) maximum lambda deviation of lean mixture	(b) 0.05005 Unitless		
					Primary A/F sensor lambda bank 1	>= (a) - (b)		
					(a) Primary lambda control set point			
					(b) maximum lambda deviation of rich mixture	0.05005 Unitless		
					for time	>= 0.2 sec		
					Integrated lean exhaust gas mass flow bank 1	>= 15 g		
					)			
					statemachine (sm=4) - Rich mixture in catalyst	= TRUE -		
					a commanded lambda active	= TRUE -		
					primary A/F commanded lambda	= 0.91992 Unitless		
					for time	>= 3 sec		
					for time	>= 0.2 sec		
					Integrated Rich Gas Storage Capacity	>=		
					for time	>=		
					Primary A/F commanded lambda bank 1	<= 0.75		
					Integreted Exhaust mass flow	>= 200 g		
					for time	>=		
					if the following conditions are met, sm moves to sm = 3			
					(			
					Secondary O2 sensor voltage bank 1	>= 0.85083 V		
					OR			
					(			
					Secondary O2 sensor voltage bank 1	>= 0.749512 V		
					Secondary O2 sensor voltage gradient over 0.05s	<= 0.09944 V/s		
					Secondary O2 sensor voltage gradient over 0.05s	>= -0.09944 V/s		
					Integrated Oxygen mass flow bank 1	> 0.15 g		
					))			
					(			
					Primary A/F sensor lambda bank 1	<= (a) + (b)		
					(a) Primary lambda control set point bank 1	(a)		
					(b) maximum lambda deviation of lean mixture	(b) 0.05005 Unitless		
					Primary A/F sensor lambda bank 1	>= (a) - (b)		
					(a) Primary lambda control set point			
					(b) maximum lambda deviation of rich mixture	0.05005 Unitless		
					for time	>= 0.2 sec		
					Integrated rich exhaust gas mass flow bank 1	>= 15 g		
					)			
					No pending or confirmed DTCs	= see sheet inhibit table -		
					Basic enable conditions met	= see sheet enable tables		
	P2273	Compare maximum secondary O2 sensor voltage bank 2 with a calibrated threshold during intrusive commanded rich lambda	Minimum secondary O2 sensor voltage bank 2 during lambda shifting to lean	> 0.150146 V	primary A/F commanded lambda	<= 1.09009 Unitless	once per driving cycle	2 Trips
					primary A/F commanded lambda	>= 0.8501 Unitless		
					engine runs	= TRUE -		
					(			
					Deceleration Fuel Cut-Off (DFCO)	= FALSE -		
					for time	>= 3 sec		
					Vehicle speed	>= 4.350528278 mph		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					engine speed	<= 3520 rpm		
					engine speed	>= 1000 rpm		
					engine load @ full engine mode (see Look-Up-Table #P0420-4)	>= 12 to 19.992 %		
					(engine load of full engine mode / 2) @ half engine mode (see Look-Up-Table #P0420-4)	>= 12 to 19.992 %		
					for time	>= 3 sec		
					Ratio total charge to charge in cylinder	< 1.00024 Unitless		
					for time	>= 2 sec		
					Integrated air mass flow	> 60 g		
					measured ambient temperatuer	>= -39.8 deg C		
					measured ambient pressure	>= 50 kPa		
					measured engine coolant temperature	>= 52.06 deg C		
					no transmission gear change	= TRUE -		
					for time	>= 2 sec		
					)			
					(			
					integrated exhaust gas mass flow after the following operation points are in the monitoring window bank 2	> 60 g		
					(			
					Change of exhaust gas mass flow bank 2: (a) - (b)	<= 6.944444444 g/sec		
					Change of exhaust gas mass flow bank 2: (a) - (b)	>= -6.944444444 g/sec		
					(a) exhaust gas mass flow bank 2			
					(b) filtered exhaust gas mass flow bank 2			
					PT1 time constant	1.20029304 sec		
					Low window exhaust gas mass flow bank 2 (see Look-Up-Table #P0420-2)	<= 22.2222222222222 to 27.7777777777778 g/sec		
					Low window exhaust gas mass flow bank 2	>= 3.888888889 g/sec		
					Low window exhaust gas mass flow bank 2	>= (a) - (b)		
					(a) minimum exhaust gas mass flow bank 2	3.888888889 g/sec		
					(b) offset exhaust gas mass flow bank 2 at tip-out	0.833333333 g/sec		
					for time	>= 3 sec		
					High window exhaust gas mass flow bank 2 (see Look-Up-Table #P0420-1)	<= 22.2222222222222 to 27.7777777777778 g/sec		
					High window exhaust gas mass flow bank 2	>= 3.888888889 g/sec		
					)			
					(			
					Modeled catalyst temperature gradient bank 2: (a) - (b)	<= 40.0078 deg C		
					Modeled catalyst temperature gradient bank 2: (a) - (b)	>= -40.0078 deg C		
					(a) Modeled catalyst temperature bank 2			
					(b) filtered modeled catalyst temperature bank 2	= 4.9989321 sec		
					PT1 time constant			
					Low window modeled catalyst temperature bank 2	<= 650.006 deg C		
					Low window Modeled catalyst temperature bank 2	>= 520.022 deg C		
					High window modeled catalyst temperature bank 2	<= 780.014 deg C		
					High window Modeled catalyst temperature bank 2	>= 600.014 deg C		
					Modeled catalyst temperature bank 2 after the first engine start and driving	> 420.06 deg C		
					for time	>= 12 sec		
					))			
					((			
					Integrated purge mass flow after a longer purge stop	>= 1.51 g		
					HC concentration factor in chacoal canister	<= 40 factor		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 TEST GROUP: KGMXV04.2088 EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					relative fuel portion of canister purge to injected fuel mass : (a) / (b) (a) fuel mass supplied by canister purge control (b) fuel mass supplied by injection		0.200012	Unitless		
					OR					
					open loop canister purge control	=	TRUE	-		
					OR					
					canister purge control mass flow into the manifold	<=	5.555555556	g/sec		
					((					
					integrated exhaust gas mass flow bank 2 since engine start (see Look-Up-Table #P0420-3)	>	1600 to 2850	g		
					integrated exhaust gas mass flow bank 2 after the following sensors's readiness	>	40	g		
					(					
					Secondary O2 sensor readiness bank 2					
					Primary A/F sensor readiness bank 2					
					)					
						>=	299.991	deg C		
					temperature deviation of Primary A/F sensor heater control bank 2: (a) - (b)	<	64.9922	deg C		
					(a) primary A/F sensor temperature set point for heater control		800.006	deg C		
					(b) measured primary A/F sensor temperature for heater control					
					)					
					statemachine = sm					
					statemachine (sm =0) : inactive	=				
					a commanded lambda active	=	FALSE	-		
					primary A/F commanded lambda	=	1	Unitless		
					if the following conditions are met, sm moves to sm = 2					
					Secondary O2 sensor voltage bank1	>=	0.749512	V		
					if the following conditions are met, sm moves to sm = 1					
					Secondary O2 sensor voltage bank1	<	0.749512	V		
					Secondary O2 sensor voltage bank1	>=	0.450439	V		
					statemachine (sm=1) - rich mixture in catalyst	=	TRUE	-		
					a commanded lambda active	=	TRUE	-		
					primary A/F commanded lambda bank1	=	0.91992	Unitless		
					for time	>=	3	sec		
					for time	>=	0.2	sec		
					if the following conditions are met, sm moves to sm = 2					
					((					
					Secondary O2 sensor voltage gradient over 0.05s	>=	0.069	V/s		
					Secondary O2 sensor voltage bank1	>=	0.749512	V		
					)					
					OR					
					Secondary O2 sensor voltage bank1	>=	0.749512	V		
					)					
					Integrated exhaust mass flow bank 2	>=	0.12	g		
					if the following conditions are met, sm moves to sm = 3					
					(					
					Secondary O2 sensor voltage bank 2	>=	0.85083	V		
					OR					
					(					
					Secondary O2 sensor voltage bank 2	>=	0.749512	V		
					Secondary O2 sensor voltage gradient over 0.05s	<=	0.09944	V/s		
					Secondary O2 sensor voltage gradient over 0.05s	>=	-0.09944	V/s		
					Integrated Oxygen mass flow bank 2	>	0.15	g		
					))					
					(					
					Primary A/F sensor lambda bank 2	<=	(a) + (b)			
					(a) Primary lambda control set point bank 2	(a)				
					(b) maximum lambda deviation of lean mixture	(b)	0.05005	Unitless		
					Primary A/F sensor lambda bank 2	>=	(a) - (b)			
					(a) Primary lambda control set point					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					(b) maximum lambda deviation of rich mixture		0.05005	Unitless		
					for time	>=	0.2	sec		
					Integrated rich exhaust gas mass flow bank 2	>=	15	g		
					)					
					(					
					Secondary O2 sensor voltage bank 2	>	(a) + (b)			
					(a) minimum secondary O2 voltage					
					(b) Offset voltage of Secondary O2 sensor	=	0.030518	V		
					)					
					statemachine (sm=2) -					
					Lean mixture in catalyst					
					a commanded lambda active	=	TRUE	-		
					primary A/F commanded lambda	=	1.08008	Unitless		
					for time	>=	3	sec		
					for time	>=	0.2	sec		
					(					
					Integrated Oxygen Storage Capacity	>=	1.2	g		
					for time	>=	1	sec		
					Primary A/F commanded lambda bank 2	>=	1.1499			
					Integreted Exhaust mass flow	>=	200	g		
					for time	>=	0.2	sec		
					)					
					if the following conditions are met,					
					sm moves to sm = 4					
					((					
					Secondary O2 sensor voltage bank 2	<=	0.150146	V		
					for time	>=	0.1	sec		
					)					
					OR					
					(					
					Secondary O2 sensor voltage	<=	0.150146	V		
					Secondary O2 sensor voltage gradient over 0.05s	<=	0.09944	V/s		
					Secondary O2 sensor voltage gradient over 0.05s	>=	-0.09944	V/s		
					Integrated Oxygen mass flow bank 2	>	0.1	g		
					))					
					(					
					Primary A/F sensor lambda	<=	(a) + (b)			
					(a) Primary lambda control set point	(a)				
					(b) maximum lambda deviation of lean mixture	(b)	0.05005	Unitless		
					Primary A/F sensor lambda	>=	(a) - (b)			
					(a) Primary lambda control set point					
					(b) maximum lambda deviation of rich mixture		0.05005	Unitless		
					for time	>=	0.2	sec		
					Integrated lean exhaust gas mass flow bank 2	>=	15	g		
					)					
					statemachine (sm=3) -	**=**	**TRUE**	-		
					Lean mixture in catalyst					
					a commanded lambda active bank 2	=	TRUE	-		
					primary A/F commanded lambda bank 2	=	1.08008	Unitless		
					for time	>=	3	sec		
					for time	>=	0.2	sec		
					(					
					Integrated Oxygen Storage Capacity	>=	1.2	g		
					for time	>=	1	sec		
					Primary A/F commanded lambda bank 2	>=	1.1499			
					Integreted Exhaust mass flow	>=	200	g		
					for time	>=	0.2	sec		
					)					
					if the following conditions are met,					
					sm moves to sm = 4					
					(					
					Secondary O2 sensor voltage bank 2	<=	0.150146	V		
					for time	>=	0.1	sec		
					OR					
					(					
					Secondary O2 sensor voltage bank 2	<=	0.150146	V		
					Secondary O2 sensor voltage gradient over 0.05s	<=	0.09944	V/s		
					Secondary O2 sensor voltage gradient over 0.05s	>=	-0.09944	V/s		
					Integrated Oxygen mass flow bank 2	>	0.1	g		
					))					
					(					
					Primary A/F sensor lambda bank 2	<=	(a) + (b)			
					(a) Primary lambda control set point	(a)				

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					(b) maximum lambda deviation of lean mixture Primary A/F sensor lambda bank 2 (a) Primary lambda control set point (b) maximum lambda deviation of rich mixture for time Integrated lean exhaust gas mass flow bank 2) **statemachine (sm=4) - Rich mixture in catalyst** a commanded lambda active primary A/F commanded lambda for time for time **if the following conditions are met, sm moves to sm = 3** (Secondary O2 sensor voltage bank 2 OR (Secondary O2 sensor voltage bank 2 Secondary O2 sensor voltage gradient over 0.05s Secondary O2 sensor voltage gradient over 0.05s Integrated Oxygen mass flow bank 2)) (Primary A/F sensor lambda bank 2 (a) Primary lambda control set point bank 2 (b) maximum lambda deviation of lean mixture Primary A/F sensor lambda bank 2 (a) Primary lambda control set point (b) maximum lambda deviation of rich mixture for time Integrated rich exhaust gas mass flow bank 2) No pending or confirmed DTCs Basic enable conditions met	(b) 0.05005 Unitless >= (a) - (b) 0.05005 Unitless >= 0.2 sec >= 15 g = TRUE - = TRUE - = 0.91992 Unitless >= 3 sec >= 0.2 sec >= 0.85083 V >= 0.749512 V <= 0.09944 V/s >= -0.09944 V/s > 0.15 g <= (a) + (b) (a) (b) 0.05005 Unitless >= (a) - (b) 0.05005 Unitless >= 0.2 sec >= 15 g = see sheet inhibit table - = see sheet enable tables -		
O2 Sensor Circuit Bank 1 Sensor 2	P0140	Path 1: Signal range check - open circuit	Mean value of difference between loaded and unloaded sensor voltage for 3 load pulses for time	>= 2.797852 V >= 5 sec	Fault suspicion is active for time, which is the following: (Output voltage of O2 sensor Output voltage of O2 sensor) Enable conditions for operating readiness of O2 sensor 2 bank 1(refer above common conditions)	>= 3 sec >= 0.322266 V <= 0.551758 V = TRUE -	0 sec continuous	2 Trips
		Path 2: Internal resistance plausibility - interrupted ground wire	Internal resistance of O2 sensor	> 40000 Ohm	Exhaust gas temperature at O2 sensor Enable conditions for operating readiness of O2 sensor 2 bank 1 (refer above common conditions) Basic enable conditions met No pending or confirmed DTCs	> 599.991 deg C = TRUE - = see sheet enable tables - = see sheet inhibit tables -		
O2 Sensor Circuit Bank 2 Sensor 2	P0160	Path 1: Signal range check - open circuit	Mean value of difference between loaded and unloaded sensor voltage for 3 load pulses for time	>= 2.797852 V >= 5 sec	Fault suspicion is active for time, which is the following: (Output voltage of O2 sensor Output voltage of O2 sensor) Enable conditions for operating readiness of O2 sensor 2 bank 2 (refer above common conditions)	>= 3 sec >= 0.322266 V <= 0.551758 V = TRUE -	0 sec continuous	2 Trips

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
		Path 2: Internal resistance plausibility - interrupted ground wire	Internal resistance of O2 sensor	>	40000	Ohm	Exhaust gas temperature at O2 sensor	>	599.991	deg C		
							Enable conditions for operating readiness of O2 sensor 2 bank 2 (refer above common conditions)	=	TRUE	-		
							Basic enable conditions met	=	see sheet enable tables	-		
							No pending or confirmed DTCs	=	see sheet inhibit tables	-		
O2 Sensor Circuit Bank 1 Sensor 2	P0138	Signal range check - short circuit to battery	Set point lambda	>	0.995	-	**Common Conditions:** Enable conditions for operating readiness of O2 sensor 2 bank 1	=	TRUE	-	1 sec continuous	2 Trips
			Output voltage of O2 sensor	>	1.201172	V	(					
							Battery voltage	>	10.9	V		
							Enable conditions for the status of signal fault in the previous driving with the availablity of internal resistance value	=	TRUE	-		
							(					
							Internal resistance is valid	=	TRUE	-		
							(					
							Internal resistance is valid after X measurements	=	TRUE	-		
							X = counter for validating internal resistance	>	10	counts		
							)					
							O2 Sensor open circuit fault detected	=	FALSE	-		
							)					
							(					
							Expected downstream O2 sensor readiness	=	TRUE	-		
							(					
							Protective heating is finished	=	TRUE	-		
							(					
							Status of downstream O2 sensor heating for hot engine conditions	=	TRUE	-		
							(					
							Engine coolant temperature	>	-9.8	deg C		
							Conditions for enabling sensor heating for O2 sensor	=	TRUE	-		
							(					
							ECU is not in POST DRIVE state	=	TRUE	-		
							Battery Voltage	<=	25.59961	V		
							Engine start is completed	=	TRUE	-		
							)					
							)					
							Dew point end is reached	=	TRUE	-		
							(					
							(					
							a >= (b) * (((c) * (d)) + 1) Where: (a) Integrated heat release since engine start					
							(b) Downstream O2 sensor heat threshold for release of heating (kJ) (see Look-Up-Table #P0138-1)	=	0 to 120	kJ		
							(c) adjustment factor (see Look-Up-Table #P0138-2)	=	0 to 0.5	-		
							(d) Number of drive cycles without reaching dew point end of downstream sensor (limited to max of 4)					
							)					
							Dew point end is reached at upstream of catalyst					
							(					
							a >= (b) * (((c) * (d)) + 1) Where: (a) Integrated heat release since engine start					
							(b) Upstream O2 sensor heat threshold for release of heating (kJ) (see Look-Up-Table #P0138-3)	=	0 to 96	kJ		
							(c) adjustment factor (see Look-Up-Table #P0138-4)	=	0 to 0.5	-		
							(d) Number of drive cycles without reaching dew point end of downstream sensor (limited to max of 3)					
							)					
							)					
							)					
							for time	>=	A+B	sec		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					where	=	15	sec		
					A: Operating readiness, HEGO sensor 2 bank 1 / Debouncing time protective heating finished					
					B: Operating readiness, HEGO sensor 2 bank 1 / Debouncing time for expected operating readiness	=	30	sec		
					)					
					OR					
					Exhaust gas sensor ready for operation	=	TRUE	-		
					(					
					Status of heating enable conditions for the sensor operating readiness	=	TRUE	-		
					(					
					Protective heating is finished	=	TRUE	-		
					for time	>=	15	sec		
					OR					
					Internal resistance OK for operating readiness	=	TRUE	-		
					(					
					Unfiltered internal resistance of HEGO sensor	<=	2000	Ohm		
					Protective heating is finished	=	TRUE	-		
					Counter for valid internal resistance measurements	>=	3	counts		
					)					
					)					
					Status of sensor signal enable conditions for the sensor operating readiness	=	TRUE	-		
					(					
					Internal resistance OK for operating readiness	=	TRUE	-		
					OR					
					(					
					(					
					Output voltage of HEGO Sensor	>=	0.551758	V		
					and					
					Output voltage of HEGO Sensor	<=	1.201172	V		
					)					
					OR					
					Output voltage of HEGO Sensor	<=	0.322266	V		
					)					
					OR					
					Sensor voltage stuck in countervoltage band	=	TRUE	-		
					(					
					(					
					(					
					Output voltage of HEGO Sensor	<	0.551758	V		
					Output voltage of HEGO Sensor	>	0.322266	V		
					)					
					(					
					Sensor open circuit fault existed in previous trip	=	TRUE	-		
					OR					
					Sensor open circuit fault currently not detected	=	TRUE	-		
					)					
					Electrical diagnostics enabled	=	TRUE	-		
					)					
					for time	>=	20	sec		
					)					
					)					
					for time	>=	0.2	sec		
					)					
					)					
					)					
					Basic enable conditions met	=	see sheet enable tables	-		
					No pending or confirmed DTCs	=	see sheet inhibit tables	-		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
	P0158	Signal range check - short circuit to battery	Set point lambda	> 0.995 -	**Common Conditions:** Enable conditions for operating readiness of O2 sensor 2 bank 2	= TRUE -	1 sec continuous	2 Trips
			Output voltage of O2 sensor	> 1.201172 V	(			
					Battery voltage	> 10.9 V		
					Enable conditions for the status of signal fault in the previous driving with the availablilty of internal resistance value	= TRUE -		
					(			
					Internal resistance is valid	= TRUE -		
					(			
					Internal resistance is valid after X measurements	= TRUE -		
					X = counter for validating internal resistance	> 10 counts		
					)			
					O2 Sensor open circuit fault detected	= FALSE -		
					)			
					(			
					Expected downstream O2 sensor readiness	= TRUE -		
					(			
					Protective heating is finished	= TRUE -		
					(			
					Status of downstream O2 sensor heating for hot engine conditions	= TRUE -		
					(			
					Engine coolant temperature	> -9.8 deg C		
					Conditions for enabling sensor heating for O2 sensor	= TRUE -		
					(			
					ECU is not in POST DRIVE state	= TRUE -		
					Battery Voltage	<= 25.59961 V		
					Engine start is completed	= TRUE -		
					)			
					)			
					Dew point end is reached	= TRUE -		
					(			
					(			
					a >= (b) * (((c) * (d)) + 1)			
					Where:			
					(a) Integrated heat release since engine start			
					(b) Downstream O2 sensor heat threshold for release of heating (kJ) (see Look-Up-Table #P0158-1)	= 0 to 120 kJ		
					(c) adjustment factor (see Look-Up-Table #P0158-2)	= 0 to 0.5 -		
					(d) Number of drive cycles without reaching dew point end of downstream sensor (limited to max of 4)			
					)			
					Dew point end is reached at upstream of catalyst			
					(			
					a >= (b) * (((c) * (d)) + 1)			
					Where:			
					(a) Integrated heat release since engine start			
					(b) Upstream O2 sensor heat threshold for release of heating (kJ) (see Look-Up-Table #P0158-3)	= 0 to 96 kJ		
					(c) adjustment factor (see Look-Up-Table #P0158-4)	= 0 to 0.5 -		
					(d) Number of drive cycles without reaching dew point end of downstream sensor (limited to max of 3)			
					)			
					)			
					)			
					for time	>= A+B sec		
					where	= 15 sec		
					A: Operating readiness, HEGO sensor 2 bank 1 / Debouncing time protective heating finished			
					B: Operating readiness, HEGO sensor 2 bank 1 / Debouncing time for expected operating readiness	= 30 sec		
					)			
					OR			
					Exhaust gas sensor ready for operation	= TRUE -		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					(			
					Status of heating enable conditions for the sensor operating readiness	= TRUE -		
					(			
					Protective heating is finished	= TRUE -		
					for time	>= 15 sec		
					OR			
					Internal resistance OK for operating readiness	= TRUE -		
					(			
					Unfiltered internal resistance of HEGO sensor	<= 2000 Ohm		
					Protective heating is finished	= TRUE -		
					Counter for valid internal resistance measurements	>= 3 counts		
					)			
					)			
					Status of sensor signal enable conditions for the sensor operating readiness	= TRUE -		
					(			
					Internal resistance OK for operating readiness	= TRUE -		
					OR			
					(			
					(			
					Output voltage of HEGO Sensor	>= 0.551758 V		
					Output voltage of HEGO Sensor	<= 1.201172 V		
					)			
					OR			
					Output voltage of HEGO Sensor	<= 0.322266 V		
					)			
					OR			
					Sensor voltage stuck in countervoltage band	= TRUE -		
					(			
					(			
					(			
					Output voltage of HEGO Sensor	< 0.551758 V		
					Output voltage of HEGO Sensor	> 0.322266 V		
					)			
					(			
					Sensor open circuit fault existed in previous trip	= TRUE -		
					OR			
					Sensor open circuit fault currently not detected	= TRUE -		
					)			
					Electrical diagnostics enabled	= TRUE -		
					)			
					for time	>= 20 sec		
					)			
					)			
					for time	>= 0.2 sec		
					)			
					)			
					)			
					Basic enable conditions met	= see sheet enable tables -		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
O2 Sensor Circuit Bank 1 Sensor 2	P0137	Signal range check - short circuit to ground	Mean value of difference between loaded and unloaded sensor voltage for 3 load pulses for time	< 0.014648 V >= 5 sec	Fault suspicion is active when the following conditions are satisfied for time	>= 3 sec	0 sec continuous	2 Trips
					(			
					Output voltage of O2 sensor	< 0.058594 V		
					Catalyst purge active	= FALSE -		
					Deceleration Fuel Cut-Off	= FALSE -		
					Battery voltage	> 10.9 V		
					)			
					Basic enable conditions met	= see sheet enable tables -		
					No pending or confirmed DTCs	= see sheet inhibit tables -		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required			MIL Illum.
O2 Sensor Circuit Bank 2 Sensor 2	P0157	Signal range check - short circuit to ground	Mean value of difference between loaded and unloaded sensor voltage for 3 load pulses	<	0.014648	V	Fault suspicion is active when the following conditions are satisfied for time	>=	3	sec	0	sec	continuous	2 Trips
			for time	>=	5	sec	(							
							Output voltage of O2 sensor	<	0.058594	V				
							Catalyst purge active	=	FALSE	-				
							Deceleration Fuel Cut-Off	=	FALSE	-				
							Battery voltage	>	10.9	V				
							)							
							Basic enable conditions met	=	see sheet enable tables	-				
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
O2 Sensor Circuit Bank 1 Sensor 2	P2232	Heater Coupling- Short Circuit between the sensor signal wire and the sensor heater	Difference of the present and the previous output voltage of O2 sensor	>	2.001953	V	Time frame for checking heater coupling is active	<	0.04	sec	4	events	continuous	2 Trips
							(							
			Counter for Heater turn off events	>=	6	events	Dew point end is reached for time	>=	10	sec				
							Sensor heating is turned on	=	FALSE	-				
							)							
							Enable conditions for operating readiness of O2 sensor 2 bank 1 (refer above common conditions)	=	TRUE	-				
							Basic enable conditions met	=	see sheet enable tables	-				
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
	P2235	Heater Coupling- Short Circuit between the sensor signal wire and the sensor heater	Difference of the present and the previous output voltage of O2 sensor	>	2.001953	V	Time frame for checking heater coupling is active	<	0.04	sec	4	events	continuous	2 Trips
							(							
			Counter for Heater turn off events	>=	6	events	Dew point end is reached for time	>=	10	sec				
							Sensor heating is turned on	=	FALSE	-				
							)							
							Enable conditions for operating readiness of O2 sensor 2 bank 2 (refer above common conditions)	=	TRUE	-				
							Basic enable conditions met	=	see sheet enable tables	-				
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
Downstream Exhaust Gas Sensor	P0141	Compares the measured Secondary HO2S sensor internal resistance with a calibrated threshold*	Internal resistance of Secondary HO2S sensor bank 1 (see Look-Up-Table #P0141-1)	>	500 to 16200	Ohm					5	sec		2 Trips
							(							
							Filtered normalized heating power for Secondary HO2S sensor bank 1	>	0.6	Unitless				
							engine stop time copied at the time of first engine start in the driving cycle	>	120	sec				
		calibrated threshold* = the criteria required to be met by the component vendor for heater circuit performance at high mileage					state of variable TiEngOff_tiFirstStrt (formerly tengszlst)	=	TRUE	-				
							intake air temperature	>	-30	deg C				
							state of start temperatures in dew point end calculated for Secondary HO2S sensor bank 1	=	TRUE	-				
							Battery Voltage	<=	25.59961	V				
							Battery Voltage	>=	10.9	V				
							state for end of start	=	TRUE	-				
							engine speed	>	40	rpm				
							engine speed for normal, non-repeated, key starts (see Look-Up-Table #P0141-2)	>	600 to 700	rpm				
							engine speed fo rrepeated key starts and Stop-Start (see Look-Up-Table #P0141-3)	.>	400 to 700	rpm				
							detection of end of start by engine speed threshold and injection counts (see Look-Up-Table #P0141-4)		4 to 32	counts				
							)							
							(							
							Filtered-modeled exhaust gas temperature for Secondary HO2S sensor bank 1 heating	<=	700.022	deg C				
							Filtered-modeled exhaust gas temperature for Secondary HO2S sensor bank 1 heating	>=	340.022	deg C				
							Bit heater power stage diagnostics enabled	=	TRUE	-				

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					enable condition for heater performance diagnosis after stop-phase	= TRUE -		
					state for end of start	= FALSE -		
					for time	>= 0 sec		
					state for end of start	= TRUE -		
					for time	>= 0.5 sec		
					internal resistance measurement valid if the following conditions are met:	= TRUE -		
						> 10		
					((			
					Secondary HO2S sensor voltage bank 1	<= 0.410156 V		
					Secondary HO2S sensor voltage bank 1	>= 0 V		
					OR			
					Secondary HO2S sensor voltage bank 1	> 0.489502 V		
					)			
					absolute sensor voltage difference: ABS((a) - (b))	<= 0.025 V		
					(a) Secondary HO2S sensor voltage bank 1			
					(b) Prior Secondary HO2S sensor voltage bank 1			
					Secondary HO2S sensor bank 1 heater control on	= TRUE -		
					for time	>= 30 sec		
					Internal resistance measurement active of Secondary HO2S sensor bank 1	= TRUE -		
					with			
					Absolute Secondary HO2S sensor bank 1 voltage difference: ABS((a) - (b))	<= 0.200195 V		
					(a) Secondary HO2S sensor bank 1 voltage after freeze for measurement of the internal resistance			
					(b) Secondary HO2S sensor bank 1 voltage without load for the measurement of the internal resistance			
					Absolute Secondary HO2S sensor bank 1 voltage difference: ABS((a) - (b))	>= 0.0 V		
					(a) Secondary HO2S sensor bank 1 voltage with load for the measurement of the internal resistance			
					(b) Secondary HO2S sensor bank 1 voltage without load for the measurement of the internal resistance			
					no electrical sensor diagnostic faults of implausible high internal resistance	= TRUE -		
					no DFCO	= TRUE -		
					Minimum heater performance diagnostic	>= 120 sec		
					Filtered-modeled exhaust gas temperature for Secondary HO2S sensor bank 1 heating	>= 320.006 deg C		
					Internal resistance of Secondary HO2S	< 10000 Ohm		
					No pending or confirmed DTCs	= see sheet inhibit table		
					Basic enable conditions met	= see sheet enable tables -		
Downstream Exhaust Gas Sensor	P0161	Compares the measured Secondary HO2S sensor internal resistance with a calibrated threshold*	Internal resistance of Secondary HO2S sensor bank 2 (see Look-Up-Table #P0161-1)	> 500 to 16200 Ohm			5 sec	2 Trips
					(			
					Filtered normalized heating power for Secondary HO2S sensor bank 2	> 0.6 Unitless		
					engine stop time copied at the time of first engine start in the driving cycle	> 120 sec		
		calibrated threshold* = the criteria required to be met by the component vendor for heater circuit performance at high mileage			state of variable TiEngOff_tiFirstStrt (formerly tengszlst)	= TRUE -		
					state of start temperatures in dew point end calculated for Secondary HO2S sensor bank 2			
					Battery Voltage	<= 25.59961 V		
					Battery Voltage	>= 10.9 V		
					state for end of start	= TRUE -		
					engine speed	> 40 rpm		
					engine speed for normal, non-repeated, key starts (see Look-Up-Table #P0141-2)	> 600 to 700 rpm		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					engine speed fo rrepeated key starts and Stop-Start (see Look-Up-Table #P0141-3)	.>	400 to 700	rpm		
					detection of end of start by engine speed threshold and injection counts (see Look-Up-Table #P0141-4)		4 to 32	counts		
					)					
					(					
					Filtered-modeled exhaust gas temperature for Secondary HO2S sensor bank 2 heating	<=	700.022	deg C		
					Filtered-modeled exhaust gas temperature for Secondary HO2S sensor bank 2 heating	>=	340.022	deg C		
					enable condition for heater performance diagnosis after stop-phase	=	TRUE	-		
					state for end of start	=	FALSE	-		
					for time	>=	0	sec		
					state for end of start	=	TRUE	-		
					for time	>=	0.5	sec		
					internal resistance measurement valid if the following conditions are met:	=	TRUE	-		
						>	10			
					((					
					Secondary HO2S sensor voltage bank 2	<=	0.410156	V		
					Secondary HO2S sensor voltage bank 2	>=	0	V		
					OR					
					Secondary HO2S sensor voltage bank 2	>	0.489502	V		
					)					
					absolute sensor voltage difference: ABS((a) - (b))	<=	0.025	V		
					(a) Secondary HO2S sensor voltage bank 2					
					(b) Prior Secondary HO2S sensor voltage bank 2					
					Secondary HO2S sensor bank 2 heater control on	=	TRUE	-		
					for time	>=	30	sec		
					Internal resistance measurement active of Secondary HO2S sensor bank 2	=	TRUE	-		
					with					
					Absolute Secondary HO2S sensor bank 2 voltage difference: ABS((a) - (b))	<=	0.200195	V		
					(a) Secondary HO2S sensor bank 2 voltage after freeze for measurement of the internal resistance					
					(b) Secondary HO2S sensor bank 2 voltage without load for the measurement of the internal resistance					
					Absolute Secondary HO2S sensor bank 2 voltage difference: ABS((a) - (b))	>=	0.0	V		
					(a) Secondary HO2S sensor bank 2 voltage with load for the measurement of the internal resistance					
					(b) Secondary HO2S sensor bank 2 voltage without load for the measurement of the internal resistance					
					no electrical sensor diagnostic faults of implausible high internal resistance	=	TRUE	-		
					no DFCO	=	TRUE	-		
					Minimum heater performance diagnostic	>=	120	sec		
					Filtered-modeled exhaust gas temperature for Secondary HO2S sensor bank 2 heating	>=	320.006	deg C		
					Internal resistance of Secondary HO2S	<	10000	Ohm		
					No pending or confirmed DTCs	=	see sheet inhibit table			
					Basic enable conditions met	=	see sheet enable tables	-		
HO2S Heater Control Circuit Bank 1 Sensor 2	P0036	Diagnoses the HO2S Heater Control Bank 1 Sensor 2 low side driver circuit for open circuit faults	Voltage low during driver off state (indicates open circuit)	= Open Circuit:≥ 200 K Ω impedance between ECU pin and load -	General enabling condition for powerstage diagnosis	=	TRUE	-	0.5 sec continuous	2 Trips
					(					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value		Secondary Parameters	Enable Conditions			Time Required			MIL Illum.
						Battery voltage	<	25.5	V				
						Battery voltage	>	10.9	V				
						Engine speed	>=	80	rpm				
						)							
						Conditions for enabling sensor heating for O2 sensor	=	TRUE	-				
						(							
						ECU is not in POST DRIVE state	=	TRUE	-				
						and							
						Battery Voltage	<=	25.59961	V				
						and							
						Engine start is completed	=	TRUE	-				
						)							
						and							
						(							
						(							
						Dew point end is reached	=	TRUE	-				
						(							
						(							
						Integrated heat release since engine start	>=	(b) * (((c) * (d)) + 1)	-				
						(b) Downstream O2 sensor heat threshold for release of heating (kJ) (see Look-Up-Table #P0138-1)		0 to 120	kJ				
						(c) adjustment factor (see Look-Up-Table #P0138-2)		0 to 0.5	-				
						(d) Number of drive cycles without reaching dew point end of downstream sensor (limited to max of 4)							
						)							
						and							
						Dew point end is reached at upstream of catalyst							
						(							
						Integrated heat release since engine start	>=	(b) * (((c) * (d)) + 1)					
						(b) Upstream O2 sensor heat threshold for release of heating (kJ) (see Look-Up-Table #P0138-3)		0 to 96	kJ				
						(c) adjustment factor (see Look-Up-Table #P0138-4)		0 to 0.5	-				
						(d) Number of drive cycles without reaching dew point end of downstream sensor (limited to max of 3)							
						)							
						)							
						for time	>=	10	sec				
						)							
						OR							
						(							
						Battery voltage	<	25.59961	V				
						OR							
						(							
						Environmental temperature	>	3003.56	deg C				
						and							
						Ignition is ON	=	TRUE	-				
						for time	>=	0	sec				
						)							
						)							
						for time	>=	0	sec				
						)							
						Basic enable conditions met	=	see sheet enable tables	-				
						No Pending or Confirmed DTCs	=	see sheet inhibit tables	-				
	P0037	Diagnoses the HO2S Heater Control Bank 1 Sensor 2 low side driver circuit for circuit low faults	Voltage low during driver off state (indicates short-to-ground)	= Short to ground: ≤ 0.5 Ω impedance between signal and controller ground	-	General enabling condition for powerstage diagnosis	=	TRUE	-	0.5	sec	continuous	2 Trips
						(							
						Battery voltage	<	25.5	V				
						Battery voltage	>	10.9	V				
						Engine speed	>=	80	rpm				
						)							
						Conditions for enabling sensor heating for O2 sensor	=	TRUE	-				
						(							
						ECU is not in POST DRIVE state	=	TRUE	-				
						and							
						Battery Voltage	<=	25.59961	V				
						and							
						Engine start is completed	=	TRUE	-				

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					)			
					and			
					(			
					(			
					Dew point end is reached	= TRUE -		
					(			
					(			
					Integrated heat release since engine start	>= (b) * (((c) * (d)) + 1)		
					(b) Downstream O2 sensor heat threshold for release of heating (kJ) (see Look-Up-Table #P0138-1)	0 to 120 kJ		
					(c) adjustment factor (see Look-Up-Table #P0138-2)	0 to 0.5 -		
					(d) Number of drive cycles without reaching dew point end of downstream sensor (limited to max of 4)			
					)			
					and			
					Dew point end is reached at upstream of catalyst			
					(			
					Integrated heat release since engine start	>= (b) * (((c) * (d)) + 1)		
					(b) Upstream O2 sensor heat threshold for release of heating (kJ) (see Look-Up-Table #P0138-3)	0 to 96 kJ		
					(c) adjustment factor (see Look-Up-Table #P0138-4)	0 to 0.5 -		
					(d) Number of drive cycles without reaching dew point end of downstream sensor (limited to max of 3)			
					)			
					)			
					for time	>= 10 sec		
					)			
					OR			
					(			
					Battery voltage	< 25.59961 V		
					OR			
					(			
					Environmental temperature	> 3003.56 deg C		
					and			
					Ignition is ON	= TRUE -		
					for time	>= 0 sec		
					)			
					)			
					for time	>= 0 sec		
					)			
					Basic enable conditions met	= see sheet enable tables -		
					No Pending or Confirmed DTCs	= see sheet inhibit tables -		
	P0038	Diagnoses the HO2S Heater Control Bank 1 Sensor 2 low side driver circuit for circuit high faults	Voltage high during driver on state (indicates short-to-power)	- Short to power: ≤ 0.5 Ω impedance between signal and controller power -	General enabling condition for powerstage diagnosis	= TRUE -	0.5 sec continuous	2 Trips
					(			
					Battery voltage	< 25.5 V		
					Battery voltage	> 10.9 V		
					Engine speed	>= 80 rpm		
					)			
					Conditions for enabling sensor heating for O2 sensor	= TRUE -		
					(			
					ECU is not in POST DRIVE state	= TRUE -		
					and			
					Battery Voltage	<= 25.59961 V		
					and			
					Engine start is completed	= TRUE -		
					)			
					and			
					(			
					(			
					Dew point end is reached	= TRUE -		
					(			
					(			
					Integrated heat release since engine start	>= (b) * (((c) * (d)) + 1)		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					(b) Downstream O2 sensor heat threshold for release of heating (kJ) (see Look-Up-Table #P0138-1)	0 to 120 kJ		
					(c) adjustment factor (see Look-Up-Table #P0138-2)	0 to 0.5 -		
					(d) Number of drive cycles without reaching dew point end of downstream sensor (limited to max of 4)			
					)			
					and			
					Dew point end is reached at upstream of catalyst			
					(			
					Integrated heat release since engine start	>= (b) * (((c) * (d)) + 1)		
					(b) Upstream O2 sensor heat threshold for release of heating (kJ) (see Look-Up-Table #P0138-3)	0 to 96 kJ		
					(c) adjustment factor (see Look-Up-Table #P0138-4)	0 to 0.5 -		
					(d) Number of drive cycles without reaching dew point end of downstream sensor (limited to max of 3)			
					)			
					)			
					for time	>= 10 sec		
					)			
					OR			
					(			
					Battery voltage	< 25.59961 V		
					OR			
					(			
					Environmental temperature	> 3003.56 deg C		
					and			
					Ignition is ON	= TRUE -		
					for time	>= 0 sec		
					)			
					)			
					for time	>= 0 sec		
					)			
					Basic enable conditions met	= see sheet enable tables -		
					No Pending or Confirmed DTCs	= see sheet inhibit tables -		
HO2S Heater Control Circuit Bank 2 Sensor 2	P0056	Diagnoses the HO2S Heater Control Bank 2 Sensor 2 low side driver circuit for open circuit faults	Voltage low during driver off state (indicates open circuit)	= Open Circuit:≥ 200 K Ω impedance between ECU pin and load -	General enabling condition for powerstage diagnosis	= TRUE -	0.5 sec continuous	2 Trips
					(			
					Battery voltage	< 25.5 V		
					Battery voltage	> 10.9 V		
					Engine speed	>= 80 rpm		
					)			
					Conditions for enabling sensor heating for O2 sensor	= TRUE -		
					(			
					ECU is not in POST DRIVE state	= TRUE -		
					and			
					Battery Voltage	<= 25.59961 V		
					and			
					Engine start is completed	= TRUE -		
					)			
					and			
					(			
					(			
					Dew point end is reached	= TRUE -		
					(			
					(			
					Integrated heat release since engine start	>= (b) * (((c) * (d)) + 1) -		
					(b) Downstream O2 sensor heat threshold for release of heating (kJ) (see Look-Up-Table #P0158-1)	0 to 120 kJ		
					(c) adjustment factor (see Look-Up-Table #P0158-2)	0 to 0.5 -		
					(d) Number of drive cycles without reaching dew point end of downstream sensor (limited to max of 4)			
					)			
					and			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Dew point end is reached at upstream of catalyst			
					(			
					Integrated heat release since engine start	>= (b) * (((c) * (d)) + 1)		
					(b) Downstream O2 sensor heat threshold for release of heating (kJ) (see Look-Up-Table #P0158-3)	0 to 96 kJ		
					(c) adjustment factor (see Look-Up-Table #P0158-4)	0 to 0.5 -		
					(d) Number of drive cycles without reaching dew point end of downstream sensor (limited to max of 3)			
					)			
					)			
					for time	>= 10 sec		
					)			
					OR			
					(			
					Battery voltage	< 25.59961 V		
					OR			
					(			
					Environmental temperature	> 3003.56 deg C		
					and			
					Ignition is ON	= TRUE -		
					for time	>= 0 sec		
					)			
					)			
					for time	>= 0 sec		
					)			
					Basic enable conditions met	= see sheet enable tables -		
					No Pending or Confirmed DTCs	= see sheet inhibit tables -		
	P0057	Diagnoses the HO2S Heater Control Bank 2 Sensor 2 low side driver circuit for circuit low faults	Voltage low during driver off state (indicates short-to-ground)	= Short to ground: ≤ 0.5 Ω impedance between signal and controller ground -	General enabling condition for powerstage diagnosis	= TRUE -	0.5 sec continuous	2 Trips
					(			
					Battery voltage	< 25.5 V		
					Battery voltage	> 10.9 V		
					Engine speed	>= 80 rpm		
					)			
					Conditions for enabling sensor heating for O2 sensor	= TRUE -		
					(			
					ECU is not in POST DRIVE state	= TRUE -		
					and			
					Battery Voltage	<= 25.59961 V		
					and			
					Engine start is completed	= TRUE -		
					)			
					and			
					(			
					(			
					Dew point end is reached	= TRUE -		
					(			
					(			
					Integrated heat release since engine start	>= (b) * (((c) * (d)) + 1) -		
					(b) Downstream O2 sensor heat threshold for release of heating (kJ) (see Look-Up-Table #P0158-1)	0 to 120 kJ		
					(c) adjustment factor (see Look-Up-Table #P0158-2)	0 to 0.5 -		
					(d) Number of drive cycles without reaching dew point end of downstream sensor (limited to max of 4)			
					)			
					and			
					Dew point end is reached at upstream of catalyst			
					(			
					Integrated heat release since engine start	>= (b) * (((c) * (d)) + 1)		
					(b) Downstream O2 sensor heat threshold for release of heating (kJ) (see Look-Up-Table #P0158-3)	0 to 96 kJ		
					(c) adjustment factor (see Look-Up-Table #P0158-4)	0 to 0.5 -		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					(d) Number of drive cycles without reaching dew point end of downstream sensor (limited to max of 3)			
					)			
					)			
					for time	>= 10 sec		
					)			
					OR			
					(			
					Battery voltage	< 25.59961 V		
					OR			
					(			
					Environmental temperature	> 3003.56 deg C		
					and			
					Ignition is ON	= TRUE -		
					for time	>= 0 sec		
					)			
					)			
					for time	>= 0 sec		
					)			
					Basic enable conditions met	= see sheet enable tables -		
					No Pending or Confirmed DTCs	= see sheet inhibit tables -		
	P0058	Diagnoses the HO2S Heater Control Bank 2 Sensor 2 low side driver circuit for circuit high faults	Voltage high during driver on state (indicates short-to-power)	- Short to power: ≤ 0.5 Ω impedance between signal and controller power -	General enabling condition for powerstage diagnosis	= TRUE -	0.5 sec continuous	2 Trips
					(			
					Battery voltage	< 25.5 V		
					Battery voltage	> 10.9 V		
					Engine speed	>= 80 rpm		
					)			
					Conditions for enabling sensor heating for O2 sensor	= TRUE -		
					(			
					ECU is not in POST DRIVE state	= TRUE -		
					and			
					Battery Voltage	<= 25.59961 V		
					and			
					Engine start is completed	= TRUE -		
					)			
					and			
					(			
					(			
					Dew point end is reached	= TRUE -		
					(			
					(			
					Integrated heat release since engine start	>= (b) * (((c) * (d)) + 1) -		
					(b) Downstream O2 sensor heat threshold for release of heating (kJ) (see Look-Up-Table #P0158-1)	0 to 120 kJ		
					(c) adjustment factor (see Look-Up-Table #P0158-2)	0 to 0.5 -		
					(d) Number of drive cycles without reaching dew point end of downstream sensor (limited to max of 4)			
					)			
					and			
					Dew point end is reached at upstream of catalyst			
					(			
					Integrated heat release since engine start	>= (b) * (((c) * (d)) + 1)		
					(b) Downstream O2 sensor heat threshold for release of heating (kJ) (see Look-Up-Table #P0158-3)	0 to 96 kJ		
					(c) adjustment factor (see Look-Up-Table #P0158-4)	0 to 0.5 -		
					(d) Number of drive cycles without reaching dew point end of downstream sensor (limited to max of 3)			
					)			
					)			
					for time	>= 10 sec		
					)			
					OR			
					(			
					Battery voltage	< 25.59961 V		
					OR			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					(			
					Environmental temperature	> 3003.56 deg C		
					and			
					Ignition is ON	= TRUE -		
					for time	>= 0 sec		
					)			
					)			
					for time	>= 0 sec		
					)			
					Basic enable conditions met	= see sheet enable tables -		
					No Pending or Confirmed DTCs	= see sheet inhibit tables -		
Crankcase Ventilation System	P04DB	Diagnosis of Disconnected Crankcase Ventilation System- Plausibility check	The measured Crankcase ventilation pressure (see Look-Up Table #P04DB-1)	> -1.7 to 0.016 kPa	Cumulative release time for crankcase ventilation diagnosis	>= 2 sec	2 sec continuous	2 Trips
					Release of crankcase ventilation monitoring, which is the following conditions:	= TRUE -		
					(			
					Engine speed	<= 5000 rpm		
					Engine speed	>= 2500 rpm		
					Pressure upstream throttle valve bank 1	<= 260 kPa		
					Pressure upstream throttle valve bank 1	>= 130 kPa		
					Low-pass filtered value of the air mass flow for the crankcase monitoring	<= 152.7777778 g/sec		
					Low-pass filtered value of the air mass flow for the crankcase monitoring	>= 41.66666667 g/sec		
					(			
					Throttle Valve actuator position Bank 1	<= 100 %		
					Throttle Valve actuator position Bank 1	>= 50 %		
					)			
					for time	> 0.3 sec		
					Ambient pressure	>= 74.5 kPa		
					Enviroment temperature	>= -7.04 deg C		
					Engine is in running state	= TRUE -		
					Time since Engine running state was reached	> 0.5 sec		
					Coolant temperature	> -0.04 deg C		
					)			
					for time	> 5 sec		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
Engine Cooling System	P0128	Compares the measured engine coolant temperature with the modeled engine coolant temperature during engine warm-up	Engine coolant temperature difference between the model and the measured: (a) - (b) (a) the modeled engine coolant temperature (b) the measured engine coolant temperature	> 2 deg C	measured engine coolant temperature	< 59.86 deg C	20 sec	2 Trip
					Ignition key on	= TRUE -		
					Time since engine running	> 5 sec		
					Minium engine coolant temperature for the current trip	<= 39.98 deg C		
					measured ambient temperature	> = -7.04 deg C		
					Engine running time	< 2400 sec		
		Regulating engine coolant temperature : 70 degC			monitoring delay time since engine start (see Look-Up-Table #P0128-5)	>= 10 to 60 sec		
					Engine coolant temperature increase	>= 6 deg C		
					PT1 filtered average vehicle speed	> 18.64512119 mph		
					PT1 time constant	= 100 sec		
					Heat to engine coolant	> 10 deg C		
					calculation of the model temperature: ((a) + ((b) * (c)) + (d))	= ((a) + ((b) * (c)) + (d))		
					(a) temperature increment depending on inner torque and ambient temperature (see Look-Up-Table #P0128-3)	0 to 0.2243896 deg C/s		
					(b) Correction factor dependent on vehicle speed and ambient temperature (see Look-Up-Table #P0128-4)	1 to 1.160034 -		
					(c) correction factor for temperature difference over the radiator (see Look-Up-Table #P0128-2)	0 to 0.1 deg C/s		
					(d) temperature model correction during DFCO	(d) = (d1) * (d2)		
					(d1) temperatue model correction dependent on vehicle speed and ambient temperature (see Look-Up-Table #P0128-1)	-0.0810547 to -0.0000488 deg C/s		
					(d2) correction factor	1 -		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 — TEST GROUP: KGMXV04.2088 — EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
		OR						
		Continuously compares the measured engine coolant temperature with the modeled engine coolant temperature after warm-up monitoring	Engine coolant temperature difference between the model and the measured: (a) - (b) (a) the modeled engine coolant temperature (b) the measured engine coolant temperature	> 2 deg C	measured engine coolant temperature	< 59.86 deg C		
					Ignition key on	= TRUE -		
					Time since engine running	> 5 sec		
					Minium engine coolant temperature for the current trip	<= 39.98 deg C		
					measured ambient temperature	> = -7.04 deg C		
		Regulating engine coolant temperature : 70 degC			monitoring delay time since engine start (see Look-Up-Table #P0128-5)	>= 10 to 60 sec		
					PT1 filtered average vehicle speed	> 18.64512119 mph		
					PT1 time constant	= 100 sec		
					Heat to engine coolant	> 10 deg C		
					calculation of the model temperature:	= ((a) + ((b) * (c)) +		
					(a) temperature increment depending on inner torque and ambient temperature (see Look-Up-Table #P0128-3)	0 to 0.2243896 deg C/s		
					(b) Correction factor dependent on vehicle speed and ambient temperature (see Look-Up-Table #P0128-4)	1 to 1.160034 -		
					(c) correction factor for temperature difference over the radiator (see Look-Up-Table #P0128-2)	0 to 0.1 deg C/s		
					(d) temperature model correction during DFCO			
					(d1) temperatue model correction dependent on vehicle speed and ambient temperature (see Look-Up-Table #P0128-1)	-0.0810547 to - 0.0000488 deg C/s		
					(d2) correction factor	1 -		
					No pending or confirmed DTCs	= see sheet inhibit table -		
					Basic enable conditions met	= see sheet enable tables -		
Engine Coolant Temperature Sensor	P0118	Detects if the measured Engine Coolant Temperature sensor voltage is greater than a calibrated threshold for calibrated time.	Engine Coolant Temperature sensor voltage	>= 4.7996 V	Ignition is ON	= TRUE -	2 sec continuous	2 Trips
			Same as		Basic enable conditions met	= see sheet enable tables -		
			Engine Coolant Temperature	<= -46.6 deg C				
Engine Coolant Temperature Sensor	P0117	Detects if the measured Engine Coolant Temperature sensor voltage is less than a calibrated threshold for calibrated time.	Engine Coolant Temperature sensor voltage	<= 0.104 V	Ignition is ON	= TRUE -	2 sec continuous	2 Trips
			Same as		Basic enable conditions met	= see sheet enable tables -		
			Engine Coolant Temperature	>= 156 deg C				
Engine Coolant Temperature Sensor	P0116	Detects if the difference between mean valve and filetered valve of engine coolant tempearture sensor during cold start is greater than a calibrated threshold for a calibrated time	Difference between mean value and filtered value of engine coolant temperature sensor 1	> 14.96 deg C	Ignition is on	= TRUE -	1 sec Once per driving cycle	2 Trips
					for time	>= 1 sec		
					Combustion engine is running	= TRUE -		
					(			
					Engine is in synchronised state and engine is rotating	= TRUE -		
					for time	= 1 sec		
					(Measured engine stop time	>= 28800 sec		
					(Calculated engine stop time is exact value OR Minimum engine off time is calculated)	= TRUE - = TRUE -		
					for time)	< 3 sec		
					((Block heater is activated	= FALSE -		
					Diagnosis is inhibited by other temperature sensor errors)	= FALSE -		
					for time)	>= 0 sec		
					No pending or confirmed DTCs	= see sheet Inhibit tables -		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Basic enable conditions met	= see sheet enable tables -		
	P0116	Detects if the difference between filetered valve and mean valve of engine coolant tempearture sensor during cold start greator than calibrated threshold for an calibrated time	Difference between filtered value and mean value of engine coolant temperature sensor 1	> 14.96 deg C	Ignition is on	= TRUE -	1 Once per driving cycle	2 Trips
					for time	>= 1 sec		
					Combustion engine is running	= TRUE -		
					(			
					Engine is in synchronised state and engine is rotating	= TRUE -		
					for time	= 1 sec		
					)			
					(			
					(Measured engine stop time	>= 28800 sec		
					(	= TRUE -		
					Calculated engine stop time is exact value			
					OR			
					Minimum engine off time is calculated	= TRUE -		
					)			
					)			
					for time	< 3 sec		
					(			
					Block heater is activated	= FALSE -		
					Diagnosis is inhibited by other temperature sensor errors	= FALSE -		
					)			
					for time	>= 0 sec		
					No pending or confirmed DTCs	= see sheet Inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
					)			
Idle Control System / Cold Start Strategy	P050A	**Path 1:** Monitoring of idle control for overspeed during catalyst heating	Deviation of idle speed precontrol (set point - current)	< -200 rpm	ECU Sub-State in DRIVE	= TRUE -	5 sec multiple	2 Trips
			OR		Engine start has finished	= TRUE -		
			Number of fuel cut-out phases	>= 255 counts	(	= TRUE -		
					No external torque demand (engine is running in idle)			
					)			
					for time	>= 0 sec		
					Catalyst heating request by cold engine	= TRUE -		
					(			
					(			
					Condition: Request of catalyst heating in case of first start of combustion engine - Initialisation phase	= TRUE -		
					(			
					First start of combustion in driving cycle	= FALSE -		
					Engine is not running	= TRUE -		
					Desired value for integrated air mass by catalyst heating by cold engine	> 0 -		
					Intake air temperature in manifold	> -48.04 deg C		
					Difference between engine coolant temperatures in downstream and at engine stop	>= 50.3 deg C		
					Absolute difference between intake air temperature in manifold and engine coolant temperature in downstream during start	<= 191.3 deg C		
					Release of catalyst heating request by ambient temperature	= TRUE -		
					)			
					Condition: Request catalyst heating by cold engine (calculation till end of start is reached)	= TRUE -		
					(			
					(			
					Off time of start-end recognition for customer	= 1 -		
					OR			
					(			
					Difference between engine coolant temperatures in downstream and at engine stop	>= 50.3 deg C		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Absolute difference between intake air temperature in manifold and engine coolant temperature in downstream during start	<= 191.3 deg C		
					)			
					)			
					(			
					End of start is reached	= FALSE -		
					Request of catalyst heating in case of first start of combustion engine - Initialisation phase	= TRUE -		
					Difference between desired value for integrated air mass by catalyst heating by cold engine and residual heat inside catalyst by start of combustion engine	>= 200.18 g		
					)			
					OR			
					(			
					Condition for evaluation of temperature in first brick of front catalyst for catalyst heating	= TRUE -		
					(			
					End of start is reached	= FALSE -		
					Off time of start-end recognition for customer	= 1 -		
					Time counter at end of start from last driving cycle	> 120 sec		
					Engine off time based on start- end recognition	< 300 sec		
					)			
					Temperature inside first brick of front catalyst during start (see Look-Up-Table #P050A-1)	<= 399.96 to 439.96 deg C		
					)			
					Altitude correction factor	> 0.400024 -		
					)			
					Limp−home operation is not active	= TRUE -		
					Safety fuel cut off is not active	= TRUE -		
					Valid crankshaft signal is present	= TRUE -		
					Altitude correction factor	> 0 -		
					Vehicle speed	= 0 mph		
					Engine coolant temperature	<= 143.3 deg C		
					Engine coolant temperature	>= -39.8 deg C		
					Time after end of start	>= 0 sec		
					Difference between idle speed during catalyst heating and idle speed without catalyst heating	> 300 rpm		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enabling conditions are met	= see sheet enable tables -		
		Path 2: Monitoring of idle control for underspeed during catalyst heating	Deviation of idle speed precontrol (set point - current)	> 100 rpm	ECU Sub-State in DRIVE	= TRUE -	5 sec multiple	2 Trips
					Engine start has finished	= TRUE -		
					(No external torque demand (engine is running in idle))	= TRUE -		
					for time	>= 0 sec		
					Catalyst heating request by cold engine	= TRUE -		
					(			
					(			
					Condition: Request of catalyst heating in case of first start of combustion engine - Initialisation phase	= TRUE -		
					(			
					First start of combustion in driving cycle	= FALSE -		
					Engine is not running	= TRUE -		
					Desired value for integrated air mass by catalyst heating by cold engine	> 0.0 -		
					Intake air temperature in manifold	> -48.04 deg C		
					Difference between engine coolant temperatures in downstream and at engine stop	>= 50.3 deg C		
					Absolute difference between intake air temperature in manifold and engine coolant temperature in downstream during start	<= 191.3 deg C		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
							Release of catalyst heating request by ambient temperature	=	TRUE	-		
							)					
							Condition: Request catalyst heating by cold engine (calculation till end of start is reached)	=	TRUE	-		
							(					
							(					
							Off time of start-end recognition for customer	=	1	-		
							OR					
							(					
							Difference between engine coolant temperatures in downstream and at engine stop	>=	50.3	deg C		
							Absolute difference between intake air temperature in manifold and engine coolant temperature in downstream during start	<=	191.3	deg C		
							)					
							)					
							(					
							End of start is reached	=	FALSE	-		
							Request of catalyst heating in case of first start of combustion engine - Initialisation phase	=	TRUE	-		
							Difference between desired value for integrated air mass by catalyst heating by cold engine and residual heat inside catalyst by start of combustion engine	>=	200.18	g		
							)					
							OR					
							(					
							Condition for evaluation of temperature in first brick of front catalyst for catalyst heating	=	TRUE	-		
							(					
							End of start is reached	=	FALSE	-		
							Off time of start-end recognition for customer	=	1	-		
							Time counter at end of start from last driving cycle	>	120	sec		
							Engine off time based on start- end recognition	<	300	sec		
							)					
							Temperature inside first brick of front catalyst during start (see Look-Up-Table #P050A-1)	<=	399.96 to 439.96	deg C		
							)					
							Altitude correction factor	>	0.400024	-		
							)					
							Limp−home operation is not active	=	TRUE	-		
							Safety fuel cut off is not active	=	TRUE	-		
							Valid crankshaft signal is present	=	TRUE	-		
							Altitude correction factor	>	0	-		
							Vehicle speed	=	0	mph		
							Engine coolant temperature	<=	143.3	deg C		
							Engine coolant temperature	>=	-39.8	deg C		
							Time after end of start	>=	0	sec		
							Difference between idle speed during catalyst heating and idle speed without catalyst heating	>	300	rpm		
							No pending or confirmed DTCs	=	see sheet inhibit tables	-		
							Basic enabling conditions are met	=	see sheet enable tables	-		
Cold Start Ignition Timing Performance	P050B	**Path 1 :** Diagnosis of Cold Start Ignition Timing Performance in Engine Idle Mode	mean deviation of actual ignition effciency and desired catalyst heating ignition efficiency during idle	>	calculated value	_	Catalyst heating activated	=	TRUE	-	1 sec once per driving cycle	2 Trips
			current time for catalyst heating during cold start during idle	>	5	sec	(					
							End of start is reached	=	TRUE	-		
							Homogenous mode of operation is activated	=	TRUE	-		
							Robust engine run after initial fuelling	=	FALSE	-		
							(					
							Engine coolant temperature	>	39.8	deg C		
							OR					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					Time counter at end of start	>	120	sec		
					OR					
					(					
					Absolute value of fuel rail pressure	>	4	MPa		
					Engine is running	=	TRUE	-		
					)	=	25.5	sec		
					for time					
					OR					
					Vehicle speed	>	0	km/h or mph		
					OR					
					Initial fuelling stopped	=	TRUE	-		
					)					
					(					
					Catalyst heating request for end of line test	=	TRUE	-		
					OR					
					Catalyst heating request by cold engine	=	TRUE	-		
					(					
					(					
					Condition: Request of catalyst heating in case of first start of combustion engine - Initialisation phase	=	TRUE	-		
					(					
					First start of combustion in driving cycle	=	FALSE	-		
					Engine is not running	=	TRUE	-		
					Desired value for integrated air mass by catalyst heating by cold engine	>	0.0	-		
					Intake air temperature in manifold	>	-48.04	deg C		
					Difference between engine coolant temperatures in downstream and at engine stop	>=	50.3	deg C		
					Absolute difference between intake air temperature in manifold and engine coolant temperature in downstream during start	<=	191.3	deg C		
					Release of catalyst heating request by ambient temperature	=	TRUE	-		
					)					
					Condition: Request catalyst heating by cold engine (calculation till end of start is reached)	=	TRUE	-		
					(					
					(					
					Off time of start-end recognition for customer	=	1	-		
					OR					
					(					
					Difference between engine coolant temperatures in downstream and at engine stop	>=	50.3	deg C		
					Absolute difference between intake air temperature in manifold and engine coolant temperature in downstream during start	<=	191.3	deg C		
					)					
					)					
					(					
					End of start is reached	=	FALSE	-		
					Request of catalyst heating in case of first start of combustion engine - Initialisation phase	=	TRUE	-		
					Difference between desired value for integrated air mass by catalyst heating by cold engine and residual heat inside catalyst by start of combustion engine	>=	200.18	g		
					)					
					OR					
					(					
					Condition for evaluation of temperature in first brick of front catalyst for catalyst heating	=	TRUE	-		
					(					
					End of start is reached	=	FALSE	-		
					Off time of start-end recognition for customer	=	1	-		
					Time counter at end of start from last driving cycle	>	120	sec		
					Engine off time based on start- end recognition	<	300	sec		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					)			
					Temperature inside first brick of front catalyst during start (see Look-Up table #P050A-1)	<= 399.96 to 439.96 deg C		
					)			
					Altitude correction factor	> 0.400024 -		
					)			
					Reset request for catalyst heating by cold engine	= FALSE -		
					(			
					Catalyst heating activated	= TRUE -		
					Catalyst heating request by cold engine	= TRUE -		
					(			
					Relative amount of integrated air mass at catalyst heating	>= 0.6999969 -		
					OR			
					Duration of catalyst heating during cold start	> A * B -		
					(A * B) where in			
					(A) maximum time for active catalyst heating in dependence from altitude and engine start temperature (see Look-Up table #P053F-1)	= 25 to 45 sec		
					(B) weighing map for consideration of catalyst heating for finishing catalyst heating	=		
					OR			
					(			
					Catalyst heating break off in case of permanent idle	= FALSE -		
					Catalyst heating activated	= FALSE -		
					Idle speed	= TRUE -		
					for time	>= 60 sec		
					)			
					OR			
					(			
					Catalyst heating request by cold engine	= TRUE -		
					Catalyst heating request by cold engine (calculation till end of start is reached)	= FALSE -		
					)			
					)			
					Engine is running	= TRUE -		
					for time	= 1 sec		
					)			
					(			
					(			
					Catalyst heating activated	= FALSE -		
					OR			
					Terminating factor for catalyst heating	> 0.0 -		
					)			
					Terminating factor for catalyst heating	> 0.1016 -		
					)			
					Relative amount of integrated air mass at catalyst heating	<		
					)			
					)			
					OR			
					Catalyst heating request in case of warming catalyst	= TRUE -		
					(			
					Engine operates in catalyst warming mode	= TRUE -		
					Factor for weighting catalyst heating request for catalysator warming	> 0.01 -		
					(			
					Engine is running	= TRUE -		
					Engine speed	< A - B -		
					(A - B) where in			
					(A) maximum engine speed for catalyst warming	= 3000 rpm		
					(B) hysteresis for engine speed for the release of catalyst warming	= 0 rpm		
					Catalyst heating request by cold engine	= FALSE -		
					Time counter at first end of start in cycle	> 0 sec		
					Lambda for component protection is active	= FALSE -		
					(			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					Lambda closed loop control (upstream catalyst), bank 1	=	TRUE	-		
					Engine coolant temperature	>	-273.04	deg C		
					)					
					OR					
					(					
					Lambda closed loop control (upstream catalyst), bank 1	=	FALSE	-		
					Engine coolant temperature	>	-273.04	deg C		
					)					
					Relative air mass	<	A - B	-		
					(A - B) where in					
					(A) maximum relative air charge for the release of catalyst warming	=	1534.992	%		
					(B) hysteresis for maximum relative air charge for the release of catalyst warming	=	0	%		
					)					
					)					
					(					
					Maximum of two catalyst temperatures in Bank 2	<	A - B	-		
					(A - B) where in					
					(A) maximum temperature of the first and second catalyst of Bank2 to which no catalyst warming is required	=	3003.56	deg C		
					(B) hysteresis of maximum temperature of the first and second catalyst of Bank2 to which no catalyst warming is required	=	0	deg C		
					OR					
					Maximum of two catalyst temperatures in Bank 1	<	A - B	-		
					(A - B) where in					
					(A) maximum temperature of the first and second catalyst of Bank2 to which no catalyst warming is required	=	3003.56	deg C		
					(B) hysteresis of maximum temperature of the first and second catalyst of Bank2 to which no catalyst warming is required	=	0	deg C		
					)					
					Catalyst heating request by cold engine	=	TRUE	-		
					(					
					(					
					Condition: Request of catalyst heating in case of first start of combustion engine - Initialisation phase	=	TRUE	-		
					(					
					First start of combustion in driving cycle	=	FALSE	-		
					Engine is not running	=	TRUE	-		
					Desired value for integrated air mass by catalyst heating by cold engine	>	0.0	-		
					Intake air temperature in manifold	>	-48.04	deg C		
					Difference between engine coolant temperatures in downstream and at engine stop	>=	50.3	deg C		
					Absolute difference between intake air temperature in manifold and engine coolant temperature in downstream during start	<=	191.3	deg C		
					Release of catalyst heating request by ambient temperature	=	TRUE	-		
					)					
					Condition: Request catalyst heating by cold engine (calculation till end of start is reached)	=	TRUE	-		
					(					
					(					
					Off time of start-end recognition for customer	=	1	-		
					OR					
					(					
					Difference between engine coolant temperatures in downstream and at engine stop	>=	50.3	deg C		
					Absolute difference between intake air temperature in manifold and engine coolant temperature in downstream during start	<=	191.3	deg C		
					)					
					)					
					(					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					End of start is reached	=	FALSE	-		
					Request of catalyst heating in case of first start of combustion engine - Initialisation phase	=	TRUE	-		
					Difference between desired value for integrated air mass by catalyst heating by cold engine and residual heat inside catalyst by start of combustion engine	>=	200.18	g		
					)					
					OR					
					(					
					Condition for evaluation of temperature in first brick of front catalyst for catalyst heating	=	TRUE	-		
					(					
					End of start is reached	=	FALSE	-		
					Off time of start-end recognition for customer	=	1	-		
					Time counter at end of start from last driving cycle	>	120	sec		
					Engine off time based on start- end recognition	<	300	sec		
					)					
					Temperature inside first brick of front catalyst during start (see Look-Up table #P050A-1)	<=	399.96 to 439.96	deg C		
					)					
					Altitude correction factor	>	0.400024	-		
					)					
					Reset request for catalyst heating by cold engine	=	FALSE	-		
					(					
					Catalyst heating activated	=	TRUE	-		
					Catalyst heating request by cold engine	=	TRUE	-		
					(					
					Relative amount of integrated air mass at catalyst heating	>=	0.6999969	-		
					OR					
					Duration of catalyst heating during cold start	>	A * B	-		
					(A * B) where in					
					(A) maximum time for active catalyst heating in dependence from altitude and engine start temperature (see Look-Up table #P053F-1)	=	25 to 45	sec		
					(B) weighing map for consideration of catalyst heating for finishing catalyst heating	=				
					OR					
					(					
					Catalyst heating break off in case of permanent idle	=	FALSE	-		
					Catalyst heating activated	=	FALSE	-		
					Idle speed	=	TRUE	-		
					for time	>=	60	sec		
					)					
					OR					
					(					
					Catalyst heating request by cold engine	=	TRUE	-		
					Catalyst heating request by cold engine (calculation till end of start is reached)	=	FALSE	-		
					)					
					)					
					Engine is running	=	TRUE	-		
					for time	=	1	sec		
					)					
					(					
					(					
					Catalyst heating activated	=	FALSE	-		
					OR					
					Terminating factor for catalyst heating	>	0.0	-		
					)					
					Terminating factor for catalyst heating	>	0.1016	-		
					)					
					Relative amount of integrated air mass at catalyst heating	<				

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					)			
					)			
					)			
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enabling conditions are met	= see sheet enable tables -		
		Path 2: Diagnosis of Cold Start Ignition Timing Performance at Engine Part Load	mean deviation of actual ignition effciency and desired catalyst heating ignition efficiency outside idle	> calculated value -	Catalyst heating activated	= TRUE -	1 sec once per driving cycle	2 Trips
			current time for catalyst heating during cold start outside idle	> 5 sec	(			
					End of start is reached	= TRUE -		
					Homogenous mode of operation is activated	= TRUE -		
					Robust engine run after initial fuelling	= FALSE -		
					(			
					Engine coolant temperature	> 39.8 deg C		
					OR			
					Time counter at end of start	> 120 sec		
					OR			
					(			
					Absolute value of fuel rail pressure	> 4 MPa		
					Engine is running	= TRUE -		
					)	= 25.5 sec		
					for time			
					OR			
					Vehicle speed	> 0 km/h or mph		
					OR			
					Initial fuelling stopped	= TRUE -		
					)			
					(			
					Catalyst heating request for end of line test	= TRUE -		
					OR			
					Catalyst heating request by cold engine	= TRUE -		
					(			
					(			
					Condition: Request of catalyst heating in case of first start of combustion engine - Initialisation phase	= TRUE -		
					(			
					First start of combustion in driving cycle	= FALSE -		
					Engine is not running	= TRUE -		
					Desired value for integrated air mass by catalyst heating by cold engine	> 0.0 -		
					Intake air temperature in manifold	> -48.04 deg C		
					Difference between engine coolant temperatures in downstream and at engine stop	>= 50.3 deg C		
					Absolute difference between intake air temperature in manifold and engine coolant temperature in downstream during start	<= 191.3 deg C		
					Release of catalyst heating request by ambient temperature	= TRUE -		
					)			
					Condition: Request catalyst heating by cold engine (calculation till end of start is reached)	= TRUE -		
					(			
					(			
					Off time of start-end recognition for customer	= 1 -		
					OR			
					(			
					Difference between engine coolant temperatures in downstream and at engine stop	>= 50.3 deg C		
					Absolute difference between intake air temperature in manifold and engine coolant temperature in downstream during start	<= 191.3 deg C		
					)			
					)			
					(			
					End of start is reached	= FALSE -		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					Request of catalyst heating in case of first start of combustion engine - Initialisation phase	=	TRUE	-		
					Difference between desired value for integrated air mass by catalyst heating by cold engine and residual heat inside catalyst by start of combustion engine	>=	200.18	g		
					)					
					OR					
					(					
					Condition for evaluation of temperature in first brick of front catalyst for catalyst heating	=	TRUE	-		
					(					
					End of start is reached	=	FALSE	-		
					Off time of start-end recognition for customer	=	1	-		
					Time counter at end of start from last driving cycle	>	120	sec		
					Engine off time based on start- end recognition	<	300	sec		
					)					
					Temperature inside first brick of front catalyst during start (see Look-Up table #P050A-1)	<=	399.96 to 439.96	deg C		
					)					
					Altitude correction factor	>	0.400024	-		
					)					
					Reset request for catalyst heating by cold engine	=	FALSE	-		
					(					
					Catalyst heating activated	=	TRUE	-		
					Catalyst heating request by cold engine	=	TRUE	-		
					(					
					Relative amount of integrated air mass at catalyst heating	>=	0.6999969	-		
					OR					
					Duration of catalyst heating during cold start	>	A * B	-		
					(A * B) where in					
					(A) maximum time for active catalyst heating in dependence from altitude and engine start temperature (see Look-Up table #P053F-1)	=	25 to 45	sec		
					(B) weighing map for consideration of catalyst heating for finishing catalyst heating	=				
					OR					
					(					
					Catalyst heating break off in case of permanent idle	=	FALSE	-		
					Catalyst heating activated	=	FALSE	-		
					Idle speed	=	TRUE	-		
					for time	>=	60	sec		
					)					
					OR					
					(					
					Catalyst heating request by cold engine	=	TRUE	-		
					Catalyst heating request by cold engine (calculation till end of start is reached)	=	FALSE	-		
					)					
					)					
					Engine is running	=	TRUE	-		
					for time	=	1	sec		
					)					
					(					
					(					
					Catalyst heating activated	=	FALSE	-		
					OR					
					Terminating factor for catalyst heating	>	0.0	-		
					)					
					Terminating factor for catalyst heating	>	0.1016	-		
					)					
					Relative amount of integrated air mass at catalyst heating	<				
					)					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					)			
					OR			
					Catalyst heating request in case of warming catalyst	= TRUE -		
					(			
					Engine operates in catalyst warming mode	= TRUE -		
					Factor for weighting catalyst heating request for catalysator warming	> 0.01 -		
					(			
					Engine is running	= TRUE -		
					Engine speed	< A - B -		
					(A - B) where in			
					(A) maximum engine speed for catalyst warming	= 3000 rpm		
					(B) hysteresis for engine speed for the release of catalyst warming	= 0 rpm		
					Catalyst heating request by cold engine	= FALSE -		
					Time counter at first end of start in cycle	> 0 sec		
					Lambda for component protection is active	= FALSE -		
					(			
					Lambda closed loop control (upstream catalyst), bank 1	= TRUE -		
					Engine coolant temperature	> -273.04 deg C		
					)			
					OR			
					(			
					Lambda closed loop control (upstream catalyst), bank 1	= FALSE -		
					Engine coolant temperature	> -273.04 deg C		
					)			
					Relative air mass	< A - B -		
					(A - B) where in			
					(A) maximum relative air charge for the release of catalyst warming	= 1534.992 %		
					(B) hysteresis for maximum relative air charge for the release of catalyst warming	= 0 %		
					)			
					)			
					(			
					Maximum of two catalyst temperatures in Bank 2	< A - B -		
					(A - B) where in			
					(A) maximum temperature of the first and second catalyst of Bank2 to which no catalyst warming is required	= 3003.56 deg C		
					(B) hysteresis of maximum temperature of the first and second catalyst of Bank2 to which no catalyst warming is required	= 0 deg C		
					OR			
					Maximum of two catalyst temperatures in Bank 1	< A - B -		
					(A - B) where in			
					(A) maximum temperature of the first and second catalyst of Bank2 to which no catalyst warming is required	= 3003.56 deg C		
					(B) hysteresis of maximum temperature of the first and second catalyst of Bank2 to which no catalyst warming is required	= 0 deg C		
					)			
					Catalyst heating request by cold engine	= TRUE -		
					(			
					(			
					Condition: Request of catalyst heating in case of first start of combustion engine - Initialisation phase	= TRUE -		
					(			
					First start of combustion in driving cycle	= FALSE -		
					Engine is not running	= TRUE -		
					Desired value for integrated air mass by catalyst heating by cold engine	> 0.0 -		
					Intake air temperature in manifold	> -48.04 deg C		
					Difference between engine coolant temperatures in downstream and at engine stop	>= 50.3 deg C		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					Absolute difference between intake air temperature in manifold and engine coolant temperature in downstream during start	<=	191.3	deg C		
					Release of catalyst heating request by ambient temperature	=	TRUE	-		
					)					
					Condition: Request catalyst heating by cold engine (calculation till end of start is reached)	=	TRUE	-		
					(					
					(					
					Off time of start-end recognition for customer	=	1	-		
					OR					
					(					
					Difference between engine coolant temperatures in downstream and at engine stop	>=	50.3	deg C		
					Absolute difference between intake air temperature in manifold and engine coolant temperature in downstream during start	<=	191.3	deg C		
					)					
					)					
					(					
					End of start is reached	=	FALSE	-		
					Request of catalyst heating in case of first start of combustion engine - Initialisation phase	=	TRUE	-		
					Difference between desired value for integrated air mass by catalyst heating by cold engine and residual heat inside catalyst by start of combustion engine	>=	200.18	g		
					)					
					OR					
					(					
					Condition for evaluation of temperature in first brick of front catalyst for catalyst heating	=	TRUE	-		
					(					
					End of start is reached	=	FALSE	-		
					Off time of start-end recognition for customer	=	1	-		
					Time counter at end of start from last driving cycle	>	120	sec		
					Engine off time based on start- end recognition	<	300	sec		
					)					
					Temperature inside first brick of front catalyst during start (see Look-Up table #P050A-1)	<=	399.96 to 439.96	deg C		
					)					
					Altitude correction factor	>	0.400024	-		
					)					
					Reset request for catalyst heating by cold engine	=	FALSE	-		
					(					
					Catalyst heating activated	=	TRUE	-		
					Catalyst heating request by cold engine	=	TRUE	-		
					(					
					Relative amount of integrated air mass at catalyst heating	>=	0.6999969	-		
					OR					
					Duration of catalyst heating during cold start	>	A * B	-		
					(A * B) where in					
					(A) maximum time for active catalyst heating in dependence from altitude and engine start temperature (see Look-Up table #P053F-1)	=	25 to 45	sec		
					(B) weighing map for consideration of catalyst heating for finishing catalyst heating	=	1	-		
					OR					
					(					
					Catalyst heating break off in case of permanent idle	=	FALSE	-		
					Catalyst heating activated	=	FALSE	-		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Idle speed	= TRUE -		
					for time	>= 60 sec		
					)			
					OR			
					(			
					Catalyst heating request by cold engine	= TRUE -		
					Catalyst heating request by cold engine (calculation till end of start is reached)	= FALSE -		
					)			
					)			
					Engine is running	= TRUE -		
					for time	= 1 sec		
					)			
					(			
					(			
					Catalyst heating activated	= FALSE -		
					OR			
					Terminating factor for catalyst heating	> 0.0 -		
					)			
					Terminating factor for catalyst heating	> 0.1016 -		
					)			
					Relative amount of integrated air mass at catalyst heating	<		
					)			
					)			
					)			
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enabling conditions are met	= see sheet enable tables -		
High Pressure Fuel System	P053F	Detects if High Pressure fuel system control deviation of rail pressure during cold start is less than maximum threshold for calibrated period of time	Filtered value of rail pressure control deviation	< -3 MPa	Conditions for Plausibility check of Fuel supply system	= TRUE -	7 sec continuous	2 Trips
					(			
					Airbag is activated	= FALSE -		
					Rail pressure sensor voltage is not plausible	= FALSE -		
					Battery voltage	<= 655.34 V		
					Mean value of effective relative volumetric injected fuel mass	>= 7.734 %		
					Mean value of effective relative volumetric injected fuel mass	<= 3071.953 %		
					Initial fueling mode is active	= FALSE -		
					)			
					Time counter at end of start	>= 2 sec		
					Conditions for reset of high-pressure regulation	= FALSE -		
					(			
					(			
					(			
					(			
					Actual number of cylinders with injection cut-off	< 8 -		
					Desired number of cylinders with injection cut-off	< 8 -		
					)			
					OR			
					End of start is reached	= FALSE -		
					)			
					OR			
					Difference between the actual rail pressure and filtered rail pressure setpoint	> (A+B) MPa		
					(A+B) where in:			
					(A) rail pressure offset during fuel cutoff for activation demand control	= 1 MPa		
					(B) maximum difference between actual rail pressure and set rail pressure for deactivation of MSV if fuel cutt off is active	= 0 MPa		
					)			
					(			
					(			
					High pressure pump is active	= TRUE -		
					(			
					Engine is in running state	= TRUE -		
					OR			
					Crankshaft signal is detected	= TRUE -		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					)					
					for time	=	0.04	sec		
					)					
					OR					
					(					
					High pressure pump is not active	=	FALSE	-		
					End of start is reached	=	TRUE	-		
					))					
					(					
					Start of injection enabled	=	TRUE	-		
					(					
					(					
					Engine start is in pre-injection mode	=	TRUE	-		
					Injection counter	>=	(A+B)	-		
					(A+B) where in:					
						=	2	-		
					(A) Number of injections for enabling high-pressure controller					
					(B) Number of cylinders	=	8	-		
					)					
					OR					
					(					
					Engine start is not in pre-injection mode	=	FALSE	-		
					Injection counter	>=	2	-		
					))					
					)					
					(					
					Engine state of synchronisation for rail pressure control activation	>=	30	-		
					(					
					Engine is in running state	=	TRUE	-		
					OR					
					Crankshaft signal is detected	=	TRUE	-		
					)					
					for time	=	0.04	sec		
					)					
					)					
					for time	=	7	sec		
					Conditions for high pressure fuel system diagnosis during cold start					
					(					
					(					
					Rail pressure setpoint	<	36	MPa		
					Rail pressure setpoint	>	6	MPa		
					)					
					for time	=	0.2	sec		
					Absolute of difference between rail pressure set point and its filtered value	<	15	MPa		
					for time	=	0.2	sec		
					Engine speed	>	0	rpm		
					Coolant temperature at engine output	>	-3549.94	deg C		
					)					
					Catalyst heating activated	=	TRUE	-		
					(					
					End of start is reached	=	TRUE	-		
					Homogenous mode of operation is activated	=	TRUE	-		
					Robust engine run after initial fuelling	=	FALSE	-		
					(					
					Engine coolant temperature	>	39.8	deg C		
					OR					
					Time counter at end of start	>	120	sec		
					OR					
					(					
					Absolute value of fuel rail pressure	>	4	MPa		
					Engine is running	=	TRUE	-		
					)	=	25.5	sec		
					for time					
					OR					
					Vehicle speed	>	0	km/h or mph		
					OR					
					Initial fuelling stopped	=	TRUE	-		
					)					
					(					
					Catalyst heating request for end of line test	=	TRUE	-		
					OR					
					Catalyst heating request by cold engine	=	TRUE	-		
					(					
					(					
					Condition: Request of catalyst heating in case of first start of combustion engine - Initialisation phase	=	TRUE	-		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 TEST GROUP: KGMXV04.2088 EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					(					
					First start of combustion in driving cycle	=	FALSE	-		
					Engine is not running	=	TRUE	-		
					Desired value for integrated air mass by catalyst heating by cold engine	>	0.0	-		
					Intake air temperature in manifold	>	-48.04	deg C		
					Difference between engine coolant temperatures in downstream and at engine stop	>=	50.3	deg C		
					Absolute difference between intake air temperature in manifold and engine coolant temperature in downstream during start	<=	191.3	deg C		
					Release of catalyst heating request by ambient temperature	=	TRUE	-		
					)					
					Condition: Request catalyst heating by cold engine (calculation till end of start is reached)	=	TRUE	-		
					(					
					(					
					Off time of start-end recognition for customer	=	1	-		
					OR					
					(					
					Difference between engine coolant temperatures in downstream and at engine stop	>=	50.3	deg C		
					Absolute difference between intake air temperature in manifold and engine coolant temperature in downstream during start	<=	191.3	deg C		
					)					
					)					
					(					
					End of start is reached	=	FALSE	-		
					Request of catalyst heating in case of first start of combustion engine - Initialisation phase	=	TRUE	-		
					Difference between desired value for integrated air mass by catalyst heating by cold engine and residual heat inside catalyst by start of combustion engine	>=	200.18	g		
					)					
					OR					
					(					
					Condition for evaluation of temperature in first brick of front catalyst for catalyst heating	=	TRUE	-		
					(					
					End of start is reached	=	FALSE	-		
					Off time of start-end recognition for customer	=	1	-		
					Time counter at end of start from last driving cycle	>	120	sec		
					Engine off time based on start- end recognition	<	300	sec		
					)					
					Temperature inside first brick of front catalyst during start (see Look-Up table #P050A-1)	<=	399.96 to 439.96	deg C		
					)					
					Altitude correction factor	>	0.400024	-		
					)					
					Reset request for catalyst heating by cold engine	=	FALSE	-		
					(					
					Catalyst heating activated	=	TRUE	-		
					Catalyst heating request by cold engine	=	TRUE	-		
					(					
					Relative amount of integrated air mass at catalyst heating	>=	0.6999969	-		
					OR					
					Duration of catalyst heating during cold start	>	A * B	-		
					(A * B) where in					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					(A) maximum time for active catalyst heating in dependence from altitude and engine start temperature (see Look-Up table #P053F-1)	= 25 to 45 sec		
					(B) weighing map for consideration of catalyst heating for finishing catalyst heating	= 1 -		
					OR			
					(			
					Catalyst heating break off in case of permanent idle	= FALSE -		
					Catalyst heating activated	= FALSE -		
					Idle speed	= TRUE -		
					for time	>= 60 sec		
					)			
					OR			
					(			
					Catalyst heating request by cold engine	= TRUE -		
					Catalyst heating request by cold engine (calculation till end of start is reached)	= FALSE -		
					)			
					)			
					Engine is running	= TRUE -		
					for time	= 1 sec		
					)			
					(			
					(			
					Catalyst heating activated	= FALSE -		
					Terminating factor for catalyst heating	> 0.0 -		
					)			
					Terminating factor for catalyst heating	> 0.1016 -		
					)			
					Relative amount of integrated air mass at catalyst heating	< 65535 -		
					)			
					)			
					OR			
					Catalyst heating request in case of warming catalyst	= TRUE -		
					(			
					Engine operates in catalyst warming mode	= TRUE -		
					Factor for weighting catalyst heating request for catalysator warming	> 0.01 -		
					(			
					Engine is running	= TRUE -		
					Engine speed	< A - B -		
					(A - B) where in			
					(A) maximum engine speed for catalyst warming	= 3000 rpm		
					(B) hysteresis for engine speed for the release of catalyst warming	= 0 rpm		
					Catalyst heating request by cold engine	= FALSE -		
					Time counter at first end of start in cycle	> 0 sec		
					Lambda for component protection is active	= FALSE -		
					(			
					(			
					Lambda closed loop control (upstream catalyst), bank 1	= TRUE -		
					Engine coolant temperature	> -273.04 deg C		
					)			
					OR			
					(			
					Lambda closed loop control (upstream catalyst), bank 1	= FALSE -		
					Engine coolant temperature	> -273.04 deg C		
					)			
					)			
					Relative air mass	< A - B -		
					(A - B) where in			
					(A) maximum relative air charge for the release of catalyst warming	= 1534.992 %		
					(B) hysteresis for maximum relative air charge for the release of catalyst warming	= 0 %		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					)			
					)			
					)			
					Maximum of two catalyst temperatures in Bank 2	< A - B -		
					(A - B) where in			
					(A) maximum temperature of the first and second catalyst of Bank2 to which no catalyst warming is required	= 3003.56 deg C		
					(B) hysteresis of maximum temperature of the first and second catalyst of Bank2 to which no catalyst warming is required	= 0 deg C		
					OR			
					Maximum of two catalyst temperatures in Bank 1	< A - B -		
					(A - B) where in			
					(A) maximum temperature of the first and second catalyst of Bank2 to which no catalyst warming is required	= 3003.56 deg C		
					(B) hysteresis of maximum temperature of the first and second catalyst of Bank2 to which no catalyst warming is required	= 0 deg C		
					)			
					)			
					No pending or confirmed DTCs	= see sheet inhibit table -		
					Basic enable conditions met	= see sheet enable table -		
		Detects if High Pressure fuel system control deviation of rail pressure during cold start is greater than minimum threshold for calibrated period of time	Filtered value of rail pressure control deviation	> 3 MPa	Airbag is activated	= FALSE -	5 sec continuous	2 Trips
					Rail pressure sensor voltage is not plausible	= FALSE -		
					Battery voltage	<= 655.34 V		
					Mean value of effective relative volumetric injected fuel mass	>= 7.734 %		
					Mean value of effective relative volumetric injected fuel mass	<= 3071.953 %		
					Initial fueling mode is active	= FALSE -		
					Time counter at end of start	>= 2 sec		
					Conditions for reset of high-pressure regulation	= FALSE -		
					(			
					(			
					(			
					(			
					Actual number of cylinders with injection cut-off	< 8 -		
					Desired number of cylinders with injection cut-off	< 8 -		
					)			
					OR			
					End of start is reached	= FALSE -		
					)			
					OR			
					Difference between the actual rail pressure and filtered rail pressure setpoint	> (A+B) MPa		
					(A+B) where in:			
					(A) rail pressure offset during fuel cutoff for activation demand control	= 1 MPa		
					(B) maximum difference between actual rail pressure and set rail pressure for deactivation of MSV if fuel cutt off is active	= 0 MPa		
					)			
					(			
					(			
					High pressure pump is active	= TRUE -		
					(			
					Engine is in running state	= TRUE -		
					OR			
					Crankshaft signal is detected	= TRUE -		
					)			
					for time	= 0.04 sec		
					)			
					OR			
					High pressure pump is not active	= FALSE -		
					End of start is reached	= TRUE -		
					)			
					(			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					Start of injection enabled	=	TRUE	-		
					(					
					Engine start is in pre-injection mode	=	TRUE	-		
					Injection counter	>=	(A+B)	-		
					(A+B) where in:	=	2	-		
					(A) Number of injections for enabling high-pressure controller					
					(B) Number of cylinders	=	8	-		
					OR					
					Engine start is not in pre-injection mode	=	FALSE	-		
					Injection counter	>=	2	-		
					)					
					)					
					(					
					Engine state of synchronisation for rail pressure control activation	>=	30	-		
					(					
					Engine is in running state	=	TRUE	-		
					OR					
					Crankshaft signal is detected	=	TRUE	-		
					)					
					for time	=	0.04	sec		
					)					
					)					
					for time	=	7	sec		
					Conditions for high pressure fuel system diagnosis during cold start					
					(					
					(					
					Rail pressure setpoint	<	36	MPa		
					Rail pressure setpoint	>	6	MPa		
					)					
					for time	=	0.2	sec		
					Absolute of difference between rail pressure set point and its filtered value	<	15	MPa		
					for time	=	0.2	sec		
					Engine speed	>	0	rpm		
					Coolant temperature at engine output	>	-3549.94	deg C		
					)					
					Catalyst heating activated	=	TRUE	-		
					(					
					End of start is reached	=	TRUE	-		
					Homogenous mode of operation is activated	=	TRUE	-		
					Robust engine run after initial fuelling	=	FALSE	-		
					(					
					Engine coolant temperature	>	39.8	deg C		
					OR					
					Time counter at end of start	>	120	sec		
					OR					
					(					
					Absolute value of fuel rail pressure	>	4	MPa		
					Engine is running	=	TRUE	-		
					)	=	25.5	sec		
					for time					
					OR					
					Vehicle speed	>	0	km/h or mph		
					OR					
					Initial fuelling stopped	=	TRUE	-		
					)					
					(					
					Catalyst heating request for end of line test	=	TRUE	-		
					OR					
					Catalyst heating request by cold engine	=	TRUE	-		
					(					
					(					
					Condition: Request of catalyst heating in case of first start of combustion engine - Initialisation phase	=	TRUE	-		
					(					
					First start of combustion in driving cycle	=	FALSE	-		
					Engine is not running	=	TRUE	-		
					Desired value for integrated air mass by catalyst heating by cold engine	>	0.0	-		
					Intake air temperature in manifold	>	-48.04	deg C		
					Difference between engine coolant temperatures in downstream and at engine stop	>=	50.3	deg C		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					Absolute difference between intake air temperature in manifold and engine coolant temperature in downstream during start	<=	191.3	deg C		
					Release of catalyst heating request by ambient temperature	=	TRUE	-		
					)					
					Condition: Request catalyst heating by cold engine (calculation till end of start is reached)	=	TRUE	-		
					(					
					(					
					Off time of start-end recognition for customer	=	1	-		
					OR					
					(					
					Difference between engine coolant temperatures in downstream and at engine stop	>=	50.3	deg C		
					Absolute difference between intake air temperature in manifold and engine coolant temperature in downstream during start	<=	191.3	deg C		
					)					
					)					
					(					
					End of start is reached	=	FALSE	-		
					Request of catalyst heating in case of first start of combustion engine - Initialisation phase	=	TRUE	-		
					Difference between desired value for integrated air mass by catalyst heating by cold engine and residual heat inside catalyst by start of combustion engine	>=	200.18	g		
					)					
					OR					
					(					
					Condition for evaluation of temperature in first brick of front catalyst for catalyst heating	=	TRUE	-		
					(					
					End of start is reached	=	FALSE	-		
					Off time of start-end recognition for customer	=	1	-		
					Time counter at end of start from last driving cycle	>	120	sec		
					Engine off time based on start- end recognition	<	300	sec		
					)					
					Temperature inside first brick of front catalyst during start (see Look-Up table #P050A-1)	<=	399.96 to 439.96	deg C		
					)					
					Altitude correction factor	>	0.400024	-		
					)					
					Reset request for catalyst heating by cold engine	=	FALSE	-		
					(					
					Catalyst heating activated	=	TRUE	-		
					Catalyst heating request by cold engine	=	TRUE	-		
					(					
					Relative amount of integrated air mass at catalyst heating	>=	0.6999969	-		
					OR					
					Duration of catalyst heating during cold start	>	A * B	-		
					(A * B) where in					
					(A) maximum time for active catalyst heating in dependence from altitude and engine start temperature (see Look-Up table #P053F-1)	=	25 to 45	sec		
					(B) weighing map for consideration of catalyst heating for finishing catalyst heating	=	1	-		
					OR					
					(					
					Catalyst heating break off in case of permanent idle	=	FALSE	-		
					Catalyst heating activated	=	FALSE	-		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					Idle speed	=	TRUE	-		
					for time	>=	60	sec		
					)					
					OR					
					(					
					Catalyst heating request by cold engine	=	TRUE	-		
					Catalyst heating request by cold engine (calculation till end of start is reached)	=	FALSE	-		
					)					
					)					
					Engine is running	=	TRUE	-		
					for time	=	1	sec		
					)					
					(					
					(					
					Catalyst heating activated	=	FALSE	-		
					Terminating factor for catalyst heating	>	0.0	-		
					)					
					Terminating factor for catalyst heating	>	0.1016	-		
					)					
					Relative amount of integrated air mass at catalyst heating	<	65535	-		
					)					
					)					
					OR					
					Catalyst heating request in case of warming catalyst	=	TRUE	-		
					(					
					Engine operates in catalyst warming mode	=	TRUE	-		
					Factor for weighting catalyst heating request for catalysator warming	>	0.01	-		
					(					
					Engine is running	=	TRUE	-		
					Engine speed	<	A - B	-		
					(A - B) where in					
					(A) maximum engine speed for catalyst warming	=	3000	rpm		
					(B) hysteresis for engine speed for the release of catalyst warming	=	0	rpm		
					Catalyst heating request by cold engine	=	FALSE	-		
					Time counter at first end of start in cycle	>	0	sec		
					Lambda for component protection is active	=	FALSE	-		
					(					
					Lambda closed loop control (upstream catalyst), bank 1	=	TRUE	-		
					Engine coolant temperature	>	-273.04	deg C		
					)					
					OR					
					(					
					Lambda closed loop control (upstream catalyst), bank 1	=	FALSE	-		
					Engine coolant temperature	>	-273.04	deg C		
					)					
					Relative air mass	<	A - B	-		
					(A - B) where in					
					(A) maximum relative air charge for the release of catalyst warming	=	1534.992	%		
					(B) hysteresis for maximum relative air charge for the release of catalyst warming	=	0	%		
					)					
					)					
					)					
					Maximum of two catalyst temperatures in Bank 2	<	A - B	-		
					(A - B) where in					
					(A) maximum temperature of the first and second catalyst of Bank2 to which no catalyst warming is required	=	3003.56	deg C		
					(B) hysteresis of maximum temperature of the first and second catalyst of Bank2 to which no catalyst warming is required	=	0	deg C		
					OR					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Maximum of two catalyst temperatures in Bank 1	< A - B -		
					(A - B) where in			
					(A) maximum temperature of the first and second catalyst of Bank2 to which no catalyst warming is required	= 3003.56 deg C		
					(B) hysteresis of maximum temperature of the first and second catalyst of Bank2 to which no catalyst warming is required	= 0 deg C		
					)			
					)			
					No pending or confirmed DTCs	= see sheet inhibit table -		
					Basic enable conditions met	= see sheet enable table -		
Cold start monitoring for camshaft diagnosis	P05CC	Detects stuck error when the deviation between the desired position and actual position of phase actuator intake camshaft is greater than calibrated threshold for a calibrated period of time	Deviation between setpoint and actual angle of camshaft intake actuator for CSERS diagnosis	> 6 degrees	Conditions for enabling camshaft phase shift actuator diagnosis for CSERS (Cold Start Emission Reduction Strategy)	= TRUE -	5 sec continuous	2 Trips
					(			
					Condition for requesting the cold start diagnosis request for intake camshaft	= TRUE -		
					(			
					Condition catalyst heating activated	= TRUE -		
					(			
					End of start is reached	= TRUE -		
					Homogenous mode of operation is activated	= TRUE -		
					Robust engine run after initial fuelling	= FALSE -		
					(			
					Engine coolant temperature	> 39.8 deg C		
					OR			
					Time counter at end of start	> 120 sec		
					OR			
					(			
					Absolute value of fuel rail pressure	> 4 MPa		
					Engine is running	= TRUE -		
					) for time	= 25.5 sec		
					OR			
					Vehicle speed	> 0 km/h or mph		
					OR			
					Initial fuelling stopped	= TRUE -		
					)			
					Catalyst heating request for end of line test	= TRUE -		
					)			
					Catalyst heating request by cold engine	= TRUE -		
					(			
					(			
					Condition: Request of catalyst heating in case of first start of combustion engine - Initialisation phase	= TRUE -		
					(			
					First start of combustion in driving cycle	= FALSE -		
					Engine is not running	= TRUE -		
					Desired value for integrated air mass by catalyst heating by cold engine	> 0.0 -		
					Intake air temperature in manifold	> -48.04 deg C		
					Difference between engine coolant temperatures in downstream and at engine stop	>= 50.3 deg C		
					Absolute difference between intake air temperature in manifold and engine coolant temperature in downstream during start	<= 191.3 deg C		
					Release of catalyst heating request by ambient temperature	= TRUE -		
					)			
					Condition: Request catalyst heating by cold engine (calculation till end of start is reached)	= TRUE -		
					(			
					(			
					Off time of start-end recognition for customer	= 1 -		
					OR			
					(			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					Difference between engine coolant temperatures in downstream and at engine stop	>=	50.3	deg C		
					Absolute difference between intake air temperature in manifold and engine coolant temperature in downstream during start	<=	191.3	deg C		
					)					
					)					
					(					
					End of start is reached	=	FALSE	-		
					Request of catalyst heating in case of first start of combustion engine - Initialisation phase	=	TRUE	-		
					Difference between desired value for integrated air mass by catalyst heating by cold engine and residual heat inside catalyst by start of combustion engine	>=	200.18	g		
					)					
					OR					
					(					
					Condition for evaluation of temperature in first brick of front catalyst for catalyst heating	=	TRUE	-		
					(					
					End of start is reached	=	FALSE	-		
					Off time of start-end recognition for customer	=	1	-		
					Time counter at end of start from last driving cycle	>	120	sec		
					Engine off time based on start- end recognition	<	300	sec		
					)					
					Temperature inside first brick of front catalyst during start (see Look-Up table #P050A-1)	<=	399.96 to 439.96	deg C		
					)					
					Altitude correction factor	>	0.400024	-		
					)					
					Reset request for catalyst heating by cold engine	=	FALSE	-		
					(					
					Catalyst heating activated	=	TRUE	-		
					Catalyst heating request by cold engine	=	TRUE	-		
					(					
					Relative amount of integrated air mass at catalyst heating	>=	0.6999969	-		
					OR					
					Duration of catalyst heating during cold start	>	A * B	-		
					(A * B) where in					
					(A) maximum time for active catalyst heating in dependence from altitude and engine start temperature (see Look-Up table #P053F-1)	=	25 to 45	sec		
					(B) weighing map for consideration of catalyst heating for finishing catalyst heating	=	1	-		
					OR					
					(					
					Catalyst heating break off in case of permanent idle	=	FALSE	-		
					Catalyst heating activated	=	FALSE	-		
					Idle speed	=	TRUE	-		
					for time	>=	60	sec		
					)					
					OR					
					(					
					Catalyst heating request by cold engine	=	TRUE	-		
					Catalyst heating request by cold engine (calculation till end of start is reached)	=	FALSE	-		
					)					
					)					
					Engine is running	=	TRUE	-		
					for time	=	1	sec		
					)					
					(					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					(					
					Catalyst heating activated	=	FALSE	-		
					OR					
					Terminating factor for catalyst heating	>	0.0	-		
					)					
					Terminating factor for catalyst heating	>	0.1016	-		
					)					
					Relative amount of integrated air mass at catalyst heating	<	65535	-		
					)					
					)					
					OR					
					Catalyst heating request in case of warming catalyst	=	TRUE	-		
					(					
					Engine operates in catalyst warming mode	=	TRUE	-		
					Factor for weighting catalyst heating request for catalysator warming	>	0.01	-		
					(					
					Engine is running	=	TRUE	-		
					Engine speed	<	A - B	-		
					(A - B) where in					
					(A) maximum engine speed for catalyst warming	=	3000	rpm		
					(B) hysteresis for engine speed for the release of catalyst warming	=	0	rpm		
					Catalyst heating request by cold engine	=	FALSE	-		
					Time counter at first end of start in cycle	>	0	sec		
					Lambda for component protection is active	=	FALSE	-		
					(					
					Lambda closed loop control (upstream catalyst), bank 1	=	TRUE	-		
					Engine coolant temperature	>	-273.04	deg C		
					)					
					OR					
					(					
					Lambda closed loop control (upstream catalyst), bank 1	=	FALSE	-		
					Engine coolant temperature	>	-273.04	deg C		
					)					
					Relative air mass	<	A - B	-		
					(A - B) where in					
					(A) maximum relative air charge for the release of catalyst warming	=	1534.992	%		
					(B) hysteresis for maximum relative air charge for the release of catalyst warming	=	0	%		
					)					
					)					
					(					
					Maximum of two catalyst temperatures in Bank 2	<	A - B	-		
					(A - B) where in					
					(A) maximum temperature of the first and second catalyst of Bank2 to which no catalyst warming is required	=	3003.56	deg C		
					(B) hysteresis of maximum temperature of the first and second catalyst of Bank2 to which no catalyst warming is required	=	0	deg C		
					OR					
					Maximum of two catalyst temperatures in Bank 1	<	A - B	-		
					(A - B) where in					
					(A) maximum temperature of the first and second catalyst of Bank2 to which no catalyst warming is required	=	3003.56	deg C		
					(B) hysteresis of maximum temperature of the first and second catalyst of Bank2 to which no catalyst warming is required	=	0	deg C		
					)					
					)					
					Catalyst heating request by cold engine	=	TRUE	-		
					Weighting factor for nominal angle of intake camshaft during catalyst heating	>	0	-		
					)					
					Ambient conditions for cold start diagnosis fulfilled	=	TRUE	-		
					(					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					Oil temperature at cylinder head	>=	-20.04	deg C		
					Oil temperature at cylinder head	<=	179.96	deg C		
					(					
					Engine Speed	>	10200	rpm		
					Engine Speed	<	500	rpm		
					)					
					Battery voltage	>=	10.9	V		
					)					
					State governor intake camshaft bank1	=	TRUE	-		
					(					
					Release conditions for intake camshaft control	=	TRUE	-		
					(					
					Engine Speed (see Look-Up-Table #P05CC-2)	>	1000 to 1150	rpm		
					Global enable conditions for camshaft control depending on oil pressure, temperature and battery voltage	=	TRUE	-		
					(					
					Battery Voltage	>	10	V		
					Battery Voltage	<=	655.34	V		
					)					
					(					
					Starting value of downstream engine coolant temperature	>=	3003.56	deg C		
					(					
					Oil temperature enabling conditions for camshaft diagnosis	=	TRUE	-		
					(					
					Oil temperature	>	-20.04	deg C		
					Oil temperature	<=	149.96	deg C		
					)					
					)					
					)					
					OR					
					(					
					Starting value of downstream engine coolant temperature	<	3003.56	deg C		
					Oil pressure enabling conditions for camshaft diagnosis	>=	0	sec		
					(					
					Oil pressure	>	250	kPa		
					for time	>=	0.03	sec		
					)					
					Oil temperature enabling conditions for camshaft diagnosis	=	TRUE	-		
					)					
					(					
					(					
					(					
					Engine is in running state	=	TRUE	-		
					No engine stall detected and engine is in running state	=	TRUE	-		
					and					
					Crankshaft signal has not failed and engine speed is available	=	TRUE	-		
					)					
					for time (see Look-Up-Table #P05CC-1)	>=	2 to 4	sec		
					)					
					OR					
					No stop request from start stop system and engine is active	=	TRUE	-		
					)					
					OR					
					Intake camshaft sensor is unlocked	=	TRUE	-		
					)					
					Difference between reference position phase actuator and desired position phase actuator intake camshaft bank1	>=	0	degrees		
					(					
					No adaptation of the reference position is requested	=	FALSE	-		
					OR					
					Intake camshaft sensor is unlocked	=	TRUE	-		
					)					
					for time (see Look-Up-Table #3)	>=	0.2 to 0.7	sec		
					)					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Difference between Desired position phase actuator and desired value intake camshaft nonCSERS bank1	> 6 degrees		
					)			
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
	P05CD	Detects stuck error when the deviation between the desired position and actual position of phase actuator intake camshaft bank 2 is greater than calibrated threshold for a calibrated period of time	Deviation between setpoint and actual angle of camshaft intake actuator for CSERS	> 6 degrees	Conditions for enabling camshaft phase shift actuator diagnosis for CSERS (Cold Start Emission Reduction Strategy)	= TRUE -	5 sec continuous	2 Trips
					(			
					Condition for requesting the cold start diagnosis request for intake camshaft	= TRUE -		
					(			
					Condition catalyst heating activated	= TRUE -		
					(			
					End of start is reached	= TRUE -		
					Homogenous mode of operation is activated	= TRUE -		
					Robust engine run after initial fuelling	= FALSE -		
					(			
					Engine coolant temperature	> 39.8 deg C		
					OR			
					Time counter at end of start	> 120 sec		
					OR			
					(			
					Absolute value of fuel rail pressure	> 4 MPa		
					Engine is running	= TRUE -		
					) for time	= 25.5 sec		
					OR			
					Vehicle speed	> 0 km/h or mph		
					OR			
					Initial fuelling stopped	= TRUE -		
					)			
					Catalyst heating request for end of line test	= TRUE -		
					)			
					Catalyst heating request by cold engine	= TRUE -		
					(			
					(			
					Condition: Request of catalyst heating in case of first start of combustion engine - Initialisation phase	= TRUE -		
					(			
					First start of combustion in driving cycle	= FALSE -		
					Engine is not running	= TRUE -		
					Desired value for integrated air mass by catalyst heating by cold engine	> 0.0 -		
					Intake air temperature in manifold	> -48.04 deg C		
					Difference between engine coolant temperatures in downstream and at engine stop	>= 50.3 deg C		
					Absolute difference between intake air temperature in manifold and engine coolant temperature in downstream during start	<= 191.3 deg C		
					Release of catalyst heating request by ambient temperature	= TRUE -		
					)			
					Condition: Request catalyst heating by cold engine (calculation till end of start is reached)	= TRUE -		
					(			
					(			
					Off time of start-end recognition for customer	= 1 -		
					OR			
					(			
					Difference between engine coolant temperatures in downstream and at engine stop	>= 50.3 deg C		
					Absolute difference between intake air temperature in manifold and engine coolant temperature in downstream during start	<= 191.3 deg C		
					)			
					)			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					(			
					End of start is reached	= FALSE -		
					Request of catalyst heating in case of first start of combustion engine - Initialisation phase	= TRUE -		
					Difference between desired value for integrated air mass by catalyst heating by cold engine and residual heat inside catalyst by start of combustion engine	>= 200.18 g		
					)			
					OR			
					(			
					Condition for evaluation of temperature in first brick of front catalyst for catalyst heating	= TRUE -		
					(			
					End of start is reached	= FALSE -		
					Off time of start-end recognition for customer	= 1 -		
					Time counter at end of start from last driving cycle	> 120 sec		
					Engine off time based on start- end recognition	< 300 sec		
					)			
					Temperature inside first brick of front catalyst during start (see Look-Up table #P050A-1)	<= 399.96 to 439.96 deg C		
					)			
					Altitude correction factor	> 0.400024 -		
					)			
					Reset request for catalyst heating by cold engine	= FALSE -		
					(			
					Catalyst heating activated	= TRUE -		
					Catalyst heating request by cold engine	= TRUE -		
					(			
					Relative amount of integrated air mass at catalyst heating	>= 0.6999969 -		
					OR			
					Duration of catalyst heating during cold start	> A * B -		
					(A * B) where in			
					(A) maximum time for active catalyst heating in dependence from altitude and engine start temperature (see Look-Up table #P053F-1)	= 25 to 45 sec		
					(B) weighing map for consideration of catalyst heating for finishing catalyst heating	= 1 -		
					OR			
					(			
					Catalyst heating break off in case of permanent idle	= FALSE -		
					Catalyst heating activated	= FALSE -		
					Idle speed	= TRUE -		
					for time	>= 60 sec		
					)			
					OR			
					(			
					Catalyst heating request by cold engine	= TRUE -		
					Catalyst heating request by cold engine (calculation till end of start is reached)	= FALSE -		
					)			
					)			
					Engine is running	= TRUE -		
					for time	= 1 sec		
					)			
					(			
					(			
					Catalyst heating activated	= FALSE -		
					OR			
					Terminating factor for catalyst heating	> 0.0 -		
					)			
					Terminating factor for catalyst heating	> 0.1016 -		
					)			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Relative amount of integrated air mass at catalyst heating	< 65535 -		
					)			
					)			
					OR			
					Catalyst heating request in case of warming catalyst	= TRUE -		
					(			
					Engine operates in catalyst warming mode	= TRUE -		
					Factor for weighting catalyst heating request for catalysator warming	> 0.01 -		
					(			
					Engine is running	= TRUE -		
					Engine speed	< A - B -		
					(A - B) where in			
					(A) maximum engine speed for catalyst warming	= 3000 rpm		
					(B) hysteresis for engine speed for the release of catalyst warming	= 0 rpm		
					Catalyst heating request by cold engine	= FALSE -		
					Time counter at first end of start in cycle	> 0 sec		
					Lambda for component protection is active	= FALSE -		
					(			
					Lambda closed loop control (upstream catalyst), bank 1	= TRUE -		
					Engine coolant temperature	> -273.04 deg C		
					)			
					OR			
					(			
					Lambda closed loop control (upstream catalyst), bank 1	= FALSE -		
					Engine coolant temperature	> -273.04 deg C		
					)			
					Relative air mass	< A - B -		
					(A - B) where in			
					(A) maximum relative air charge for the release of catalyst warming	= 1534.992 %		
					(B) hysteresis for maximum relative air charge for the release of catalyst warming	= 0 %		
					)			
					)			
					(			
					Maximum of two catalyst temperatures in Bank 2	< A - B -		
					(A - B) where in			
					(A) maximum temperature of the first and second catalyst of Bank2 to which no catalyst warming is required	= 3003.56 deg C		
					(B) hysteresis of maximum temperature of the first and second catalyst of Bank2 to which no catalyst warming is required	= 0 deg C		
					OR			
					Maximum of two catalyst temperatures in Bank 1	< A - B -		
					(A - B) where in			
					(A) maximum temperature of the first and second catalyst of Bank2 to which no catalyst warming is required	= 3003.56 deg C		
					(B) hysteresis of maximum temperature of the first and second catalyst of Bank2 to which no catalyst warming is required	= 0 deg C		
					)			
					)			
					Catalyst heating request by cold engine	= TRUE -		
					Weighting factor for nominal angle of intake camshaft during catalyst heating	> 0 -		
					)			
					Ambient conditions for cold start diagnosis fulfilled	= TRUE -		
					(			
					Oil temperature at cylinder head	>= -20.04 deg C		
					Oil temperature at cylinder head	<= 179.96 deg C		
					(			
					Engine Speed	> 10200 rpm		
					Engine Speed	< 500 rpm		
					)			
					Battery voltage	>= 10.9 V		
					)			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					State governor intake camshaft bank2	=	TRUE	-		
					(					
					Release conditions for intake camshaft control	=	TRUE	-		
					(					
					Engine Speed (see Look-Up-Table #P05CC-2)	>	1000 to 1150	rpm		
					Global enable conditions for camshaft control depending on oil pressure, temperature and battery voltage	=	TRUE	-		
					(					
					Battery Voltage	>	10	V		
					Battery Voltage	<=	655.34	V		
					)					
					(					
					Starting value of downstream engine coolant temperature	>=	3003.56	deg C		
					(					
					Oil temperature enabling conditions for camshaft diagnosis	=	TRUE	-		
					(					
					Oil temperature	>	-20.04	deg C		
					Oil temperature	<=	149.96	deg C		
					)					
					)					
					)					
					OR					
					(					
					Starting value of downstream engine coolant temperature	<	3003.56	deg C		
					Oil pressure enabling conditions for camshaft diagnosis	>=	0	sec		
					(					
					Oil pressure	>	250	kPa		
					for time	>=	0.03	sec		
					)					
					Oil temperature enabling conditions for camshaft diagnosis	=	TRUE	-		
					)					
					(					
					(					
					(					
					Engine is in running state	=	TRUE	-		
					No engine stall detected and engine is in running state	=	TRUE	-		
					Crankshaft signal has not failed and engine speed is available	=	TRUE	-		
					)					
					for time (see Look-Up-Table #P05CC-1)	>=	2 to 4	sec		
					)					
					OR					
					No stop request from start stop system and engine is active	=	TRUE	-		
					)					
					OR					
					Intake camshaft sensor is unlocked	=	TRUE	-		
					)					
					Difference between reference position phase actuator and desired position phase actuator intake camshaft bank2	>=	0	degrees		
					(					
					No adaptation of the reference position is requested	=	FALSE	-		
					OR					
					Intake camshaft sensor is unlocked	=	TRUE	-		
					)					
					for time (see Look-Up-Table #3)	>=	0.2 to 0.7	sec		
					)					
					Difference between Desired position phase actuator and desired value intake camshaft nonCSERS bank2	>	6	degrees		
					)					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
Cold Start Strategy	P2B95	**Path 1:** Detection of faulty injection output while catalyst heating with multiple injections	Ratio of the number of faulty combustions under catalyst heating condition to the number of combustions under catalyst heating condition with multiple injections active	> 0.100006 -	ECU is in drive state	= TRUE -	Once per driving cycle	2 Trips
					((Catalyst heating activated (see parameter definition)	= FALSE -		
					OR Catalyst heating request by cold engine (see parameter definition))	= FALSE -		
					Condition catalyst heating with desired operation mode for Cold start emission reduction strategy diagnosis	= FALSE -		
					Catalyst heating is completed for time)	= 10 sec		
					Monitor has not completed this drive cycle (i.e. monitor runs once per trip)	= TRUE -		
					No pending or confirmed DTCs	= see sheet Inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
	P2B95	**Path 2:** Detecting abnormal injector closing time delay	Error ratio calculated with correctly measured injector closing event per injection for diagnosis of catalyst heating with multiple injections	> 0.200012 -	ECU is in drive state	= TRUE -	Once per driving cycle	2 Trips
			injector closing delay of last CVO measurement	>= 720 us	((Catalyst heating activated	= FALSE -		
			injector closing delay of last CVO measurement	<= 100 us	OR			
					Catalyst heating request by cold engine)	= FALSE -		
					Condition catalyst heating with desired operation mode for Cold start emission reduction strategy diagnosis	= FALSE -		
					time with status of catalyst heating with multiple injections)	>= 9 sec		
					Counter of CVO-measurements during catalyst heating	>= 100		
					Monitor has not completed this drive cycle (i.e. monitor runs once per trip)	= TRUE -		
					No pending or confirmed DTCs	= see sheet Inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
	P2C9B	Monitoring of turbine bypass valve bank 1 jammed at open position during CSER	Actual position of turbine bypass valve bank 1	<= 50 %	(			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
							Control valve was detected as jammed	=	TRUE	-		
							for time	>	1	sec		
							)					
							Rapid heat-up mode	=	TRUE	-		
							No pending or confirmed DTCs	=	see sheet inhibit tables	-		
							Basic enable conditions met	=	see sheet enable tables	-		
			Actual position of turbine bypass valve bank 1	>	50	%	(					
							Control valve was detected as jammed	=	TRUE	-		
							for time	>	1	sec		
							)					
							Rapid heat-up mode	=	TRUE	-		
							No pending or confirmed DTCs	=	see sheet inhibit tables	-		
							Basic enable conditions met	=	see sheet enable tables	-		
	P2C9C	Monitoring of turbine bypass valve bank 2 jammed at open position during CSER	Actual position of turbine bypass valve bank 2	<=	50	%	(					
							Control valve was detected as jammed	=	TRUE	-		
							for time	>	1	sec		
							)					
							Rapid heat-up mode	=	TRUE	-		
							No pending or confirmed DTCs	=	see sheet inhibit tables	-		
							Basic enable conditions met	=	see sheet enable tables	-		
			Actual position of turbine bypass valve bank 2	>	50	%	(					
							Control valve was detected as jammed	=	TRUE	-		
							for time	>	1	sec		
							)					
							Rapid heat-up mode	=	TRUE	-		
							No pending or confirmed DTCs	=	see sheet inhibit tables	-		
							Basic enable conditions met	=	see sheet enable tables	-		
Camshaft Phaseshift Actuator	P0011	Monitoring of intake camshaft bank 1 position - Target error	(Actual angle has not reached target value threshold for allowed time within running monitoring cycle	=	TRUE	-	Ignition is on	=	TRUE	-	multiple	2 Trips
			For time to reach setpoint	>	1	sec	(					
							Oil temperature cylinder head	>=	-20.04	deg C		
			and				Oil temperature cylinder head	<=	179.96	deg C		
			Absolute deviation between the highest (max) / lowest (min) camshaft position and the stored setpoint value at the beginning of the monitoring	<	3	degrees	Engine speed	>	500	rpm		
			)				Engine speed	<=	10200	rpm		
							)					
			for a number of events	>=	4	events	(					
							State governor intake camshaft bank1 is working in closed loop operation	=	TRUE	-		
							Engine is in auto-stop mode	=	TRUE	-		
							Diagnosis is released after engine start for time	>=	0	sec		
							Battery voltage	>=	10.9	V		
							)					
							No pending or confirmed DTCs	=	see sheet inhibit tables	-		
							Basic enable conditions met	=	see sheet enable tables	-		
	P0014	Monitoring of outlet camshaft bank 1 position - Target error	(Actual angle has not reached target value threshold within running monitoring cycle	=	TRUE	-	Ignition is on	=	TRUE	-	multiple	2 Trips
			For time to reach setpoint	>	1	sec	(					
							Oil temperature cylinder head	>=	-20.04	deg C		
			AND				Oil temperature cylinder head	<=	179.96	deg C		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
			Absolute deviation between the highest (max) / lowest (min) camshaft position and the stored setpoint value at the beginning of the monitoring	<	3	degrees	Engine speed	>	500	rpm		
			)				Engine speed	<=	10200	rpm		
							)					
			for a number of events	>=	4	events	(State governor outlet camshaft bank1 is working in closed loop operation	=	TRUE	-		
							Engine is in auto-stop mode	=	TRUE	-		
							Diagnosis is released after engine start for time	>=	0	sec		
							Battery voltage	>=	10.9	V		
							)					
							No pending or confirmed DTCs	=	see sheet inhibit tables	-		
							Basic enable conditions met	=	see sheet enable tables	-		
	P0021	Monitoring of intake camshaft bank 2 position - Target error	(Actual angle has not reached target value threshold within running monitoring cycle	=	TRUE	-	Ignition is on	=	TRUE	-	multiple	2 Trips
			For time to reach setpoint	>	1	sec	(Oil temperature cylinder head	>=	-20.04	deg C		
			AND				Oil temperature cylinder head	<=	179.96	deg C		
			Absolute deviation between the highest (max) / lowest (min) camshaft position and the stored setpoint value at the beginning of the monitoring	<	3	degrees	Engine speed	>	500	rpm		
			)				Engine speed	<=	10200	rpm		
							)					
			for a number of events	>=	4	events	(State governor intake camshaft bank2 is working in closed loop operation	=	TRUE	-		
							Engine is in auto-stop mode	=	TRUE	-		
							Diagnosis is released after engine start for time	>=	0	sec		
							Battery voltage	>=	10.9	V		
							)					
							No pending or confirmed DTCs	=	see sheet inhibit tables	-		
							Basic enable conditions met	=	see sheet enable tables	-		
	P0024	Monitoring of outlet camshaft bank 2 position - Target error	(Actual angle has not reached target value threshold within running monitoring cycle	=	TRUE	-	Ignition is on	=	TRUE	-	multiple	2 Trips
			For time to reach setpoint	>	1	sec	(Oil temperature cylinder head	>=	-20.04	deg C		
			AND				Oil temperature cylinder head	<=	179.96	deg C		
			Absolute deviation between the highest (max) / lowest (min) camshaft position and the stored setpoint value at the beginning of the monitoring	<	3	degrees	Engine speed	>	500	rpm		
			)				Engine speed	<=	10200	rpm		
							)					
			for a number of events	>=	4	events	(State governor outlet camshaft bank2 is working in closed loop operation	=	TRUE	-		
							Engine is in auto-stop mode	=	TRUE	-		
							Diagnosis is released after engine start for time	>=	0	sec		
							Battery voltage	>=	10.9	V		
							)					
							No pending or confirmed DTCs	=	see sheet inhibit tables	-		
							Basic enable conditions met	=	see sheet enable tables	-		
Camshaft Phaseshift Actuator	P000A	Monitoring of intake camshaft bank 1 position - slow response fault	(Actual angle has not reached target value threshold for allowed time within running monitoring cycle	=	TRUE	-	Ignition is on	=	TRUE	-	multiple	2 Trips
			For time to reach setpoint	>	1	sec	(Oil temperature cylinder head	>=	-20.04	deg C		
			and				Oil temperature cylinder head	<=	179.96	deg C		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
			Absolute deviation between the highest (max) / lowest (min) camshaft position and the stored setpoint value at the beginning of the monitoring	>	3	degrees	Engine speed	>	500	rpm		
			)				Engine speed	<=	10200	rpm		
							)					
			for a number of events	>=	4	events	(State governor intake camshaft bank1 is working in closed loop operation	=	TRUE	-		
							Engine is in auto-stop mode	=	TRUE	-		
							Diagnosis is released after engine start for time	>=	0	sec		
							Battery voltage	>=	10.9	V		
							)					
							No pending or confirmed DTCs	=	see sheet inhibit tables	-		
							Basic enable conditions met	=	see sheet enable tables	-		
	P000B	Monitoring of outlet camshaft bank 1 position - slow response fault	(Actual angle has not reached target value threshold within running monitoring cycle	=	TRUE	-	Ignition is on	=	TRUE	-	multiple	2 Trips
			For time to reach setpoint	>	1	sec	(Oil temperature cylinder head	>=	-20.04	deg C		
			AND				Oil temperature cylinder head	<=	179.96	deg C		
			Absolute deviation between the highest (max) / lowest (min) camshaft position and the stored setpoint value at the beginning of the monitoring	>	3	degrees	Engine speed	>	500	rpm		
			)				Engine speed	<=	10200	rpm		
							)					
			for a number of events	>=	4	events	(State governor outlet camshaft bank1 is working in closed loop operation	=	TRUE	-		
							Engine is in auto-stop mode	=	TRUE	-		
							and					
							Diagnosis is released after engine start for time	>=	0	sec		
							Battery voltage	>=	10.9	V		
							)					
							No pending or confirmed DTCs	=	see sheet inhibit tables	-		
							Basic enable conditions met	=	see sheet enable tables	-		
	P000C	Monitoring of intake camshaft bank 2 position - slow response fault	(Actual angle has not reached target value threshold within running monitoring cycle	=	TRUE	-	Ignition is on	=	TRUE	-	multiple	2 Trips
			For time to reach setpoint	>	1	sec	(Oil temperature cylinder head	>=	-20.04	deg C		
			AND				Oil temperature cylinder head	<=	179.96	deg C		
			Absolute deviation between the highest (max) / lowest (min) camshaft position and the stored setpoint value at the beginning of the monitoring	>	3	degrees	Engine speed	>	500	rpm		
			)				Engine speed	<=	10200	rpm		
							)					
			for a number of events	>=	4	events	(State governor intake camshaft bank2 is working in closed loop operation	=	TRUE	-		
							Engine is in auto-stop mode	=	TRUE	-		
							Diagnosis is released after engine start for time	>=	0	sec		
							Battery voltage	>=	10.9	V		
							)					
							No pending or confirmed DTCs	=	see sheet inhibit tables	-		
							Basic enable conditions met	=	see sheet enable tables	-		
	P000D	Monitoring of outlet camshaft bank 2 position - slow response fault	(Actual angle has not reached target value threshold within running monitoring cycle	=	TRUE	-	Ignition is on	=	TRUE	-	multiple	2 Trips
			For time to reach setpoint	>	1	sec	(Oil temperature cylinder head	>=	-20.04	deg C		
			AND				Oil temperature cylinder head	<=	179.96	deg C		
			Absolute deviation between the highest (max) / lowest (min) camshaft position and the stored setpoint value at the beginning of the monitoring	>	3	degrees	Engine speed	>	500	rpm		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
			)		Engine speed	<= 10200 rpm		
					)			
			for a number of events	>= 4 events	(	= TRUE -		
					State governor outlet camshaft bank2 is working in closed loop operation			
					Engine is in auto-stop mode	= TRUE -		
					Diagnosis is released after engine start for time	>= 0 sec		
					Battery voltage	>= 10.9 V		
					)			
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
MAF Sensor B1 - Airflow	P0103	Monitoring of MAF sensor signal - MAF sensor signal permanently high	(	= TRUE -	Ignition is on	= TRUE -	1 sec continuous	2 Trips
			Time overflow error reported by MAF sensor					
			OR		Battery voltage	> 10.9 V		
			Maximum period violation error reported by MAF sensor	= TRUE -	Battery voltage	< 655.34 V		
			)					
					No pending or confirmed DTCs	= see sheet inhibit tables -		
			Pinpointing		Basic enable conditions met	= see sheet enable tables -		
			Current level of the PWM signal	= HIGH -				
	P0102	Monitoring of MAF sensor signal - MAF sensor signal permanently low	(	= TRUE -	Ignition is on	= TRUE -	1 sec continuous	2 Trips
			Time overflow error reported by MAF sensor					
			OR		Battery voltage	> 10.9 V		
			Maximum period violation error reported by MAF sensor	= TRUE -	Battery voltage	< 655.34 V		
			)					
					No pending or confirmed DTCs	= see sheet inhibit tables -		
			Pinpointing		Basic enable conditions met	= see sheet enable tables -		
			Current level of the PWM signal	= LOW -				
MAF Sensor B1 - Airflow	P0101	**Path 1:** Signal range check - out of range high	Raw value of time period transmitted by MAF sensor	> 980 us	Ignition is on	= TRUE -	1.5 sec continuous	2 Trips
					Battery voltage	> 10.9 V		
					Battery voltage	< 655.34 V		
					Error in the sensor self diagnosis	= FALSE -		
					Error in the electric line diagnosis	= FALSE -		
					Error in the electric line diagnosis	= FALSE -		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
	P0101	**Path 2:** Signal range check - out of range low	Raw value of time period transmitted by MAF sensor	< 6.50 us	Ignition is on	= TRUE -	1.5 sec continuous	2 Trips
					Battery voltage	> 10.9 V		
					Battery voltage	< 655.34 V		
					Error in the electric line diagnosis	= FALSE -		
					Error in the sensor self diagnosis	= FALSE -		
					Error in the sensor self diagnosis	= FALSE -		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
	P0101	**Path 3:** Sensor self diagnosis - MAF frequency in default range which indicates MAF has detected an internal error	Raw value of time period transmitted by MAF sensor	> 1800 us	Ignition is on	= TRUE -	0.5 sec continuous	2 Trips
			and		Battery voltage	> 10.9 V		
			Raw value of time period transmitted by MAF sensor	< 2200 us	Battery voltage	< 655.34 V		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
MAF Sensor B1 - Airflow	P0101	**Path 4:** Comparison of Maximum Modelled and actual Air Mass Flow (Plausibility Check)	Measured MAF from bank 1 sensor	> (A) / (B) g/sec	Engine is rotating forwards	= TRUE -	25.5 sec continuous	2 Trips
			with		and			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
			(A) Maximum modelled MAF at throttle body (B) Factor MAF sensor tolerance for min value	= calculated parameter g/sec = 0.600006 factor	Measured air mass flow sensor signal is invalid and Delta mass flow between compressor and DK through Delta pressure is valid for bank1 and Air mass flow through throttle valve for MAF diagnosis is valid No pending or confirmed DTCs Basic enable conditions met	= FALSE - = TRUE - = TRUE - = see sheet inhibit tables - = see sheet enable tables -		
	P0101	**Path 5:** Comparison of Minimum Modelled and actual Air Mass Flow (Plausibility Check)	Measured MAF from bank 1 sensor with (A) Minimum modelled MAF at throttle body (B) Factor MAF sensor tolerance for max value	< (C) / (D) g/sec = calculated parameter g/sec = 1.970001 factor	Engine is rotating forwards and Measured air mass flow sensor signal is invalid and Delta mass flow between compressor and DK through Delta pressure is valid for bank1 and Air mass flow through throttle valve for MAF diagnosis is valid No pending or confirmed DTCs Basic enable conditions met	= TRUE - = FALSE - = TRUE - = TRUE - = see sheet inhibit tables - = see sheet enable tables -	25.5 sec continuous	2 Trips
MAF Sensor B2 - Airflow	P010D	Monitoring of MAF sensor signal - MAF sensor signal permanently low	(Time overflow error reported by MAF sensor OR Maximum period violation error reported by MAF sensor) **Pinpointing** Current level of the PWM signal	= TRUE - = TRUE - = HIGH -	Ignition is on Battery voltage Battery voltage No pending or confirmed DTCs Basic enable conditions met	= TRUE - > 10.9 V < 655.34 V = see sheet inhibit tables - = see sheet enable tables -	1.5 sec continuous	2 Trips
	P010C	Monitoring of MAF sensor signal - MAF sensor signal permanently low	(Time overflow error reported by MAF sensor OR Maximum period violation error reported by MAF sensor) **Pinpointing** Current level of the PWM signal	= TRUE - = TRUE - = LOW -	Ignition is on Battery voltage Battery voltage No pending or confirmed DTCs Basic enable conditions met	= TRUE - > 10.9 V < 655.34 V = see sheet inhibit tables - = see sheet enable tables -	1.5 sec continuous	2 Trips
MAF Sensor B2 - Airflow	P010B	**Path 1:** Signal range check - out of range high	Raw value of time period transmitted by HFM sensor in Bank 2	> 980 us	Ignition is on Battery voltage Battery voltage Error in the sensor self diagnosis Error in the electric line diagnosis Error in the electric line diagnosis No pending or confirmed DTCs Basic enable conditions met	= TRUE - > 10.9 V < 655.34 V = FALSE - = FALSE - = FALSE - = see sheet inhibit tables - = see sheet enable tables -	1.5 sec continuous	2 Trips
	P010B	**Path 2:** Signal range check - out of range low	Raw value of time period transmitted by HFM sensor in Bank 2	< 6.5 us	Ignition is on Battery voltage Battery voltage Error in the sensor self diagnosis Error in the electric line diagnosis Error in the electric line diagnosis	= TRUE - > 10.9 V < 655.34 V = FALSE - = FALSE - = FALSE -	1.5 sec continuous	2 Trips

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
	P010B	**Path 3:** Sensor self diagnosis - MAF frequency in default range which indicates MAF has detected an internal error	Raw value of time period transmitted by HFM sensor in Bank 2	> 1800 us	Ignition is on	= TRUE -	1.5 sec continuous	2 Trips
			and Raw value of time period transmitted by HFM sensor in Bank 2	< 2200 us	Battery voltage Battery voltage	> 10.9 V < 655.34 V		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
MAF Sensor B2 - Airflow	P010B	**Path 4:** Comparison of Maximum Modelled and actual Air Mass Flow (Plausibility Check)	Measured MAF from bank 2 sensor	> (A) / (B) g/sec	Engine is rotating forwards	= TRUE -	25.5 sec continuous	2 Trips
			with (A) Maximum modelled MAF at throttle body	= calculated parameter g/sec	and Measured air mass flow sensor signal at bank 2 is invalid	= FALSE -		
			(B) Factor MAF sensor tolerance for min value	= 0.600006 factor	and			
					Delta mass flow between compressor and DK through Delta pressure is valid for bank2	= TRUE -		
					and			
					Air mass flow through throttle valve for MAF diagnosis is valid for bank 2	= TRUE -		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
	P010B	**Path 5:** Comparison of Minimum Modelled and actual Air Mass Flow (Plausibility Check)	Measured MAF from bank 2 sensor	< (C) / (D) g/sec	Engine is rotating forwards	= TRUE -	25.5 sec continuous	2 Trips
			with (A) Minimum modelled MAF at throttle body	= calculated parameter g/sec	and Measured air mass flow sensor signal at bank 2 is invalid	= FALSE -		
			(B) Factor MAF sensor tolerance for max value	= 1.970001 factor	and			
					Delta mass flow between compressor and DK through Delta pressure is valid for bank2	= TRUE -		
					and Air mass flow through throttle valve for MAF diagnosis is valid for bank 2	= TRUE -		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
MAF Sensor B1 - Temperature	P0113	Detects physical range check of Intake Air Temperature sensor - out of range high error when the intake air temperature falls above the threshold	Filtered Temperature value of the Intake Air Temperature sensor	> 122.76 deg C			2 sec continuous	2 Trips
					((Ratio of Desired upstream Throttle valve pressure to Ambient Pressure	> 1.2 -		
					Engine speed with low resolution)	> 3520 rpm		
					for time)	= 10 sec		
					No pending or confirmed DTCs	= see sheet inhibit table -		
					Basic enable conditions met	= see sheet enable tables -		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
	P0112	Detects physical range check of Intake Air Temperature sensor - out of range low error when the intake air temperature falls below the threshold	Intake air temperature	< -42.04 deg C	(		2 sec continuous	2 Trips
					(			
					Coolant temperature at engine output	>= -41.04 deg C		
					Cylinder air mass flow	<= 14.44444444 g/sec		
					Vehicle speed	<= 6.215040398 mph		
					)			
					for time	= 3 sec		
					OR			
					Starting value of downstream engine coolant temperature	> 142.96 deg C		
					)			
					No pending or confirmed DTCs	= see sheet inhibit table -		
					Basic enable conditions met	= see sheet enable tables -		
MAF Sensor B1 - Temperature	P0111	Cross check of Intake Air Temperature sensor during Cold start when difference between the intake air temperature and mean temperature value exceeding the minimum threshold	Difference between the minimum intake air temperature from start and mean temperature value from the temperature sensors	> 14.96 deg C	First engine start has happened	= FALSE -	continuous	2 trips
					Ignition is on	= TRUE -		
					for time	1 sec		
					Combustion engine is running	= TRUE -		
					(			
					Engine is in synchronised state and engine is rotating	= TRUE -		
					for time	1 sec		
					)			
					End of start is reached and engine is running	= TRUE -		
					(	= TRUE -		
					Ignition ON			
					for time	1 sec		
					)			
					(			
					Measured engine stop time	>= 28800 sec		
					(	= 1 -		
					Engine stop time is calculated and is correct			
					OR			
					Calculated engine stop time is a minimal value and overflow could be a reason	= 2 -		
					)			
					)			
					for time	< 3 sec		
					)			
					Block heater is activated	= FALSE -		
					Diagnosis is inhibited by other temperature sensor errors	= FALSE -		
					(			
					(			
					(			
					Combustion engine is running	= FALSE -		
					or			
					Combustion engine end of start is reached	= FALSE -		
					for time	>= 5 sec		
					)	-		
					Preliminary error with the coolant engine temperature sensor	= TRUE -		
					(			
					Difference between engine coolant temperature and mean temperature value from temperature sensors	> 14.96 deg C		
					OR	sec		
					Difference between mean temperature value from temperature sensors and engine coolant temperature	< 14.96 deg C		
					)			
					Engine coolant temperature sensor value	>= 49.96 deg C		
					)			
					for time	< 0 sec		
					)			
					or			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Combustion engine is running	= TRUE -		
					for time	>= 0 sec		
					)			
					No pending or confirmed DTCs	= see sheet inhibit table -		
					Basic enable conditions met	= see sheet enable tables -		
	P0111	Cross check of Intake Air Temperature sensor during Cold start when difference between the mean temperature value and intake air temperature exceeding the minimum threshold	Difference between mean temperature value from the temperature sensors and the minimum intake air temperature from start	> 14.96 deg C	First engine start has happened	= FALSE -	continuous	2 trips
					Ignition is on	= TRUE -		
					for time	1 sec		
					Combustion engine is running	= TRUE -		
					(			
					Engine is in synchronised state and engine is rotating	= TRUE -		
					for time	1 sec		
					)			
					End of start is reached and engine is running	= TRUE -		
					(			
					Ignition ON	= TRUE -		
					for time	1 sec		
					)			
					(			
					Measured engine stop time	>= 28800 sec		
					(			
					Engine stop time is calculated and is correct	= 1 -		
					OR			
					Calculated engine stop time is a minimal value and overflow could be a reason	= 1 -		
					)			
					)			
					for time	< 3 sec		
					)			
					Block heater is activated	= FALSE -		
					Diagnosis is inhibited by other temperature sensor errors	= FALSE -		
					(			
					(			
					(			
					Combustion engine is running	= FALSE -		
					or			
					Combustion engine end of start is reached	= FALSE -		
					for time	>= 5 sec		
					)	-		
					Preliminary error with the coolant engine temperature sensor	= TRUE -		
					(			
					Difference between engine coolant temperature and mean temperature value from temperature sensors	> 14.96 deg C		
					OR	sec		
					Difference between mean temperature value from temperature sensors and engine coolant temperature	< 14.96 deg C		
					)			
					Engine coolant temperature sensor value	>= 49.96 deg C		
					)			
					for time	< 0 sec		
					)			
					or			
					Combustion engine is running	= TRUE -		
					for time	>= 0 sec		
					)			
					No pending or confirmed DTCs	= see sheet inhibit table -		
					Basic enable conditions met	= see sheet enable tables -		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required			MIL Illum.
	P0111	Detection of stuck error of Intake Air Temperature sensor when the difference between the maximum and the minimum intake air temperature, since engine start is less than the calibrated threshold	Difference between the maximum and the minimum intake air temperature values	<	4.96	deg C	Engine coolant downstream temperature during the first engine start of the driving cycle	<=	49.96	deg C			continuous	2 Trips
							Counter for high-phases of intake air Temperature sensor	>=	2	counts				
							Conditions for intake air temperature sensor (high phases):	=	TRUE	-				
							(							
							(							
							Cylinder air mass flow	<	11.11111111	g/sec				
							Vehicle speed	<	12.4300808	mph				
							Engine coolant temperature	>	79.96	deg C				
							Integrated Air mass flow (see Look-Up-Table #P0111-1)	>	1000 to 20020	g				
							)							
							for time	>	60	sec				
							)							
							Counter for low-phases of intake air temperature sensor	>=	2	counts				
							Conditions for low intake air temperature (low phases):							
							(							
							(							
							Vehicle speed	>	49.72032318	mph				
							Cylinder air mass flow	>=	20	g/sec				
							Cylinder air mass flow	<=	42.22222222	g/sec				
							)							
							for time	>	60	sec				
							)							
							No pending or confirmed DTCs	=	see sheet inhibit table	-				
							Basic enable conditions met	=	see sheet enable tables	-				
MAF Sensor B1 - Temperature	P0114	Detects the max error of the Gradient for the intake air temperature sensor after air filter, Bank 1	Absolute difference etween raw and filtered temperature values from Intake air temperature sensor 1	>	10	deg C	Ignition ON	=	TRUE	-			continuous	2 Trips
			for time	>=	25	sec	No pending or confirmed DTCs	=	see sheet inhibit table	-				
							Basic enable conditions met	=	see sheet enable tables	-				
MAF Sensor B1 - Temperature	U1346	Detects Bus off error at LIN channel 2.	LIN channel 2 indicates bus off error	=	TRUE	-	Ignition is on	=	TRUE	-	10	counts	continuous	1 Trip
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enable conditions met	=	see sheet enable tables	-				
MAF Sensor B1 - Temperature	U0611	Detects when the time since the last message from the 'Intake Air Temperature Sensor Bank 1 Sensor 1 Module' for frame "MAF1_Rsp_TmpHum"(0x2A) was received via LIN 1 Channel is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the Intake Air Temperature Sensor Bank 1 Sensor 1 for frame "MAF1_Rsp_TmpHum"(0x2A) was received via LIN 2Channel	>	0.1	sec	Ignition is ON	=	TRUE	-	3	counts	Continuous	2 Trips
							Basic enable conditions met	=	see sheet enable tables	-				
MAF Sensor B1 - Temperature	U1370	Monitoring of Temperature Alive Rolling Counter (ARC) LIN signal of Mass Air Flow Sensor	Wrong alive rolling counter received by the frame "MAF1_Rsp_TmpHum" (0x2A) from MAF1 Temperature humidity signals received over LIN	=	TRUE	-	Status of DIO pin connected to the mass air flow sensor line is not grounded	=	TRUE	-	10	counts	continuous	2 Trips
							Basic enable conditions met	=	see sheet enable tables	-				
MAF Sensor B1 - Pressure	P222D	Monitoring of Barometric Pressure Sensor for Signal range Check - High	Raw value of upstream booster pressure sensor	>	115	kPa	(Raw value of pressure sensor signal upstream of compressor is valid)	=	TRUE	-	2	sec	continuous	2 Trips
							for time	>=	0.04	sec				
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enable conditions met	=	see sheet enable tables	-				

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required			MIL Illum.
MAF Sensor B1 - Pressure	P222C	Monitoring of Barometric Pressure Sensor for Signal range Check - Low	Raw value of upstream booster pressure sensor	<	50	kPa	(Raw value of pressure sensor signal upstream of compressor is valid)	=	TRUE	-	2	sec	continuous	2 Trips
							for time	>=	0.04	sec				
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enable conditions met	=	see sheet enable tables	-				
MAF Sensor B1 - Pressure	P222B	**Path 1:** Monitoring of Barometric Pressure Sensor for Rationality Check - High	Difference between raw value of upstream booster pressure sensor and ambient air pressure raw value measured	>	15	kPa	(Raw value of pressure sensor signal upstream of compressor is valid)	=	TRUE	-	2	sec	continuous	2 Trips
							for time	>=	0.04	sec				
							Pressure value from Ambient Pressure Sensor is valid	=	TRUE	-				
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enable conditions met	=	see sheet enable tables	-				
		Path 2: Monitoring of Barometric Pressure Sensor for Rationality Check - High during startup	Difference between raw value of upstream booster pressure sensor and maximal reference pressure for delta pressure sensordiagnoses	>	3.5313	kPa	Engine not in running state	=	TRUE	-	2	sec	once per driving cycle	2 Trips
							for time	>=	5	sec				
							ECU in drive state	=	TRUE	-				
							Pressure value from Ambient Pressure Sensor is valid	=	TRUE	-				
							Healing of ambient pressure sensor by delta pressure sensor	=	TRUE	-				
							Healing of manifold pressure sensor by delta pressure sensor	=	TRUE	-				
							Healing of pressure upstream of throttle sensor by delta pressure sensor	=	TRUE	-				
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enable conditions met	=	see sheet enable tables	-				
		Path 3: Monitoring of Barometric Pressure Sensor for Rationality Check - Low	Difference between raw value of upstream booster pressure sensor and minimal reference pressure for delta pressure sensordiagnoses	<	3.5313	kPa	Engine not in running state	=	TRUE	-	2	sec	continuous	2 Trips
							for time	>=	5	sec				
							ECU in drive state	=	TRUE	-				
							Healing of ambient pressure sensor by delta pressure sensor	=	TRUE	-				
							Healing of manifold pressure sensor by delta pressure sensor	=	TRUE	-				
							Healing of pressure upstream of throttle sensor by delta pressure sensor	=	TRUE	-				
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enable conditions met	=	see sheet enable tables	-				
MAF Sensor B1 - Pressure	U068A	Detects when the time since the last message from the 'Barometric Pressure Sensor Bank 1 Sensor 2 Module' for frame "MAF1_Rsp_Press"(0x2B) was received via LIN 1 Channel is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the Barometric Pressure Sensor Bank 1 Sensor 2 for frame "MAF1_Rsp_Press"(0x2B) was received via LIN 2 Channel	>	0.025	sec	Ignition is ON	=	TRUE	-	3	counts	Continuous	2 Trips
							Basic enable conditions met	=	see sheet enable tables	-				
MAF Sensor B1 - Pressure	U1371	Monitoring of Pressure Alive Rolling Counter (ARC) LIN signal of Mass Air Flow Sensor	Wrong alive rolling counter received by the frame "MAF1_Rsp_Press" (0x2B) from MAF1 Pressure signals received over LIN	=	TRUE	-	Status of DIO pin connected to the mass air flow sensor line is not grounded	=	TRUE	-	10	counts	continuous	2 Trips
							Basic enable conditions met	=	see sheet enable tables	-				

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 TEST GROUP: KGMXV04.2088 EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
MAF Sensor B2 - Temperature	P00AD	Detects physical range check of Intake Air Temperature sensor - out of range high error when the intake air temperature falls above the threshold	Filtered Temperature value of the Intake Air Temperature sensor	> 122.76 deg C			3 sec continuous	2 Trips
					(			
					(			
					Ratio of Desired upstream Throttle valve pressure to Ambient Pressure	> 1.2 -		
					Engine speed with low resolution	> 3520 rpm		
					)			
					for time	= 10 sec		
					)			
					No pending or confirmed DTCs	= see sheet inhibit table -		
					Basic enable conditions met	= see sheet enable tables -		
	P00AC	Detects physical range check of Intake Air Temperature sensor - out of range low error when the intake air temperature falls below the threshold	Intake air temperature	< -42.04 deg C			3 sec continuous	2 Trips
					(			
					Coolant temperature at engine output	>= -41.04 deg C		
					Cylinder air mass flow	<= 14.44444444 g/sec		
					Vehicle speed	<= 6.215040398 mph		
					)			
					for time	= 3 sec		
					OR			
					Starting value of downstream engine coolant temperature	> 142.96 deg C		
					No pending or confirmed DTCs	= see sheet inhibit table -		
					Basic enable conditions met	= see sheet enable tables -		
MAF Sensor B2 - Temperature	P00AB	Cross check of Intake Air Temperature sensor during Cold start when difference between the Intake air Temperature and mean temperature value exceeding the minimum threshold	Difference between the minimum intake air temperature from start and mean temperature value from the temperature sensors	> 14.96 deg C	First engine start has happened	= FALSE -	continuous	2 Trips
					Ignition is on	= TRUE -		
					for time	1 sec		
					Combustion engine is running	= TRUE -		
					(			
					Engine is in synchronised state and engine is rotating	= TRUE -		
					for time	= 1 sec		
					)			
					End of start is reached and engine is running	= TRUE -		
					(	= TRUE -		
					Ignition ON			
					for time	1 sec		
					)			
					(			
					Measured engine stop time	>= 28800 sec		
					(	= TRUE -		
					Engine stop time is calculated and is correct			
					OR			
					Calculated engine stop time is a minimal value and overflow could be a reason	= TRUE -		
					)			
					)			
					for time	< 3 sec		
					)			
					Block heater is activated	= FALSE -		
					Diagnosis is inhibited by other temperature sensor errors	= FALSE -		
					(			
					(			
					(			
					Combustion engine is running	= FALSE -		
					or			
					Combustion engine end of start is reached	= FALSE -		
					for time	>= 5 sec		
					)	-		
					Preliminary error with the coolant engine temperature sensor	= TRUE -		
					(			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Difference between engine coolant temperature and mean temperature value from temperature sensors	> 14.96 deg C		
					OR	sec		
					Difference between mean temperature value from temperature sensors and engine coolant temperature	< 14.96 deg C		
					)			
					Engine coolant temperature sensor value	>= 49.96 deg C		
					)			
					for time	< 0 sec		
					)			
					or			
					Combustion engine is running	= TRUE -		
					for time	>= 0 sec		
					)			
					No pending or confirmed DTCs	= see sheet inhibit table -		
					Basic enable conditions met	= see sheet enable tables -		
		Cross check of Intake Air Temperature sensor during Cold start when difference between the mean temperature value and Intake air temperature exceeding the minimum threshold	Difference between mean temperature value from the temperature sensors and the minimum intake air temperature from start	> 14.96 deg C	First engine start has happened	= FALSE -	continuous	2 Trips
					Ignition is on	= TRUE -		
					for time	1 sec		
					Combustion engine is running	= TRUE -		
					(			
					Engine is in synchronised state and engine is rotating	= TRUE -		
					for time	= 1 sec		
					)			
					End of start is reached and engine is running	= TRUE -		
					(	= TRUE -		
					Ignition ON			
					for time	1 sec		
					)			
					(			
					Measured engine stop time	>= 28800 sec		
					(	= TRUE -		
					Engine stop time is calculated and is correct			
					OR			
					Calculated engine stop time is a minimal value and overflow could be a reason	= TRUE -		
					)			
					)			
					for time	< 3 sec		
					)			
					Block heater is activated	= FALSE -		
					Diagnosis is inhibited by other temperature sensor errors	= FALSE -		
					(			
					(			
					(			
					Combustion engine is running	= FALSE -		
					or			
					Combustion engine end of start is reached	= FALSE -		
					for time	>= 5 sec		
					)	-		
					Preliminary error with the coolant engine temperature sensor	= TRUE -		
					(			
					Difference between engine coolant temperature and mean temperature value from temperature sensors	> 14.96 deg C		
					OR	sec		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Difference between mean temperature value from temperature sensors and engine coolant temperature)	< 14.96 deg C		
					Engine coolant temperature sensor value)	>= 49.96 deg C		
					for time) or	< 0 sec		
					Combustion engine is running	= TRUE -		
					for time)	>= 0 sec		
					No pending or confirmed DTCs	= see sheet inhibit table -		
					Basic enable conditions met	= see sheet enable tables -		
		Detection of stuck error of Intake Air Temperature sensor when the difference between the maximum and the minimum Intake air Temperature, since engine start is less than the calibrated threshold	Difference between the maximum and the minimum intake air temperature values	< 4.96 deg C	Engine coolant downstream temperature during the first engine start of the driving cycle	<= 49.96 deg C	continuous	2 Trips
					Counter for high-phases of intake air Temperature sensor	>= 2 counts		
					Conditions for intake air temperature sensor (high phases): ((	= TRUE -		
					Cylinder air mass flow	< 11.11111111 g/sec		
					Vehicle speed	< 12.4300808 mph		
					Engine coolant temperature	> 79.96 deg C		
					Integrated Air mass flow (see Look-Up-Table #P00AB-1))	> 1000 to 20020 g		
					for time)	> 60 sec		
					Counter for low-phases of intake air temperature sensor	>= 2 counts		
					Conditions for low intake air temperature (low phases) ((			
					Vehicle speed	> 49.72032318 mph		
					Cylinder air mass flow	>= 20 g/sec		
					Cylinder air mass flow)	<= 42.22222222 g/sec		
					for time)	> 60 sec		
					No pending or confirmed DTCs	= see sheet inhibit table -		
					Basic enable conditions met	= see sheet enable tables -		
MAF Sensor B2 - Temperature	P00AE	Detects the max error of the Gradient for the intake air temperature sensor after air filter, Bank 2	Absolute difference etween raw and filtered temperature values from Intake air temperature sensor 3	> 10 deg C	Ignition ON	= TRUE -	continuous	2 Trips
			for time	>= 25 sec	No pending or confirmed DTCs	= see sheet inhibit table -		
					Basic enable conditions met	= see sheet enable tables -		
MAF Sensor B2 - Temperature	U1349	Detects Bus off error at LIN channel 5.	LIN channel 5 indicates bus off error	= TRUE -	Ignition is on	= TRUE -	10 counts continuous	1 Trip
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
MAF Sensor B2 - Temperature	U0612	Detects when the time since the last message from the 'Intake Air Temperature Sensor Bank 1 Sensor 1 Module' for frame "MAF2_Rsp_TmpHum"(0x2A) was received via LIN 1 Channel is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the Intake Air Temperature Sensor Bank 1 Sensor 1 for frame "MAF2_Rsp_TmpHum"(0x2A) was received via LIN 5 Channel	> 0.1 sec	Ignition is ON	= TRUE -	3 counts Continuous	2 Trips
					Basic enable conditions met	= see sheet enable tables -		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required			MIL Illum.
MAF Sensor B2 - Temperature	U1372	Monitoring of Temperature Alive Rolling Counter (ARC) LIN signal of Mass Air Flow Sensor 2	Wrong alive rolling counter received by the frame "MAF2_Rsp_TmpHum" (0x2A) from MAF2 Temperature humidity signals received over LIN	=	TRUE	-	Status of DIO pin connected to the mass air flow sensor line bank 2 is not grounded	=	TRUE	-	10	counts	continuous	2 Trips
							Basic enable conditions met	=	see sheet enable tables	-				
MAF Sensor B2 - Pressure	P227D	Monitoring of Barometric Pressure Sensor for Signal range Check - High	Raw value of second upstream booster pressure sensor	>	115	kPa	(Raw value of second pressure sensor signal upstream of compressor is valid)	=	TRUE	-	2	sec	continuous	2 Trips
							for time	>=	0.04	sec				
							and							
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enable conditions met	=	see sheet enable tables	-				
MAF Sensor B2 - Pressure	P227C	Monitoring of Barometric Pressure Sensor for Signal range Check - Low	Raw value of second upstream booster pressure sensor	<	50	kPa	(Raw value of second pressure sensor signal upstream of compressor is valid)	=	TRUE	-	2	sec	continuous	2 Trips
							for time	>=	0.04	sec				
							and							
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enable conditions met	=	see sheet enable tables	-				
MAF Sensor B2 - Pressure	P227B	**Path 1:** Monitoring of Barometric Pressure Sensor for Rationality Check - High	Difference between raw value of second upstream booster pressure sensor and ambient air pressure raw value measured	>	15	kPa	(Raw value of second pressure sensor signal upstream of compressor is valid)	=	TRUE	-	2	sec	continuous	2 Trips
							for time	>=	0.04	sec				
							Pressure value from Ambient Pressure Sensor is valid	=	TRUE	-				
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enable conditions met	=	see sheet enable tables	-				
		Path 2: Monitoring of Barometric Pressure Sensor for Rationality Check - High during startup	Difference between raw value of second upstream booster pressure sensor and maximal reference pressure for delta pressure sensordiagnoses	>	3.5313	kPa	Engine not in running state	=	TRUE	-	2	sec	once per driving cycle	2 Trips
							for time	>=	5	sec				
							ECU in drive state	=	TRUE	-				
							Pressure value from Ambient Pressure Sensor is valid	=	TRUE	-				
							Healing of ambient pressure sensor by delta pressure sensor	=	TRUE	-				
							Healing of manifold pressure sensor by delta pressure sensor	=	TRUE	-				
							Healing of pressure upstream of throttle sensor by delta pressure sensor	=	TRUE	-				
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enable conditions met	=	see sheet enable tables	-				
		Path 3: Monitoring of Barometric Pressure Sensor for Rationality Check - Low	Difference between raw value of second upstream booster pressure sensor and minimal reference pressure for delta pressure sensordiagnoses	<	3.5313	kPa	Engine not in running state	=	TRUE	-	2	sec	continuous	2 Trips
							for the time	>=	5	sec				
							ECU in drive state	=	TRUE	-				
							Healing of ambient pressure sensor by delta pressure sensor	=	TRUE	-				
							Healing of manifold pressure sensor by delta pressure sensor	=	TRUE	-				
							Healing of pressure upstream of throttle sensor by delta pressure sensor	=	TRUE	-				
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Basic enable conditions met	= see sheet enable tables -		
MAF Sensor B2 - Pressure	U0680	Detects when the time since the last message from the 'Barometric Pressure Sensor Bank 1 Sensor 2 Module' for frame "MAF2_Rsp_Press"(0x2B) was received via LIN 1 Channel is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the Barometric Pressure Sensor Bank 1 Sensor 2 for frame "MAF2_Rsp_Press"(0x2B) was received via LIN 5 Channel	> 0.025 sec	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	3 counts Continuous	2 Trips
MAF Sensor B2 - Pressure	U1373	Monitoring of Pressure Alive Rolling Counter (ARC) LIN signal of Mass Air Flow Sensor 2	Wrong alive rolling counter received by the frame "MAF2_Rsp_Press" (0x2B) from MAF2 Pressure signals received over LIN	= TRUE -	Status of DIO pin connected to the mass air flow sensor line bank 2 is not grounded Basic enable conditions met	= TRUE - = see sheet enable tables -	10 counts continuous	2 Trips
Intake Air Temperature 2 - B1	P0098	Detects signal range check of Intake Air Temperature sensor - out of range high when the voltage of the intake air temperature sensor is greater than the calibrated threshold	Intake air temperature sensor voltage	> 4.7994 V	(Engine coolant temperature Air mass flow Vehicle speed) for time OR Engine coolant temperature at engine start Basic enable conditions met	 >= -41.04 deg C <= 14.44444444 g/sec <= 6.215040398 mph = 3 sec > 142.96 deg C = See sheet enable tables -	2 sec continuous	2 Trips
	P0097	Detects signal range check of Intake Air Temperature sensor - out of range low when the voltage of the intake air temperature sensor is less than the calibrated threshold	Intake air temperature sensor voltage	< 0.195 V	(Ratio of modelled boost pressure to ambient pressure OR Engine speed) for time Basic enable conditions met	 <= 1.2 - <= 3520 rpm = 120 sec = See sheet enable tables -	2 sec continuous	2 Trips
Intake Air Temperature 2 - B1	P0096	Cross check of Intake Air Temperature sensor during Cold start when difference between the minimum intake air temperature and mean temperature value exceeding the minimum threshold	Difference between the minimum intake air temperature from start and mean temperature value from the temperature sensors	> 14.96 deg C	First engine start has happened Ignition ON for time Combustion engine is running (Engine is in synchronised state and engine is rotating for time) Engine start is finished (*) (Ignition ON for time) (Engine off time (Engine stop time is calculated and is correct OR Calculated engine stop time is a minimal value and overflow could be a reason)) for time) Block heater is activated	= FALSE - = TRUE - 1 sec = TRUE - = TRUE - 1 sec = TRUE - = TRUE - 1 sec >= 28800 sec = TRUE - = TRUE - < 3 sec = FALSE -	continuous	2 Trips

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 — TEST GROUP: KGMXV04.2088 — EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Diagnosis is inhibited by other temperature sensor errors	= FALSE -		
					(			
					(			
					(			
					Combustion engine is running	= FALSE -		
					or			
					Engine start is finished (*)	= FALSE -		
					for time	>= 5 sec		
					)	-		
					Preliminary error with the coolant engine temperature sensor	= TRUE -		
					(			
					Difference between engine coolant temperature and mean temperature value from temperature sensors	> 14.96 deg C		
					OR			
					Difference between mean temperature value from temperature sensors and engine coolant temperature	< 14.96 deg C		
					)			
					Engine coolant temperature	>= 49.96 deg C		
					)			
					for time	< 0 sec		
					)			
					or			
					Combustion engine is running	= TRUE -		
					for time	>= 0 sec		
					)			
					No pending or confirmed DTCs	= See sheet inhibit table -		
					Basic enable conditions met	= See sheet enable tables -		
		Cross check of Intake Air Temperature sensor during Cold start when difference between the mean temperature value and Intake air temperature exceeding the minimum threshold	Difference between mean temperature value from the temperature sensors and the minimum intake air temperature from start	> 14.96 deg C	First engine start has happened	= FALSE -	continuous	2 Trips
					Ignition ON	= TRUE -		
					for time	1 sec		
					Combustion engine is running	= TRUE -		
					(			
					Engine is in synchronised state and engine is rotating	= TRUE -		
					for time	1 sec		
					)			
					Engine start is finished (*)	= TRUE -		
					(	= TRUE -		
					Ignition ON			
					for time	1 sec		
					)			
					(			
					Engine off time	>= 28800 sec		
					(	= TRUE -		
					Engine stop time is calculated and is correct			
					OR			
					Calculated engine stop time is a minimal value and overflow could be a reason	= TRUE -		
					)			
					)			
					for time	< 3 sec		
					)			
					Block heater is activated	= FALSE -		
					Diagnosis is inhibited by other temperature sensor errors	= FALSE -		
					(			
					(			
					(			
					Combustion engine is running	= FALSE -		
					or			
					Engine start is finished (*)	= FALSE -		
					for time	>= 5 sec		
					)	-		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Preliminary error with the coolant engine temperature sensor	= TRUE -		
					(			
					Difference between engine coolant temperature and mean temperature value from temperature sensors	> 14.96 deg C		
					OR			
					Difference between mean temperature value from temperature sensors and engine coolant temperature	< 14.96 deg C		
					)			
					Engine coolant temperature	>= 49.96 deg C		
					)			
					for time	< 0 sec		
					)			
					or			
					Combustion engine is running	= TRUE -		
					for time	>= 0 sec		
					)			
					No pending or confirmed DTCs	= See sheet inhibit table -		
					Basic enable conditions met	= See sheet enable tables -		
		Detection of stuck error of Intake Air Temperature sensor when the difference between the maximum and the minimum Intake air Temperature since engine start is less than the calibrated threshold	Difference between the maximum and the minimum intake air temperature values	< 4.96 deg C	Engine coolant downstream temperature during the first engine start of the driving cycle	<= 49.96 deg C	continuous	2 Trips
					Counter for high-phases of intake air Temperature sensor	>= 2 counts		
					Conditions for intake air temperature sensor (high phases):	= TRUE -		
					(			
					(			
					Air mass flow	< 11.11111111 g/sec		
					Vehicle speed	< 12.4300808 mph		
					Engine coolant temperature	> 79.96 deg C		
					Integrated Air mass flow (See Look-Up Table #P0096-1)	> 1000 to 20020 g		
					)			
					for time	> 60 sec		
					)			
					Counter for low-phases of intake air temperature sensor	>= 2 counts		
					Conditions for low intake air temperature (low phases)			
					(			
					(			
					Vehicle speed	> 49.72032318 mph		
					Air mass flow	>= 20 g/sec		
					Air mass flow	<= 42.22222222 g/sec		
					)			
					for time	> 60 sec		
					)			
					No pending or confirmed DTCs	= See sheet inhibit table -		
					Basic enable conditions met	= See sheet enable tables -		
	P0099	Detects electrical error (non plausible signal) of Intake Air Temperature sensor when the difference between raw voltage signal and filtered voltage signal of intake air temperature sensor exceeds the calibrated threshold	Absolute value of difference between raw voltage signal of Intake air temperature sensor and filtered voltage signal of Intake air temperature sensor	> 0.12 V	No errors with signal range detected in Intake air temperature sensor		20 sec continuous	2 Trips
					(			
					Signal Range check : out of range low error for intake air temperature sensor	= FALSE -		
					Signal Range check : out of range high error for intake air temperature sensor	= FALSE -		
					)			
					Basic enable conditions met	= See sheet enable tables -		
Intake Air Temperature 2 - B2	P00A8	Detects signal range check of Intake Air Temperature sensor - out of range high when the voltage of the intake air temperature sensor is greater than the calibrated threshold	Intake air temperature sensor voltage	> 4.7994 V	(		2 sec continuous	2 Trips
					Engine coolant temperature	>= -41.04 deg C		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Air mass flow	<= 14.44444444 g/sec		
					Vehicle speed	<= 6.215040398 mph		
					)			
					for time	= 3 sec		
					OR			
					Engine coolant temperature at engine start	> 142.96 deg C		
					Basic enable conditions met	= See sheet enable tables -		
	P00A7	Detects signal range check of Intake Air Temperature sensor - out of range low when the voltage of the intake air temperature sensor is less than the calibrated threshold	Intake air temperature sensor voltage	< 0.195 V	(		2 sec continuous	2 Trips
					Ratio of modelled boost pressure to ambient pressure	<= 1.2 -		
					OR			
					Engine speed	<= 3520 rpm		
					)			
					for time	= 120 sec		
					Basic enable conditions met	= See sheet enable tables -		
Intake Air Temperature 2 - B2	P00A6	Cross check of Intake Air Temperature sensor in intake manifold during Cold start when difference between the Intake air Temperature and mean temperature value exceeding the minimum threshold	Difference between the minimum intake air temperature from start and mean temperature value from the temperature sensors	> 14.96 deg C	First engine start has happened	= FALSE -	continuous	2 Trips
					Ignition ON	= TRUE -		
					for time	1 sec		
					Combustion engine is running	= TRUE -		
					(			
					Engine is in synchronised state and engine is rotating	= TRUE -		
					for time	= 1 sec		
					)			
					Engine start is finished (*)	= TRUE -		
					(	= TRUE -		
					Ignition ON			
					for time	1 sec		
					)			
					(			
					Engine off time	>= 28800 sec		
					(	= 1 -		
					Engine stop time is calculated and is correct			
					OR			
					Calculated engine stop time is a minimal value and overflow could be a reason	= 1 -		
					)			
					)			
					for time	< 3 sec		
					)			
					Block heater is activated	= FALSE -		
					Diagnosis is inhibited by other temperature sensor errors	= FALSE -		
					(			
					(			
					(			
					Combustion engine is running	= FALSE -		
					or			
					Engine start is finished (*)	= FALSE -		
					for time	>= 5 sec		
					)	-		
					Preliminary error with the coolant engine temperature sensor	= TRUE -		
					(			
					Difference between engine coolant temperature and mean temperature value from temperature sensors	> 14.96 deg C		
					OR			
					Difference between mean temperature value from temperature sensors and engine coolant temperature	< 14.96 deg C		
					)			
					Engine coolant temperature	>= 49.96 deg C		
					)			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					for time	<	0	sec		
					)					
					or					
					Combustion engine is running	=	TRUE	-		
					for time	>=	0	sec		
					)					
					No pending or confirmed DTCs	=	See sheet inhibit table	-		
					Basic enable conditions met	=	See sheet enable tables	-		
		Cross check of Intake Air Temperature sensor in intake manifold during Cold start when difference between the mean temperature value and Intake air temperature exceeding the minimum threshold	Difference between mean temperature value from the temperature sensors and the minimum intake air temperature from start	> 14.96 deg C	First engine start has happened	=	FALSE	-	continuous	2 Trips
					Ignition ON	=	TRUE	-		
					for time		1	sec		
					Combustion engine is running	=	TRUE	-		
					(					
					Engine is in synchronised state and engine is rotating	=	TRUE	-		
					for time	=	1	sec		
					)					
					Engine start is finished (*)	=	TRUE	-		
					(	=	TRUE	-		
					Ignition ON					
					for time		1	sec		
					)					
					(					
					Engine off time	>=	28800	sec		
					(	=	1	-		
					Engine stop time is calculated and is correct					
					OR					
					Calculated engine stop time is a minimal value and overflow could be a reason	=	1	-		
					)					
					)					
					for time	<	3	sec		
					)					
					Block heater is activated	=	FALSE	-		
					Diagnosis is inhibited by other temperature sensor errors	=	FALSE	-		
					(					
					(					
					(					
					Combustion engine is running	=	FALSE	-		
					or					
					Engine start is finished (*)	=	FALSE	-		
					for time	>=	5	sec		
					)			-		
					Preliminary error with the coolant engine temperature sensor	=	TRUE	-		
					(					
					Difference between engine coolant temperature and mean temperature value from temperature sensors	>	14.96	deg C		
					OR					
					Difference between mean temperature value from temperature sensors and engine coolant temperature	<	14.96	deg C		
					)					
					Engine coolant temperature	>=	49.96	deg C		
					)					
					for time	<	0	sec		
					)					
					or					
					Combustion engine is running	=	TRUE	-		
					for time	>=	0	sec		
					)					
					No pending or confirmed DTCs	=	See sheet inhibit table	-		
					Basic enable conditions met	=	See sheet enable tables	-		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
		Detection of stuck error of Intake Air Temperature sensor in intake manifold when the difference between the maximum and the minimum Intake air Temperature, since engine start is less than the calibrated threshold	Difference between the maximum and the minimum intake air temperature values	< 4.96 deg C	Engine coolant downstream temperature during the first engine start of the driving cycle Counter for high-phases of intake air Temperature sensor Conditions for intake air temperature sensor (high phases): ((Air mass flow Vehicle speed Engine coolant temperature Integrated Air mass flow (See Look-Up Table #P00A6-1)) for time) Counter for low-phases of intake air temperature sensor Conditions for low intake air temperature (low phases) ((Vehicle speed and Air mass flow Air mass flow) for time) No pending or confirmed DTCs Basic enable conditions met	<= 49.96 deg C >= 2 counts = TRUE - < 11.11111111 g/sec < 12.4300808 mph > 79.96 deg C > 1000 to 20020 g > 60 sec >= 2 counts > 49.72032318 mph >= 20 g/sec <= 42.22222222 g/sec > 60 sec = See sheet inhibit table - = See sheet enable tables -	continuous	2 Trips
	P00A9	Detects electrical error (non plausible signal) of Intake Air Temperature sensor when the difference between raw voltage signal and filtered voltage signal of intake air temperature sensor exceeds the calibrated threshold	Absolute value of difference between raw voltage signal of Intake air temperature sensor and filtered voltage signal of Intake air temperature sensor	> 0.12 V	No errors with signal range detected in Intake air temperature sensor (Signal Range check : out of range low error for intake air temperature sensor P00A7 Signal Range check : out of range high error for intake air temperature sensor P00A8) Basic enable conditions met	 = FALSE - = FALSE - = See sheet enable tables -	20 sec continuous	2 Trips
Battery Sensor (External Sensor) - Internal Temperature	P16DF	**Path 1:** Diagnosis of Battery Monitor Internal Temperature circuit high fault - Historical	Communication message indicating Battery Module Raw temperatue sensor 1 Communication message indicating historical temperature data down counter Communication message indicating historical temperature data down counter	< -43 degC > 0 - <= 24 -	Battery Monitor module diagnosis is active, which is the following conditions: (Battery voltage Condition general function request Intelligent Battery Sensor (IBS) communication is active Communication fault is active) No pending or confirmed DTCs Basic enable conditions met	= TRUE - > 10.9 V = FALSE - = TRUE - = FALSE - = see sheet inhibit tables - = see sheet enable tables -	40 counts continuous	2 Trips
		Path 2: Diagnosis of Battery Monitor Internal Temperature circuit high fault - Continuous	Communication message indicating Battery Module Raw temperatue sensor 1 Communication message indicating historical temperature data down counter	< -43 degC = 0 -	Battery Monitor module diagnosis is active, which is the following conditions: (Battery voltage Condition general function request Intelligent Battery Sensor (IBS) communication is active Communication fault is active) No pending or confirmed DTCs	= TRUE - > 10.9 V = FALSE - = TRUE - = FALSE - = see sheet inhibit tables -	40 counts continuous	2 Trips

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Basic enable conditions met	= see sheet enable tables -		
Done check Debounce Params	P16DE	**Path 1:** Diagnosis of Battery Monitor Internal Temperature circuit low fault - Historical	Communication message indicating Battery Module Raw temperatue sensor 1 Communication message indicating historical temperature data down counter Communication message indicating historical temperature data down counter	> 120 degC > 0 - <= 24 -	Battery Monitor module diagnosis is active, which is the following conditions: (Battery voltage Condition general function request Intelligent Battery Sensor (IBS) communication is active Communication fault is active) No pending or confirmed DTCs Basic enable conditions met	= TRUE - > 10.9 V = FALSE - = TRUE - = FALSE - = see sheet inhibit tables - = see sheet enable tables -	40 counts continuous	2 Trips
		Path 2: Diagnosis of Battery Monitor Internal Temperature circuit low fault - Continuous	Communication message indicating Battery Module Raw temperatue sensor 1 Communication message indicating historical temperature data down counter	> 120 degC = 0 -	Battery Monitor module diagnosis is active, which is the following conditions: (Battery voltage Condition general function request Intelligent Battery Sensor (IBS) communication is active Communication fault is active) No pending or confirmed DTCs Basic enable conditions met	= TRUE - > 10.9 V = FALSE - = TRUE - = FALSE - = see sheet inhibit tables - = see sheet enable tables -	40 counts continuous	2 Trips
Done, check debounce parameters	P100D	Diagnosis of Battery Monitor Module for Internal Temperature Erratic behavior	Maximum completed String Length for the NTC raw temperature Counter for the Internal Temperature samples Communication message indicating historical temperature data down counter	> 70 degC > 10 - = 0 -	Battery Monitor module diagnosis is active, which is the following conditions: (Battery voltage Condition general function request Intelligent Battery Sensor (IBS) communication is active Communication fault is active) No pending or confirmed DTCs Basic enable conditions met	= TRUE - > 10.9 V = FALSE - = TRUE - = FALSE - = see sheet inhibit tables - = see sheet enable tables -	5 counts continuous	2 Trips
Lost Communication With Battery Sensor Module	U01B0	Detects when the time since the last message from the "Battery Sensor Module" for frame "IBSAmpHourChg"(0x18) was received via LIN 1 Channel is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the "Battery Sensor Module" for frame "IBSAmpHourChg"(0x18) was received via LIN 1 Channel	> 0.5 sec	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	3 counts Continuous	2 Trips
	U01B0	Detects when the time since the last message from the "Battery Sensor Module" for frame "IBSAmpHourDisChrg" (0x19) was received via LIN 1 Channel is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the "Battery Sensor Module" for frame "IBSAmpHourDisChrg" (0x19) was received via LIN 1 Channel	> 0.5 sec	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	3 counts Continuous	2 Trips
	U01B0	Detects when the time since the last message from the "Battery Sensor Module" for frame "IBSCalcData"(0x16) was received via LIN 1 Channel is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the "Battery Sensor Module" for frame "IBSCalcData"(0x16) was received via LIN 1 Channel	> 0.5 sec	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	3 counts Continuous	2 Trips
	U01B0	Detects when the time since the last message from the "Battery Sensor Module" for frame "IBSCfgDataRtn"(0x1E) was received via LIN 1 Channel is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the "Battery Sensor Module" for frame "IBSCfgDataRtn"(0x1E) was received via LIN 1 Channel	> 1 sec	Ignition is ON	= TRUE -	3 counts Continuous	2 Trips

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Basic enable conditions met	= see sheet enable tables -		
	U01B0	Detects when the time since the last message from the "Battery Sensor Module" for frame "IBSCurrentFOMData" (0x1A) was received via LIN 1 Channel is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the "Battery Sensor Module" for frame "IBSCurrentFOMData" (0x1A) was received via LIN 1 Channel	> 2 sec	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	3 counts Continuous	2 Trips
	U01B0	Detects when the time since the last message from the "Battery Sensor Module" for frame "IBSFOMData" (0x1C) was received via LIN 1 Channel is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the "Battery Sensor Module" for frame "IBSFOMData" (0x1C) was received via LIN 1 Channel	> 2 sec	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	3 counts Continuous	2 Trips
	U01B0	Detects when the time since the last message from the "Battery Sensor Module" for frame "IBSMeasuredTemp" (0x17) was received via LIN 1 Channel is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the "Battery Sensor Module" for frame "IBSMeasuredTemp" (0x17) was received via LIN 1 Channel	> 0.25 sec	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	3 counts Continuous	2 Trips
	U01B0	Detects when the time since the last message from the "Battery Sensor Module" for frame "IBSMVIData" (0x15) was received via LIN 1 Channel is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the "Battery Sensor Module" for frame "IBSMVIData"(0x15) was received via LIN 1 Channel	> 0.25 sec	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	3 counts Continuous	2 Trips
	U01B0	Detects when the time since the last message from the "Battery Sensor Module" for frame "IBSVehStartData"(0x1D) was received via LIN 1 Channel is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the "Battery Sensor Module" for frame "IBSVehStartData"(0x1D) was received via LIN 1 Channel	> 0.5 sec	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	3 counts Continuous	2 Trips
	U01B0	Detects when the time since the last message from the "Battery Sensor Module" for frame "IBSVoltageFOMData"(0x1B) was received via LIN 1 Channel is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the "Battery Sensor Module" for frame "IBSVoltageFOMData"(0x1B) was received via LIN 1 Channel	> 2 sec	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	3 counts Continuous	2 Trips
Battery Monitor Sensor Signal Message Counter Incorrect	U04B1	Detects when wrong alive rolling counter received by the frame IBSAmpHourChg(0x18) in LIN1 channel from Battery Monitor Sensor module	Wrong alive rolling counter received by the frame IBSAmpHourChg(0x18) in LIN1 channel from Battery Monitor Sensor module	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	10 counts Continuous	2 Trips
	U04B1	Detects when wrong alive rolling counter received by the frame IBSAmpHourDisChrg(0x19) in LIN1 channel from Battery Monitor Sensor module	Wrong alive rolling counter received by the frame IBSAmpHourDisChrg(0x19) in LIN1 channel from Battery Monitor Sensor module	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	10 counts Continuous	2 Trips
	U04B1	Detects when wrong alive rolling counter received by the frame IBSCalcData(0x16) in LIN1 channel from Battery Monitor Sensor module	Wrong alive rolling counter received by the frame IBSCalcData(0x16) in LIN1 channel from Battery Monitor Sensor module	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	10 counts Continuous	2 Trips
	U04B1	Detects when wrong alive rolling counter received by the frame IBSCfgDataRtn(0x1E) in LIN1 channel from Battery Monitor Sensor module	Wrong alive rolling counter received by the frame IBSCfgDataRtn(0x1E) in LIN1 channel from Battery Monitor Sensor module	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	10 counts Continuous	2 Trips

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Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required			MIL Illum.
	U04B1	Detects when wrong alive rolling counter received by the frame IBSCurrentFOMData(0x1A) in LIN1 channel from Battery Monitor Sensor module	Wrong alive rolling counter received by the frame IBSCurrentFOMData(0x1A) in LIN1 channel from Battery Monitor Sensor module	=	TRUE	-	Ignition is ON	=	TRUE	-	10	counts	Continuous	2 Trips
							Basic enable conditions met	=	see sheet enable tables	-				
	U04B1	Detects when wrong alive rolling counter received by the frame IBSFOMData(0x1C) in LIN1 channel from Battery Monitor Sensor module	Wrong alive rolling counter received by the frame IBSFOMData(0x1C) in LIN1 channel from Battery Monitor Sensor module	=	TRUE	-	Ignition is ON	=	TRUE	-	10	counts	Continuous	2 Trips
							Basic enable conditions met	=	see sheet enable tables	-				
	U04B1	Detects when wrong alive rolling counter received by the frame IBSMeasuredTemp(0x17) in LIN1 channel from Battery Monitor Sensor module	Wrong alive rolling counter received by the frame IBSMeasuredTemp(0x17) in LIN1 channel from Battery Monitor Sensor module	=	TRUE	-	Ignition is ON	=	TRUE	-	10	counts	Continuous	2 Trips
							Basic enable conditions met	=	see sheet enable tables	-				
	U04B1	Detects when wrong alive rolling counter received by the frame IBSMVIData(0x15) in LIN1 channel from Battery Monitor Sensor module	Wrong alive rolling counter received by the frame IBSMVIData(0x15) in LIN1 channel from Battery Monitor Sensor module	=	TRUE	-	Ignition is ON	=	TRUE	-	10	counts	Continuous	2 Trips
							Basic enable conditions met	=	see sheet enable tables	-				
	U04B1	Detects when wrong alive rolling counter received by the frame IBSVehStartData(0x1D) in LIN1 channel from Battery Monitor Sensor module	Wrong alive rolling counter received by the frame IBSVehStartData(0x1D) in LIN1 channel from Battery Monitor Sensor module	=	TRUE	-	Ignition is ON	=	TRUE	-	10	counts	Continuous	2 Trips
							Basic enable conditions met	=	see sheet enable tables	-				
	U04B1	Detects when wrong alive rolling counter received by the frame IBSVoltageFOMData(0x1B) in LIN1 channel from Battery Monitor Sensor module	Wrong alive rolling counter received by the frame IBSVoltageFOMData(0x1B) in LIN1 channel from Battery Monitor Sensor module	=	TRUE	-	Ignition is ON	=	TRUE	-	10	counts	Continuous	2 Trips
							Basic enable conditions met	=	see sheet enable tables	-				
Battery Sensor (External Sensor) - Temperature	P058E	**Path 1:** Diagnosis Battery Monitor Module Temperature Out Of Range High - Historical	Communication message indicating Battery Module Raw temperature sensor 2	>	120	degC	Battery Monitor module diagnosis is active, which is the following conditions:	=	TRUE	-	40	counts	continuous	2 Trips
			Communication message indicating historical temperature data down counter	>	0	-	(							
			Communication message indicating historical temperature data down counter	<=	24	-	Battery voltage	>	10.9	V				
							Condition general function request	=	FALSE	-				
							Intelligent Battery Sensor (IBS) communication is active	=	TRUE	-				
							Communication fault is active	=	FALSE	-				
							)							
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enable conditions met	=	see sheet enable tables	-				
		Path 2: Diagnosis Battery Monitor Module Temperature Out Of Range High - Continuous	Communication message indicating Battery Module Raw temperatue sensor 2	>	120	degC	Battery Monitor module diagnosis is active, which is the following conditions:	=	TRUE	-	40	counts	continuous	2 Trips
			Communication message indicating historical temperature data down counter	=	0	-	(							
							Battery voltage	>	10.9	V				
							Condition general function request	=	FALSE	-				
							Intelligent Battery Sensor (IBS) communication is active	=	TRUE	-				
							Communication fault is active	=	FALSE	-				
							)							
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enable conditions met	=	see sheet enable tables	-				
Done, check debounce	P058F	**Path 1:** Diagnosis of Battery Monitor Module Temperature Out Of Range Low - Historical	Communication message indicating Battery Module Raw temperatue sensor 2	<	-43	degC	Battery Monitor module diagnosis is active, which is the following conditions:	=	TRUE	-	40	counts	continuous	2 Trips
			Communication message indicating historical temperature data down counter	>	0	-	(							
			Communication message indicating historical temperature data down counter	<=	24	-	Battery voltage	>	10.9	V				

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OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Condition general function request Intelligent Battery Sensor (IBS) communication is active Communication fault is active) No pending or confirmed DTCs Basic enable conditions met	= FALSE - = TRUE - = FALSE - = see sheet inhibit tables - = see sheet enable tables -		
		Path 2: Diagnosis of Battery Monitor Module Temperature Out Of Range Low - Continuous	Communication message indicating Battery Module Raw temperatue sensor 2 Communication message indicating historical temperature data down counter	< -43 degC = 0 -	Battery Monitor module diagnosis is active, which is the following conditions: (Battery voltage Condition general function request Intelligent Battery Sensor (IBS) communication is active Communication fault is active) No pending or confirmed DTCs Basic enable conditions met	= TRUE - > 10.9 V = FALSE - = TRUE - = FALSE - = see sheet inhibit tables - = see sheet enable tables -	40 counts continuous	2 Trips
Done, check debounce	P100C	Diagnosis of Battery Monitor Module for Temperature Erratic behavior	Maximum completed String Length for the ASIC internal raw temperature Counter for the Temperature samples Communication message indicating historical temperature data down counter	> 70 degC > 10 - = 0 -	Battery Monitor module diagnosis is active, which is the following conditions: (Battery voltage Condition general function request Intelligent Battery Sensor (IBS) communication is active Communication fault is active) No pending or confirmed DTCs Basic enable conditions met	= TRUE - > 10.9 V = FALSE - = TRUE - = FALSE - = see sheet inhibit tables - = see sheet enable tables -	5 counts continuous	2 Trips
done	P058C	**Path 1:** Diagnosis of Battery Monitor Module Temperature Monitoring performance - Historical	Absolute difference between the IBS NTC Raw Temperature and the IBS ASIC Raw Temperature Communication message indicating historical temperature data down counter Communication message indicating historical temperature data down counter	> 10 degC > 0 - <= 24 -	Battery Monitor module diagnosis is active, which is the following conditions: (Battery voltage Condition general function request Intelligent Battery Sensor (IBS) communication is active Communication fault is active) No pending or confirmed DTCs Basic enable conditions met	= TRUE - > 10.9 V = FALSE - = TRUE - = FALSE - = see sheet inhibit tables - = see sheet enable tables -	40 counts continuous	2 Trips
		Path 2: Diagnosis of Battery Monitor Module Temperature Monitoring performance - Continuous	Absolute difference between the IBS NTC Raw Temperature and the IBS ASIC Raw Temperature Communication message indicating historical temperature data down counter	> 10 degC = 0 -	Battery Monitor module diagnosis is active, which is the following conditions: (Battery voltage Condition general function request Intelligent Battery Sensor (IBS) communication is active Communication fault is active) No pending or confirmed DTCs Basic enable conditions met	= TRUE - > 10.9 V = FALSE - = TRUE - = FALSE - = see sheet inhibit tables - = see sheet enable tables -	40 counts continuous	2 Trips
Battery Sensor (External Sensor) - Current Shunt Sensor	P16DD	Diagnosis of Battery Monitor Module Current High fault	Communication message for Shunt Voltage out of range High indicates a diagnostic failure	= TRUE -	Battery Monitor module diagnosis is active, which is the following conditions: (Battery voltage Condition general function request	= TRUE - > 10.9 V = FALSE -	continuous	2 Trips

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Intelligent Battery Sensor (IBS) communication is active	= TRUE -		
					Communication fault is active	= FALSE -		
					)			
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
Done Check debounce Param	P16D6	Diagnosis of Battery Monitor Module Current Low fault	Communication message for Shunt Voltage out of range Low indicates a diagnostic failure	= TRUE -	Battery Monitor module diagnosis is active, which is the following conditions:	= TRUE -	continuous	2 Trips
					(			
					Battery voltage	> 10.9 V		
					Condition general function request	= FALSE -		
					Intelligent Battery Sensor (IBS) communication is active	= TRUE -		
					Communication fault is active	= FALSE -		
					)			
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
done	P058B	Diagnosis of Battery Monitor Module Current Monitoring performance fault	Communication message for Battery Current performance indicates a diagnostic failure	= TRUE -	Battery Monitor module diagnosis is active, which is the following conditions:	= TRUE -	continuous	2 Trips
					(			
					Battery voltage	> 10.9 V		
					Condition general function request	= FALSE -		
					Intelligent Battery Sensor (IBS) communication is active	= TRUE -		
					Communication fault is active	= FALSE -		
					)			
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
Battery Sensor (External Sensor) - Module	P16E1	Diagnosis of Battery Monitor Module Performance– RAM error	Communication message for Internal Battery Sensor - RAM internal fault indicates a diagnostic failure	= TRUE -	Battery Monitor module diagnosis is active, which is the following conditions:	= TRUE -	continuous	2 Trips
					(			
					Battery voltage	> 10.9 V		
					Condition general function request	= FALSE -		
					Intelligent Battery Sensor (IBS) communication is active	= TRUE -		
					Communication fault is active	= FALSE -		
					)			
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
Done check debounce param	P16E2	Diagnosis of Battery Monitor Module Performance– ROM error	Communication message for Internal Battery Sensor - ROM internal fault indicates a diagnostic failure	= TRUE -	Battery Monitor module diagnosis is active, which is the following conditions:	= TRUE -	continuous	2 Trips
					(			
					Battery voltage	> 10.9 V		
					Condition general function request	= FALSE -		
					Intelligent Battery Sensor (IBS) communication is active	= TRUE -		
					Communication fault is active	= FALSE -		
					)			
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
	P16E3	**Path 1:** Diagnosis of Battery monitor Module data Incompatible diagnostic - Historical	(Absolute difference between the IBS Return Nominal C20 and ECM Nominal C20 Calibration	> 5 Ah	Battery Monitor module diagnosis is active, which is the following conditions:	= TRUE -	10 counts continuous	2 Trips
			OR Absolute difference between the IBS Return Battery Type and ECM Battery Type Calibration	> 0 -	(Battery voltage	> 10.9 V		
			OR Absolute difference between the IBS Return U40 Battery Calibration and ECM U40 Battery Calibration	> 0.502 V	Condition general function request	= FALSE -		
					Intelligent Battery Sensor (IBS) communication is active	= TRUE -		
			OR		Communication fault is active	= FALSE -		

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OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required			MIL Illum.
			Absolute difference between the IBS Return U80 Battery Calibration and ECM U80 Battery Calibration	>	0.502	V	)							
			)											
			Manufacturer Enable Counter used to automatically arm Seed & Key	>=	0	-	No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enable conditions met	=	see sheet enable tables	-				
		Path 2: Diagnosis of Battery monitor Module data Incompatible diagnostic - Continuous	Absolute difference between the IBS Return Nominal C20 and ECM Nominal C20 Calibration	>	5	Ah	Battery Monitor module diagnosis is active, which is the following conditions:	=	TRUE	-	10	counts	continuous	2 Trips
			OR				(							
			Absolute difference between the IBS Return Battery Type and ECM Battery Type Calibration	>	0	-	Battery voltage	>	10.9	V				
			OR				Condition general function request	=	FALSE	-				
			Absolute difference between the IBS Return U40 Battery Calibration and ECM U40 Battery Calibration	>	0.502	V	Intelligent Battery Sensor (IBS) communication is active	=	TRUE	-				
			OR				Communication fault is active	=	FALSE	-				
			Absolute difference between the IBS Return U80 Battery Calibration and ECM U80 Battery Calibration	>	0.502	V	)							
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enable conditions met	=	see sheet enable tables	-				
Battery Monitor Module	P058A	Diagnosis of Battery Monitor Module Communication - Initialization error	Communication message for Battery Sensor initialization indicates a diagnostic failure	=	TRUE	-	Battery Monitor module diagnosis is active, which is the following conditions:	=	TRUE	-			continuous	2 Trips
							(							
							Battery voltage	>	10.9	V				
							Condition general function request	=	FALSE	-				
							Intelligent Battery Sensor (IBS) communication is active	=	TRUE	-				
							Communication fault is active	=	FALSE	-				
							)							
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enable conditions met	=	see sheet enable tables	-				
Battery Sensor (External Sensor) - Voltage Sensor	P16D5	Diagnosis of Battery Monitor Module Circuit High Voltage fault	Communication message for Battery Voltage out of range High indicates a diagnostic failure	=	TRUE	-	Battery Monitor module diagnosis is active, which is the following conditions:	=	TRUE	-			continuous	2 Trips
							(							
							Battery voltage	>	10.9	V				
							Condition general function request	=	FALSE	-				
							Intelligent Battery Sensor (IBS) communication is active	=	TRUE	-				
							Communication fault is active	=	FALSE	-				
							)							
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enable conditions met	=	see sheet enable tables	-				
Done, check debounce values.	P16D4	Diagnosis of Battery Monitor Module Circuit Low Voltage fault	Communication message for Battery Voltage out of range Low indicates a diagnostic failure	=	TRUE	-	Battery Monitor module diagnosis is active, which is the following conditions:	=	TRUE	-			continuous	2 Trips
							(							
							Battery voltage	>	10.9	V				
							Condition general function request	=	FALSE	-				
							Intelligent Battery Sensor (IBS) communication is active	=	TRUE	-				
							Communication fault is active	=	FALSE	-				
							)							
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enable conditions met	=	see sheet enable tables	-				
done, but check debounce parameter values	P058D	Diagnosis of Battery Monitor Module Voltage Monitoring performance fault	Absolute difference between IBS Measured Voltage and System 12V Battery Voltage	>	5	V	Battery Monitor module diagnosis is active, which is the following conditions:	=	TRUE	-	100	counts	continuous	no MIL
							(							
							Battery voltage	>	10.9	V				
							Condition general function request	=	FALSE	-				
							Intelligent Battery Sensor (IBS) communication is active	=	TRUE	-				
							Communication fault is active	=	FALSE	-				

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OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					) No pending or confirmed DTCs Basic enable conditions met	= see sheet inhibit tables - = see sheet enable tables -		
Battery Volatge	P0563	Detects if the battery voltage is higher than calibrated threshold for calibrated amount of time	Battery voltage	> 3.1802 V	ECU is not in the PREDRIVE state Engine is in running state for time Vehicle speed No pending or confirmed DTCs Basic enable conditions met	= TRUE - = TRUE - >= 2 sec >= 2.486016159 mph = see sheet inhibit tables - = see sheet enable tables -	10 sec continuous	no MIL
Battery Volatge	P0562	Detects if the battery voltage is lower than calibrated threshold for calibrated amount of time	Battery voltage	< 1.582 V	ECU is not in the PREDRIVE state Engine is in running state for time No pending or confirmed DTCs Basic enable conditions met	= TRUE - = TRUE - >= 2 sec = see sheet inhibit tables - = see sheet enable tables -	10 sec continuous	no MIL
Brake Position Sensor - Primary	P057D	Detects if the brake pedal position sensor voltage is higher than calibrated threshold for calibrated amount of time	Brake pedal position sensor voltage	> 4.597 V	Ignition is on Basic enable conditions met	= TRUE - = see sheet enable tables -	0.5 sec continuous	1 Trip
Brake Position Sensor - Primary	P057C	Detects if the brake pedal position sensor voltage is lower than calibrated threshold for calibrated amount of time	Brake pedal position sensor voltage	< 0.449 V	Ignition is on Basic enable conditions met	= TRUE - = see sheet enable tables -	0.5 sec continuous	1 Trip
Brake pedal position sensor	P057B	**Path 1:** Detects when brake pedal position ratio is higher than calibrated threshold for calibrated amount of time	Brake pedal ratio	> 109.9976 %	Ignition is on No pending or confirmed DTCs Basic enable conditions met	= TRUE - = see sheet inhibit tables - = see sheet enable tables -	1 sec continuous	1 Trip
		Path 2: Detects when brake pedal position ratio is lower than calibrated threshold for calibrated amount of time	Brake pedal ratio	< -18.0054 %	Ignition is on No pending or confirmed DTCs Basic enable conditions met	= TRUE - = see sheet inhibit tables - = see sheet enable tables -	1 sec continuous	1 Trip
Brake switch diagnosis		**Path 3:** Detects when brake pedal switch EWMA(Exponentially Weighted Moving Average) factor is less than calibrated threshold	EWMA filtered test result based on the difference of |(a) - (b)| where (a) maximum analog brake sensor raw voltage during test (b) minimum analog brake sensor raw voltage during test where difference of the brake sensor voltage corresponds to a corrected value of (see Look-Up-Table # P057B-1)	<= 0.400024 - = calculated parameter V = calculated parameter V = 0 to 1 factor	Battery voltage Control for starter powerstage for time Conditions for fast test scheduler (Number of reference voltage samples considered for fast EWMA calculation Absolute difference between maximum and minimum voltage obtained during the EWMA calculation in fast test scheduler) Conditions for slow test scheduler (Slow test completion cycle Vehicle is in parking state (Gear position in case of automatic transmission system is in parking	> 10.9 V = FALSE - >= 0.04 sec > 50 - > 0.051 V = FALSE - = TRUE - = TRUE -	2 events continuous	1 Trip

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OBD GROUP: KGMXOBDG07 TEST GROUP: KGMXV04.2088 EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					) Number of reference voltage samples considered for slow EWMA calculation Gear position in case of automatic transmission system is not in parking Vehicle speed Accelerator pedal position) Number of successful EWMA test completed No pending or confirmed DTCs Basic enable conditions met	 > 200 - = TRUE - >= 4.350528278 mph < 5.0049 % >= 2 events = see sheet inhibit tables - = see sheet enable tables -		
	P138B	Checks if the voltage of the released brake pedal is within the zero point range	Brake pedal position sensor voltage OR Brake pedal position sensor voltage	> 1.445 V < 0.6 V	Conditions for first zero point learning (Brake pedal released (Detection through pedal switch)) OR Brake stroke sensor learning Continuous zero point learning conditions (Accelerator pedal position Accelerator pedal position Vehicle speed Vehicle speed Vehicle acceleration Vehicle acceleration Absolute difference between filtered brake pedal volatge and raw value brake pedal position voltage Engine is in running state Starter is not engaged) No pending or confirmed DTCs Basic enable conditions met	 = TRUE - = TRUE - < 69.9951 % > 9.9976 % < 74.58048477 mph > 7.458048477 mph < 0.8 m/s^2 > 0.1 m/s^2 < 0.03 V = TRUE - = TRUE - = see sheet inhibit tables - = see sheet enable tables -	1.5 sec continuous	1 Trip
Brake Position Sensor - Secondary	P0572	Detects when redundant brake pedal initial travel status is achieved but redundant brake switch is not set	Redundant brake pedal initial travel status Redundant brake switch status	= TRUE - = FALSE -	Ignition is on No pending or confirmed DTCs Basic enable conditions met	= TRUE - = see sheet inhibit tables - = see sheet enable tables -	5 sec continuous	1 Trip
	P0573	Detects when redundant brake pedal initial travel status is not achieved but redundant brake switch is set	Redundant brake pedal initial travel status Redundant brake switch status	= FALSE - = TRUE -	Ignition is on No pending or confirmed DTCs Basic enable conditions met	= TRUE - = see sheet inhibit tables - = see sheet enable tables -	5 sec continuous	1 Trip
Coolant Temperature Sensor	P0119	Engine Coolant Temperature Sensor 1 - Circuit continuity check - loose contact detection	Difference between raw sensor value and low−pass filtered raw sensor value of engine coolant tempearture sensor 1	>= 0.12 V	Engine Coolant Temperature Sensor 1 Circuit Low Engine Coolant Temperature Sensor 1 Circuit High and Basic enable conditions met	= FALSE - = FALSE - = see sheet enable tables -	20 sec continuous	2 Trips
Crank Case Vapor Pressure Sensor	P051D	Detects if the crankcase pressure sensor voltage is greater than a calibrated threshold for calibrated time	Raw voltage from the crankcase pressure sensor same as Crankcase pressure	> 4.7 V > -5.625 to 6.25 kPa	Ignition is on No pending or confirmed DTCs Basic enable conditions met	= TRUE - = see sheet inhibit tables = see sheet enable tables	2 sec continuous	2 Trips
Crank Case Vapor Pressure Sensor	P051C	Detects if the crankcase pressure sensor voltage is less than a calibrated threshold for calibrated time	Raw voltage from the crankcase pressure sensor	< 0.2 V	Ignition is on	= TRUE -	2 sec continuous	2 Trips

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Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
			same as Crankcase pressure	 < -5.625 to 6.25 kPa	No pending or confirmed DTCs Basic enable conditions met	= see sheet inhibit tables = see sheet enable tables		
Crank Case Vapor Pressure Sensor	P051B	Diagnosis of Crankcase Pressure Sensor plausibility check	Absolute value of Sensed crank case ventilation pressure	> 0.253 kPa	ECU is in afterrun state No pending or confirmed DTCs Basic enable conditions met	= TRUE - = see sheet inhibit tables - = see sheet enable tables -	0.01 sec once per driving cycle	2 Trips
DC/DC Converter (External sensor) - Output Voltage Sensing Circuit 1	P3053	Signal range check - out of range high	Raw value of circuit 1 voltage	> 28 V	Ignition is on Battery voltage No pending or confirmed DTCs Basic enable conditions met	= TRUE - > 7 V = see sheet inhibit tables - = see sheet enable tables -	800 counts continuous	2 Trips
	P3051	Signal range check - out of range low	Raw value of circuit 1 voltage	< 1.00 V	Ignition is on Battery voltage No pending or confirmed DTCs Basic enable conditions met	= TRUE - > 7 V = see sheet inhibit tables - = see sheet enable tables -	800 counts continuous	2 Trips
	P3055	Circuit 1 Voltage Performance – Bypass Mode	Absolute difference between Host ECU Process System Voltage and Circuit 1 Voltage	> 1.00 V	Ignition is on Battery voltage (Engine is running and for time OR Ignition is on and for time OR Engine Auto Stop Active) No pending or confirmed DTCs Basic enable conditions met	= TRUE - > 7 V >= 1 sec >= 1 sec = TRUE - = see sheet inhibit tables - = see sheet enable tables -	800 counts continuous	2 Trips
	P3055	Circuit 1 Voltage Performance – Stabilize Mode	Absolute difference between Host ECU Pre-Crank System Voltage and Circuit 1 Voltage	> 1.00 V	Ignition is on Battery voltage No pending or confirmed DTCs Basic enable conditions met	= TRUE - > 7 V = see sheet inhibit tables - = see sheet enable tables -	2 counts continuous	2 Trips
DC/DC Converter Actuator Voltage Signal Message Counter Incorrect	U0599	Detects when wrong alive rolling counter (DC Converter Actuator Voltage ADC Value Alive Rolling Count) received by the frame PPEI_DC_Conv_General_Status_PE (0xA0) from DC to DC Converter Control Module "A"	Wrong alive rolling counter (DC Converter Actuator Voltage ADC Value Alive Rolling Count) received by the frame PPEI_DC_Conv_General_Status_PE (0xA0) from DC to DC Converter Control Module "A"	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	10 counts continuous	2 Trips
	U0599	Detects when wrong protection value (DC Converter Actuator Voltage ADC Value Protection Value) received by the frame PPEI_DC_Conv_General_Status_PE (0xA0) from DC to DC Converter Control Module "A"	Wrong protection value (DC Converter Actuator Voltage ADC Value Protection Value) received by the frame PPEI_DC_Conv_General_Status_PE (0xA0) from DC to DC Converter Control Module "A"	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	10 counts continuous	2 Trips
DC/DC Converter Internal Health Status Signal Message Counter Incorrect	U0599	Detects when wrong alive rolling counter received by the frame PPEI_DC_Cnv_Int_Health_Stat_PE (0x1D2) from DC to DC Converter Control Module "A"	Wrong alive rolling counter received by the frame PPEI_DC_Cnv_Int_Health_Stat_PE (0x1D2) from DC to DC Converter Control Module "A"	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	10 counts continuous	2 Trips

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
	U0599	Detects when wrong protection value received by the frame PPEI_DC_Cnv_Int_Health_Stat_PE (0x1D2) from DC to DC Converter Control Module "A"	Wrong protection value received by the frame PPEI_DC_Cnv_Int_Health_Stat_PE (0x1D2) from DC to DC Converter Control Module "A"	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	10 counts continuous	2 Trips
	U0599	Detects when sliding window error received by the frame PPEI_DC_Cnv_Int_Health_Stat_PE from DC to DC Converter Control Module "A"	Sliding window error received by the frame PPEI_DC_Cnv_Int_Health_Stat_PE from DC to DC Converter Control Module "A"	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	10 counts continuous	2 Trips
DC/DC Converter Ignition Switch Run/Start Position Signal Message Counter Incorrect	U0599	Detects when wrong alive rolling counter (DC Converter Crank Terminal Status Alive Rolling Count) received by the frame PPEI_DC_Conv_General_Status_PE (0xA0) from DC to DC Converter Control Module "A"	Wrong alive rolling counter (DC Converter Crank Terminal Status Alive Rolling Count) received by the frame PPEI_DC_Conv_General_Status_PE (0xA0) from DC to DC Converter Control Module "A"	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	10 counts continuous	2 Trips
	U0599	Detects when wrong protection value (DC Converter Crank Terminal Status Protection Value) received by the frame PPEI_DC_Conv_General_Status_PE (0xA0) from DC to DC Converter Control Module "A"	Wrong protection value (DC Converter Crank Terminal Status Protection Value) received by the frame PPEI_DC_Conv_General_Status_PE (0xA0) from DC to DC Converter Control Module "A"	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	10 counts continuous	2 Trips
DC/DC Converter Crank Control Signal Message Counter Incorrect	U0599	Detects when wrong alive rolling counter error(DC Converter Crank Control Terminal Status Alive Rolling Count) received by the frame PPEI_DC_Conv_General_Status_PE (0xA0) from DC to DC Converter Control Module "A"	Wrong alive rolling counter error(DC Converter Crank Control Terminal Status Alive Rolling Count) received by the frame PPEI_DC_Conv_General_Status_PE (0xA0) from DC to DC Converter Control Module "A"	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	10 counts continuous	2 Trips
	U0599	Detects when wrong protection value received by the frame PPEI_DC_Conv_General_Status_PE (0xA0) from DC to DC Converter Control Module "A"	Wrong protection value received by the frame PPEI_DC_Conv_General_Status_PE (0xA0) from DC to DC Converter Control Module "A"	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	10 counts continuous	2 Trips
DC/DC Converter Control Module "A"	U0599	Detects when sliding windows error is received by frame PPEI_DC_Cnv_Int_Health_Stat_PE(0x1D2) from DC Converter Internal Health Status module	sliding windows error is received by frame PPEI_DC_Cnv_Int_Health_Stat_PE(0x1D2) from DC Converter Internal Health Status module	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	10 counts continuous	2 Trips
	U0599	Detects when sliding windows error is received by frame PPEI_DC_Conv_General_Status_PE(0xA0) from DC Converter Actuator Voltage ADC module	sliding windows error is received by frame PPEI_DC_Conv_General_Status_PE(0xA0) from DC Converter Actuator Voltage ADC module	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	10 counts continuous	2 Trips
	U0599	Detects when sliding error is received by frame PPEI_DC_Conv_General_Status_PE(0xA0) from DC Converter Crank Control Terminal Status module	sliding error is received by frame PPEI_DC_Conv_General_Status_PE(0xA0) from DC Converter Crank Control Terminal Status module	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	10 counts continuous	2 Trips
	U0599	Detects when sliding error is received by frame PPEI_DC_Conv_General_Status_PE(0xA0) from DC Converter Run Crank Terminal Status module	sliding error is received by frame PPEI_DC_Conv_General_Status_PE(0xA0) from DC Converter Run Crank Terminal Status module	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	10 counts continuous	2 Trips
	U0599	Detects when wrong ARC is received by frame PPEI_DC_Conv_General_Status_PE(0xA0) from DC Converter Crank Terminal Status module	wrong ARC is received by frame PPEI_DC_Conv_General_Status_PE(0xA0) from DC Converter Crank Terminal Status module	= TRUE -	Ignition is ON	= TRUE -	10 counts continuous	2 Trips

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required			MIL Illum.
							Basic enable conditions met	=	see sheet enable tables	-				
DC/DC Converter (External sensor) - Output Voltage Sensing Circuit 2	P3054	Signal range check - out of range high	Raw value of circuit 2 voltage	>	28	V	Ignition is on	=	TRUE	-	800	counts	continuous	2 Trips
							Battery voltage	>	7	V				
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enable conditions met	=	see sheet enable tables	-				
	P3052	Signal range check - out of range low	Raw value of circuit 2 voltage	<	1.00	V	Ignition is on	=	TRUE	-	800	counts	continuous	2 Trips
							Battery voltage	>	7	V				
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enable conditions met	=	see sheet enable tables	-				
	P3056	Circuit 2 Voltage Performance − Bypass Mode	Absolute difference between Host ECU Process System Voltage and Circuit 2 Voltage	>	1.00	V	Ignition is on	=	TRUE	-	800	counts	continuous	2 Trips
							Battery voltage	>	7	V				
							Engine is in the start phase	=	FALSE	-				
							(							
							Engine is running and for time	>=	1	sec				
							OR							
							Ignition is on and for time	>=	1	sec				
							OR							
							Engine Auto Stop Active	=	TRUE	-				
							)							
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enable conditions met	=	see sheet enable tables	-				
	P3056	Circuit 2 Voltage Performance − Stabilize Mode	Absolute difference between Host ECU Pre-Crank System Voltage and Circuit 2 Voltage	>	1.00	V	Ignition is on	=	TRUE	-	2	counts	continuous	2 Trips
							Battery voltage	>	7	V				
							Engine is in the start phase	=	TRUE	-				
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enable conditions met	=	see sheet enable tables	-				
DC/DC Converter (External sensor) - Crank Input Signal	P305D	Crank Control Sensor Circuit High Voltage Fault	The status of the starter output acquired from DC/DC converter	<>	The status of the starter output to the powerstage	-	Ignition is ON: ECU is in DRIVE mode	=	TRUE	-	800	counts	continuous	2 Trips
							Battery voltage	>	7	V				
							Starter output to the powerstage	=	FALSE	-				
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enable conditions met	=	see sheet enable tables	-				
	P305E	Crank Control Sensor Circuit Low Voltage Fault	The status of the starter output acquired from DC/DC converter	<>	The status of the starter output to the powerstage	-	Battery voltage	>	7	V	30	counts	continuous	2 Trips
							Starter output to the powerstage	=	TRUE	-				
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enable conditions met	=	see sheet enable tables	-				
DC/DC Converter (External sensor) - Ignition Switch Run/Start Position Circuit	P305B	Ignition Switch Circuit High Voltage Fault	DC/DC-converter Run Crank Terminal Status	<>	Engine Controller Run Crank Terminal Status	-	Ignition is OFF: ECU is in PREDRIVE or POSTDRIVE mode	=	TRUE	-	400	counts	continuous	2 Trips
							Battery voltage	>	7	V				
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enable conditions met	=	see sheet enable tables	-				
	P305C	Ignition Switch Circuit Low Voltage Fault	DC/DC-converter Run Crank Terminal Status	<>	Engine Controller Run Crank Terminal Status	-	Ignition is ON: ECU is in DRIVE mode	=	TRUE	-	800	counts	continuous	2 Trips
							Battery voltage	>	7	V				

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					No pending or confirmed DTCs Basic enable conditions met	= see sheet inhibit tables - = see sheet enable tables -		
Ambient Air Temperature Sensor	P0073	Detection of ambient temperature sensor voltage exceeding the maximum threshold	Raw voltage of the Ambient temperature sensor Same as: Ambient air temperature	> 4.913 V < -46.17 Deg C	Ignition is ON No pending or confirmed DTCs Basic enable conditions met	= TRUE - = see sheet inhibit tables - = see sheet enable tables -	2 sec Continuous	2 Trips
	P0072	Detection of ambient temperature sensor voltage falling below the minimum threshold	Raw voltage of the Ambient temperature sensor Same as: Ambient air temperature	< 0.351 V > 99.96 Deg C	Ignition is ON No pending or confirmed DTCs Basic enable conditions met	= TRUE - = see sheet inhibit tables - = see sheet enable tables -	2 sec Continuous	2 Trips
Ambient Air Temperature Sensor	P0071	Plausibility check of Ambient Temperature sensor when compared with model temperature value higher than maximum threshold	Difference between ambient temperature sensor value and model temperature	> 14.96 deg C	Errors with ambient temperature sensor (Signal Range check : out of range low error for ambient air temperature sensor (P0072) Signal Range check : out of range high error for ambient air temperature sensor (P0073)) (Ambient temperature model released and updated on the current drive cycle) Basic enable conditions met No pending or confirmed DTCs	= FALSE - = FALSE - = FALSE - = see sheet enable tables - = see sheet inhibit tables -	5 sec continuous	2 Trips
	P0071	Plausibility check of Ambient Temperature sensor when compared with model temperature value higher than minimum threshold	Difference between model temperature and ambient temperature sensor value	< 14.96 deg C	Errors with ambient temperature sensor (Signal Range check : out of range low error for ambient air temperature sensor (P0072) Signal Range check : out of range high error for ambient air temperature sensor (P0073)) (Ambient temperature model released and updated on the current drive cycle) Basic enable conditions met No pending or confirmed DTCs	= FALSE - = FALSE - = FALSE - = see sheet enable tables - = see sheet inhibit tables -	5 sec continuous	2 Trips
Ambient Air Temperature Sensor	P0074	Detects Environment Air Temperature implausible / Environmental temperature signal erratic	Absolute difference between measured and filtered ambient temperatures for time	> 10.06 deg C >= 20 sec	Ignition ON No pending or confirmed DTCs Basic enable conditions met	= TRUE - = see sheet inhibit tables = see sheet enable tables -	continuous	2 Trips
Barometric pressure sensor	P2229	Monitoring of Barometric Pressure Sensor for Signal range check - High	Error information message A fom digital ambient air pressure sensor returns a CRC (Cyclical Redundancy Checking) error OR Error information message A fom digital ambient air pressure sensor returns a short circuit to VDD	= TRUE - = TRUE -	Reading message A fom digital ambient air pressure sensor has been successful and has delivered valid values Ambient pressure sensor boot is done ECU is in drive state No pending or confirmed DTCs	= TRUE - = TRUE - = TRUE - = see sheet inhibit tables -	2 sec Continous	2 Trips

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Basic enable conditions met	= see sheet enable tables -		
	P2228	Monitoring of Barometric Pressure Sensor for Signal range check - Low	Error information message A fom digital ambient air pressure sensor returns a short circuit to ground	= TRUE -	Reading message A fom digital ambient air pressure sensor has been successful and has delivered valid values	= TRUE -	2 sec Continous	2 Trips
					Ambient pressure sensor boot is done	= TRUE -		
					ECU is in drive state	= TRUE -		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
Barometric pressure sensor	P2227	**Path 1:** Continuity check - positive deviation too high	Difference between filtered ambient air pressure raw value and its delayed value (20s)	> 5 kPa	Ambient pressure sensor valid, which is the following condition:	= TRUE -	2 sec continous	2 Trip
					(			
					Ambient pressure sensor raw value exceeded	= TRUE -		
					for time	>= 0.2 sec		
					)			
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
			Difference between measured ambient air pressure raw value and maximum modeled ambient pressure	> 1.5 kPa	Threshold model for ambient pressure valid, which is the following condition for time	>= 2.6 sec	2 sec continous	2 Trip
					(			
					(			
					Throttle valve/actuator position	< 8.0078 %		
					Engine speed	< 1000 rpm		
					)			
					OR			
					Engine speed	= 0 rpm		
					ECU is in DRIVE state	= TRUE -		
					Measured pressure upstream throttle valve is valid	= TRUE -		
					)			
					Ambient pressure sensor valid, which is the following condition:	= TRUE -		
					(			
					Ambient pressure sensor raw value exceeded	= TRUE -		
					for time	>= 0.2 sec		
					)			
					Error suspision from contionious check, which is the following condition:	= TRUE -		
					(			
					Difference between measured ambient air pressure raw value and its delayed value (20s)	> 5 kPa		
					OR			
					Fault suspicion from continuity check between the drives, which is the following condition:	= TRUE -		
					(			
					(			
					Absolute value of difference between ambient pressure from actual driving cycle and ambient pressure from last driving cycle	< 10 kPa		
					Zyklus flag for diagnosis by comparing actual and last driving cycle ambient pressure	= TRUE -		
					(			
					Ambient pressure from last driving cycle valid	= TRUE -		
					Cycle flag ambient pressure from current driving cycle adopted	= TRUE -		
					)			
					)			
					OR			
					Healing of continuity check with additional value	= TRUE -		
					(			
					Condition threshold modells for ambient pressure valid	= TRUE -		
					Difference between ambient air pressure raw value measured and maximum modelled ambient pressure	< 1.5 kPa		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Difference between minimal modelled ambient pressure and ambient air pressure raw value measured	< 1.5 kPa		
					)			
					OR			
					Condition deadlock threshold modells for ambient pressure valid	= TRUE -		
					(			
					Condition for error suspision from contionious check	= TRUE -		
					Validity of the pressure sensor of the intake manifold - bank 1	= TRUE -		
					)			
					)			
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
		Path 2: Continuity check - negative deviation too high	Difference between delayed (20s) ambient air pressure and measured ambient air pressure raw value	> 5 kPa	Ambient pressure sensor valid, which is the following condition:	= TRUE -	2 sec continous	2 Trip
					(			
					Ambient pressure sensor raw value exceeded	= TRUE -		
					for time	>= 0.2 sec		
					)			
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
			Difference between minimum modeled ambient pressure and measured ambient air pressure raw value	> 1.5 kPa	Threshold model for ambient pressure valid, which is the following condition for time	>= 2.6 sec	2 sec continous	2 Trip
					(			
					(			
					Throttle valve/actuator position	< 8.0078 %		
					Engine speed	< 1000 rpm		
					)			
					OR			
					Engine speed	= 0 rpm		
					ECU is in DRIVE state	= TRUE -		
					Measured pressure upstream throttle valve is valid	= TRUE -		
					)			
					Ambient pressure sensor valid, which is the following condition:	= TRUE -		
					(			
					Ambient pressure sensor raw value exceeded	= TRUE -		
					for time	>= 0.2 sec		
					)			
					Error suspision from contionious check, which is the following condition:	= TRUE -		
					(			
					Difference between measured ambient air pressure raw value and its delayed value (20s)	> 5 kPa		
					OR			
					Fault suspicion from continuity check between the drives, which is the following condition:	= TRUE -		
					(			
					(			
					Absolute value of difference between ambient pressure from actual driving cycle and ambient pressure from last driving cycle	< 10 kPa		
					Zyklus flag for diagnosis by comparing actual and last driving cycle ambient pressure	= TRUE -		
					(			
					Ambient pressure from last driving cycle valid	= TRUE -		
					Cycle flag ambient pressure from current driving cycle adopted	= TRUE -		
					)			
					)			
					OR			
					Healing of continuity check with additional value	= TRUE -		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					(			
					Condition threshold modells for ambient pressure valid	= TRUE -		
					Difference between ambient air pressure raw value measured and maximum modelled ambient pressure	< 1.5 kPa		
					Difference between minimal modelled ambient pressure and ambient air pressure raw value measured	< 1.5 kPa		
					)			
					OR			
					Condition deadlock threshold modells for ambient pressure valid	= TRUE -		
					(			
					Condition for error suspision from contionious check	= TRUE -		
					Validity of the pressure sensor of the intake manifold - bank 1	= TRUE -		
					)			
					)			
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
		Path 3: Rationality check - out of range high	Difference between measured ambient pressure and the maximal reference pressure for delta pressure sensor diagnosis	> 2.2344 kPa	ECU is in DRIVE state	= TRUE -	2 sec continous	2 Trip
					(			
					Engine is not running	= TRUE -		
					for time	>= 5 sec		
					)			
					(			
					(			
					(			
					Condition ambient pressure sensor valid	= TRUE -		
					Condition ambient pressure from sensor valid	= TRUE -		
					)			
					for time	> 0.2 sec		
					)			
					OR			
					(			
					(			
					Condition ambient pressure sensor valid	= TRUE -		
					Condition ambient pressure from sensor valid	= TRUE -		
					)			
					for time	= 0.2 sec		
					)			
					Ambient pressure sensor reference for delta pressure sensor is stable	= FALSE -		
					)			
					Ambient pressure sensor measured is valid	= TRUE -		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
		Path 4: Rationality check - out of range low	Difference between the minimal reference pressure for delta pressure sensor diagnosis and the measured ambient pressure	> 2.2344 kPa	ECU is in DRIVE state	= TRUE -	2 sec continous	2 Trip
					(			
					Engine is not running	= TRUE -		
					for time	>= 5 sec		
					)			
					(			
					(			
					(			
					Condition ambient pressure sensor valid	= TRUE -		
					Condition ambient pressure from sensor valid	= TRUE -		
					)			
					for time	> 0.2 sec		
					)			
					OR			
					(			
					(			
					Condition ambient pressure sensor valid	= TRUE -		
					Condition ambient pressure from sensor valid	= TRUE -		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					) for time) Ambient pressure sensor reference for delta pressure sensor is stable) Ambient pressure sensor measured is valid No pending or confirmed DTCs Basic enable conditions met	= 0.2 sec = FALSE - = TRUE - = see sheet inhibit tables - = see sheet enable tables -		
		Path 5: Sensor plausibility check	Information from digital ambient pressure sensor for QUEUE FULL OR Information from digital ambient pressure sensor for SENSOR DEFECT OR Information from digital ambient pressure sensor for VALUE TOO LOW OR Information from digital ambient pressure sensor for VALUE TOO HIGH	= TRUE - = TRUE - = TRUE - = TRUE -	Sensor reset is triggered (Ambient pressure sensor boot done ECU Sub-State in DRIVE) No pending or confirmed DTCs Basic enable conditions met	= TRUE - = TRUE - = TRUE - = see sheet inhibit tables - = see sheet enable tables -	2 sec continous	2 Trip
Fuel Rail Pressure Sensor - Dual Pressure - Primary value (SENT)	P128A	Diagnosis of Fuel Rail Pressure Sensor1 Bank1 - Out of Range Error	Raw pressure data of SENT rail pressure sensor channel 1 OR Raw pressure data of SENT rail pressure sensor channel 1	> 4088 - < 1 -	Ignition is on Loss due to high level on SENT sensor signal line of SENT Rail pressure sensor Loss due to low level on SENT sensor signal line of SENT Rail pressure sensor Error in SENT rail pressure sensor No pending or confirmed DTCs Basic enable conditions met	= FALSE - = FALSE - = FALSE - = FALSE - = see sheet inhibit tables - = see sheet enable tables -	0.5 sec Continuous	1 Trip
	U0625	**Path1:** Diagnosis of message loss due to sensor signal line on high level	Loss due to high level on SENT sensor signal line of SENT rail pressure sensor	= TRUE -	Ignition is on Loss due to low level on SENT sensor signal line of SENT rail pressure sensor No pending or confirmed DTCs Basic enable conditions met	= FALSE - = FALSE - = see sheet inhibit tables - = see sheet enable tables -	0.5 sec Continuous	1 Trip
		Path2: Diagnosis of message loss due to sensor signal line on low level	Loss due to low level on SENT sensor signal line of SENT rail pressure sensor	= TRUE -	Ignition is on Loss due to high level on SENT sensor signal line of SENT rail pressure sensor No pending or confirmed DTCs Basic enable conditions met	= FALSE - = FALSE - = see sheet inhibit tables - = see sheet enable tables -	0.5 sec Continuous	1 Trip
	U1374	Diagnosis of Fuel Rail Pressure Protocol Error	Protocol error for SENT rail pressure sensor detected	= TRUE -	Ignition is on Loss due to high level on SENT sensor signal line of SENT Rail pressure sensor Loss due to low level on SENT sensor signal line of SENT Rail pressure sensor No pending or confirmed DTCs Basic enable conditions met	= FALSE - = FALSE - = FALSE - = see sheet inhibit tables - = see sheet enable tables -	0.5 sec Continuous	1 Trip

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required			MIL Illum.
Fuel Rail Pressure Sensor Performance	P0191	**Path 1:** Rationality Diagnosis of Fuel Rail Pressure Sensor	The low−pass filtered absolute value of the difference of the two rail pressure data values (see Look-up-table #P0191-1)	>	100 to 200	-	Raw data for rail pressure from SENT	<=	1	-	1	sec	Continuous	1 Trip
							Raw data for rail pressure from SENT	>=	4088	-				
							Raw data for rail pressure from SENT sensor channel 2	<=	1	-				
							Raw data for rail pressure from SENT sensor channel 2	>=	4088	-				
							Message loss due to high level on SENT sensor signal line of SENT Rail pressure sensor	=	FALSE	-				
							Message loss due to low level on SENT sensor signal line of SENT Rail pressure sensor	=	FALSE	-				
							Protocol error of SENT rail pressure sensor	=	FALSE	-				
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enable conditions met	=	see sheet enable tables	-				
Fuel System High Pressure Sensor	P0191	**Path 2:** High pressure sensor digital raw value is lesser than calibrated threshold for a calibrated period of time	High pressure sensor digital raw value	<	-1.5	MPa	Fuel pre-supply pump is ON	=	TRUE	-	1	sec	Continuous	1 Trips
							(							
							Rail pressure sensor voltage is not plausible	=	TRUE	-				
							(							
							(Condition error in stuck check, no voltage difference, which is the following conditions	=	FALSE	-				
							(Rail pressure sensor voltage difference between minimum and maximum value over one cycle	>	4	-				
							(							
							Number of injections	<	8	-				
							ECU is in drive state	=	FALSE	-				
							)							
							)							
							Rail pressure sensor voltage is plausible	=	TRUE	-				
							(							
							Pressure from SENT is not plausible	=	FALSE	-				
							(							
							Raw data for rail pressure from SENT	<=	4088	-				
							Raw data for rail pressure from SENT	>=	1	-				
							)							
							OR							
							Pressure from SENT is not plausible, channel 2	=	FALSE	-				
							(							
							Data for rail pressure from SENT Sensor channel 2	<=	4088	-				
							Data for rail pressure from SENT Sensor channel 2	>=	1	-				
							)							
							)							
							)							
							)							
							)							
							Condition for initial fuelling of fuel supply system is active	=	FALSE	-				
							)							
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enable conditions met	=	see sheet enable tables	-				
Fuel System Pressure Sensor High Pressure Side	P0191	**Path 3:** Signal stuck check	Rail pressure sensor voltage difference between minimum and maximum value over one cycle	<=	4	-	Condition error in stuck check, no voltage difference, which is the following conditions	=	TRUE	-	2	sec	continuous	1 Trip
							(							
							Number of injections	>=	8	-				
							ECU is in drive state	=	TRUE	-				
							)							
							Rail pressure sensor voltage is plausible	=	TRUE	-				

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					(			
					Pressure from SENT is not plausible	= FALSE -		
					(			
					Raw data for rail pressure from SENT	<= 4088 -		
					Raw data for rail pressure from SENT	>= 1 -		
					)			
					OR			
					Pressure from SENT is not plausible, channel 2	= TRUE -		
					(			
					Data for rail pressure from SENT, channel 2	<= 4088 -		
					Data for rail pressure from SENT, channel 2	>= 1 -		
					)			
					)			
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
Fuel Rail Pressure Sensor - Dual Pressure - Backup value (SENT)	P128B	Diagnosis of Fuel Rail Pressure Sensor2 Bank1 - Out of Range Error	Raw pressure data of SENT rail pressure sensor channel 2	> 4088 -	Ignition is on	= FALSE -	0.5 sec Continuous	1 Trip
			OR		Loss due to high level on SENT sensor signal line of SENT Rail pressure sensor	= FALSE -		
			Raw pressure data of SENT rail pressure sensor channel 2	< 1 -	Loss due to low level on SENT sensor signal line of SENT Rail pressure sensor	= FALSE -		
					Error in SENT rail pressure sensor	= FALSE -		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
	U101B	**Path1:** Diagnosis of message loss due to sensor signal line on high level	Loss due to high level on SENT sensor signal line of SENT rail pressure sensor	= TRUE -	Ignition is on	= FALSE -	0.5 sec Continuous	1 Trip
					Loss due to low level on SENT sensor signal line of SENT rail pressure sensor	= FALSE -		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
		Path2: Diagnosis of message loss due to sensor signal line on low level	Loss due to low level on SENT sensor signal line of SENT rail pressure sensor	= TRUE -	Ignition is on	= FALSE -	0.5 sec Continuous	1 Trip
					Loss due to high level on SENT sensor signal line of SENT rail pressure sensor	= FALSE -		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
	U1375	Diagnosis of Fuel Rail Pressure Protocol Error	Protocol error for SENT rail pressure sensor detected	= TRUE -	Ignition is on	= FALSE -	0.5 sec Continuous	1 Trip
					Loss due to high level on SENT sensor signal line of SENT Rail pressure sensor	= FALSE -		
					Loss due to low level on SENT sensor signal line of SENT Rail pressure sensor	= FALSE -		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
Fuel Tank Pressure Sensor (S1 CAN)	P0453	Detects if the fuel tank pressure sensor voltage is higher than a calibrated threshold for a calibrated period of time	Fuel tank pressure sensor voltage	> 4.8486 V	(		10 sec continuous	2 Trips
					Engine start is finished	= TRUE -		
			same as		means:			
			Fuel tank pressure	< -4.2 kPa	(			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Engine speed	> 200 rpm		
					)			
					OR			
					Engine speed	= 0 rpm		
					OR			
					Engine state is in auto stop mode	= TRUE -		
					)			
					ECU is in pre-drive state	= FALSE -		
					No pending or confirmed DTCs	= See sheet inhibit tables -		
					Basic enable conditions met	= See sheet enable tables -		
Fuel Tank Pressure Sensor (S1 CAN)	P0452	Detects if the fuel tank pressure sensor voltage is lower than a calibrated threshold for a calibrated period of time	Fuel tank pressure sensor voltage	< 0.2002 V	(	= TRUE -	10 sec continuous	2 Trips
					Engine start is finished			
			same as		means:			
			Fuel tank pressure	> 1.63 kPa	(			
					Engine speed	> 200 rpm		
					)			
					OR			
					Engine speed	= 0 rpm		
					OR			
					Engine state is in auto stop mode	= TRUE -		
					)			
					ECU is in pre-drive state	= FALSE -		
					No pending or confirmed DTCs	= See sheet inhibit tables -		
					Basic enable conditions met	= See sheet enable tables -		
	P0451	Absolute value of Pressure difference for check of tank pressure sensor for drift is greater than the threshold for a calibrated period of time	Absolute value of Pressure difference for check of tank pressure sensor for drift	> 0.813 kPa	Tank pressure sensor for start check for drift is fulfilled, which is the following conditions for time	>= 3 sec	7 sec continuous	2 Trips
					(			
					Canister vent valve (CVV) commanded open	= TRUE -		
					(			
					EVAP purge flow	<= 0.000541667 g/sec		
					(	< 93.22560597 mph		
					Vehicle speed			
					(			
					Vehicle speed	> 0 mph		
					Purge mass for tank pressure sensor ((a/36)+b)	>= 0.3 g		
					where a - EVAP purge flow			
					where b - Integrated CPV - mass flow for tank pressure sensor			
					)			
					for time	>= 30 sec		
					)			
					OR			
					(	= TRUE -		
					ECU control for ECU switch off delay is available			
					(			
					Condition refueling is recognized	= FALSE -		
					(	> 0.119995 kPa		
					(			
					Filtered tank pressure			
					Band pass filtered tank pressure signal for refueling or cap opening detection	> 0.030029 kPa		
					)			
					OR			
					Absolute band pass filtered tank pressure signal for refueling or cap opening detection	> 0.040039 kPa		
					)			
					(	= FALSE -		
					Condition refueling is detected			
					(	= FALSE -		
					Condition refueling possible			
					OR			
					Difference between unfiltered fuel volume and stopped fuel level	<= 5.1 l		
					)			
					)			
					OR			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
							(	=	FALSE	-		
							Condition refueling bit valid					
							(	=	TRUE	-		
							Condition refueling possible					
							OR					
							Refuel indication is active	=	TRUE	-		
							Difference between unfiltered fuel volume and stopped fuel level	>	5.1	l		
							)					
							)					
							)					
							for time	>	300	sec		
							)					
							(					
							Ambient pressure	>=	70	kPa		
							(	=	FALSE	-		
							Condition maximum fuel level for diagnostic function					
							(					
							fuel level	<	64	l		
							)					
							Condition minimum fuel level for diagnostic function	=	FALSE	-		
							(					
							fuel level	<	7.7	l		
							)					
							)					
							)					
							Fuel level	<	63	l		
							(	<=	35.26	deg C		
							Ambient air temperature					
							Ambient air temperature	>=	-7.04	deg C		
							)					
							Reference value for check of tank pressure sensor for drift stored in this driving cycle	=	TRUE	-		
							(	>	5	sec		
							Engine not stopped after first start					
							Ambient air temperature sensor model is error free	=	TRUE	-		
							Temperature difference for cold start detection for check of tank pressure sensor for drift	<=	9.86	deg C		
							)					
							)					
							)					
							No pending or confirmed DTCs	=	See sheet inhibit tables	-		
							Basic enable conditions met	=	See sheet enable tables	-		
	P0451	Absolute value of tank pressure filtered for offset-diagnosis tank pressure sensor is greater than calibrated threshold	Absolute fuel tank pressure filtered for offset-diagnosis tank pressure sensor	>	1	kPa	Tank pressure sensor start check for offset is fulfilled, which is the following conditions for time	>=	2	sec	continuous	2 Trips
							(					
							Ambient pressure for offset diagnosis is fulfilled	=	TRUE	-		
							(	<=	35.26	deg C		
							Ambient air temperature					
							Ambient air temperature	>=	-7.04	deg C		
							)					
							(					
							Ambient pressure	>=	70	kPa		
							(	=	FALSE	-		
							Condition maximum fuel level for diagnostic function					
							(					
							fuel level	<	64	l		
							)					
							Condition minimum fuel level for diagnostic function	=	FALSE	-		
							(					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					fuel level	<	7.7	l		
					)					
					)					
					)					
					Vehicle speed conditions are fulfilled for offset diagnosis	=	TRUE	-		
					(Absolute vehicle acceleration for offset-diagnosis of tank pressure sensor	<=	1.997	m/s^2		
					(Vehicle speed	<=	43.50528278	mph		
					Vehicle speed	>=	3.107520199	mph		
					)					
					)					
					Tank pressure is stable for offset diagnosis	=	TRUE	-		
					Fuel tank ventilation adaption factor	<=	5	-		
					(Integrated mass flow for release of offset check tank pressure sensor	>=	34.987	g		
					Engine not stopped after first start	=	TRUE	-		
					)					
					(					
					(Condition refueling is detected	=	FALSE	-		
					(Condition refueling possible	=	FALSE	-		
					OR					
					Difference between unfiltered fuel volume and stopped fuel level	<=	5.1	l		
					)					
					)					
					OR					
					(Condition refueling bit valid	=	FALSE	-		
					(Condition refueling possible	=	TRUE	-		
					OR					
					Refuel indication is active	=	TRUE	-		
					Difference between unfiltered fuel volume and stopped fuel level	>	5.1	l		
					)					
					)					
					Internal error flag CCV error	=	FALSE	-		
					(Difference between filtered tank pressure for offset diagnosis and filtered tank pressure due to no mass flow	>=	0	-		
					)					
					)					
					)					
					CPV plausibility check is successful	=	TRUE	-		
					(					
					(					
					(Absolute vehicle acceleration for offset-diagnosis tank pressure sensor	<=	1.997	m/s^2		
					Canister vent valve (CVV) commanded open	=	TRUE	-		
					Low manifold ambient pressure	<=	0.703125			
					Internal error flag CCV error	=	FALSE	-		
					)					
					for time	>=	5	sec		
					)					
					Timer for calculation of reference tank pressure	>=	5	sec		
					(Counter CPV-plausibility-checks	<	5	-		
					(CPV active for plausibility check	=	FALSE	-		
					Pressure from open CPV	=	TRUE	-		
					max. deviation 1. reference value to 2. reference value tank pressure	<=	0.050049	kPa		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 — TEST GROUP: KGMXV04.2088 — EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					minimum change for pressure because of CPV open and close	>= 0.050049 kPa		
					)			
					)			
					)			
					No pending or confirmed DTCs	= See sheet inhibit tables -		
					Basic enable conditions met	= See sheet enable tables -		
	P0451	Difference between Max and Min purge mass flow for incremental check of tank pressure sensor greater than a calibrated threshold	Difference between Max and Min purge mass flow for incremental check of tank pressure sensor	>= 0.416666667 g/sec	Condition start increment check of tank pressure sensor	= TRUE -	continuous	2 Trips
					(			
			and		Vehicle speed	>= 0 mph		
			Difference between Max and Min fuel tank pressure during incremental check of tank pressure sensor	< 0 kPa	(	<= 49.96 deg C		
					Ambient air temperature			
					Ambient air temperature	>= -7.04 deg C		
					)			
					(			
					Ambient pressure	>= 70 kPa		
					(	= FALSE -		
					Condition maximum fuel level for diagnostic function			
					(			
					Fuel level	< 64 l		
					)			
					Condition minimum fuel level for diagnostic function	= FALSE -		
					(			
					Fuel level	< 7.7 l		
					)			
					)			
					EVAP purge flow	> 0 -		
					Manifold ambient pressure	<= 0.804688 kPa		
					(	<= 1.300049 kPa		
					Measured tank pressure			
					Measured tank pressure	>= -1.199951 kPa		
					)			
					No pending or confirmed DTCs	= See sheet inhibit tables -		
					Basic enable conditions met	= See sheet enable tables -		
	P0454	Tank pressure difference in tank leak diagnosis greater than a calibrated threshold for a calibrated period of time	Tank pressure difference in tank leak diagnosis	>= 1 kPa	(	= TRUE -	20 sec continuous	2 Trips
					Canister vent valve (CVV) commanded open			
					for time	>= 4 sec		
					)			
					Vehicle idle speed control condition	= TRUE -		
					(			
					(	>= 0		
					Engine speed deviation			
					OR			
					Vehicle is in idle condition which is the following conditions for time	>= 0.5 sec		
					(			
					(			
					Difference between propulsion torque of cruise control and driver torque propulsion after step limitation	< 0.5 Nm		
					OR			
					Coordinated status of acceleration request	= FALSE -		
					)			
					Difference between minimum wheel torque with internal combustion engine firing and driver torque value after limitation	>= 0 Nm		
					)			
					)			
					Overrun fuel cutoff is released	= FALSE -		
					)			
					(	<= 49.96 deg C		
					Ambient air temperature			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Ambient air temperature) Vehicle speed No pending or confirmed DTCs Basic enable conditions met	>= -7.04 deg C <= 3.107520199 mph = See sheet inhibit tables - = See sheet enable tables -		
Fuel Tank Pressure Sensor (S1 CAN)	U18A2	Detects when the time since the last message from the Fuel Pump Driver Control Module for the frame FTZM_Information_1_S1 was received is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the Fuel Pump Driver Control Module was received is greater than a supervision timeout value	= TRUE - -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	1 sec continuous	2 Trips
	U18A2	Detects when the time since the last message from the Fuel Pump Driver Control Module for the frame FTZM_Information_11_S1 was received is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the Fuel Pump Driver Control Module was received is greater than a supervision timeout value	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	1 sec continuous	2 Trips
	U18A2	Detects when the time since the last message from the Fuel Pump Driver Control Module for the frame FTZM_Information_2_S1 was received is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the Fuel Pump Driver Control Module was received is greater than a supervision timeout value	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	1 sec continuous	2 Trips
	U18A2	Detects when the time since the last message from the Fuel Pump Driver Control Module for the frame FTZM_Information_3_S1 was received is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the Fuel Pump Driver Control Module was received is greater than a supervision timeout value	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	1 sec continuous	2 Trips
	U18A2	Detects when the time since the last message from the Fuel Pump Driver Control Module for the frame FTZM_Information_4_S1 was received is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the Fuel Pump Driver Control Module was received is greater than a supervision timeout value	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	1 sec continuous	2 Trips
	U18A2	Detects when the time since the last message from the Fuel Pump Driver Control Module for the frame FTZM_Information_5_S1 was received is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the Fuel Pump Driver Control Module was received is greater than a supervision timeout value	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	1 sec continuous	2 Trips
	U18A2	Detects when the time since the last message from the Fuel Pump Driver Control Module for the frame FTZM_Information_7_S1 was received is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the Fuel Pump Driver Control Module was received is greater than a supervision timeout value	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	1 sec continuous	2 Trips
	U18A2	Detects when the time since the last message from the Fuel Pump Driver Control Module for the frame FTZM_Information_8_S1 was received is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the Fuel Pump Driver Control Module was received is greater than a supervision timeout value	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	1 sec continuous	2 Trips
	U18A2	Detects when the time since the last message from the Fuel Pump Driver Control Module for the frame FTZM_Information_9_S1 was received is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the Fuel Pump Driver Control Module was received is greater than a supervision timeout value	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	1 sec continuous	2 Trips
Fuel Level Sensor 1 (S1 CAN)	P0463	Detects Fuel Level Sensor of primary tank Signal range check - High	Raw voltage value from the fuel level sensor of primary tank	> 2.801 V	Ignition is ON	= TRUE -	2 sec continuous	2 Trips

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required			MIL Illum.
			Same as:				No pending or confirmed DTCs	=	See sheet inhibit tables	-				
			Primary tank fuel level value	>	95.1	%	Basic enable conditions met	=	see sheet enable tables	-				
	P0462	Detects Fuel Level Sensor of primary tank Signal range check - Low	Raw voltage value from the fuel level sensor of primary tank	<	0.475	V	Ignition is ON	=	TRUE	-	2	sec	continuous	2 Trips
			Same as:				No pending or confirmed DTCs	=	See sheet inhibit tables	-				
			Primary tank fuel level value	<	8.38	%	Basic enable conditions met	=	see sheet enable tables	-				
	P0461	Detects Fuel Level Primary Sender (sensor 1) Performance - sensor stuck	(Consumed fuel volume during test of primary sender	>=	9	l	Engine state: engine running	=	TRUE	-			continuous	2 Trips
			AND				for time		0.2	sec				
			Delta between maximum and minimum sensed fuel level from primary sender during test)	<	3	l	Current fuel level zone is 3 or 4 as given by							
							Fuel level in primary tank	<	35	l				
			OR											
			Distance traveled while in fuel level zone 2	>=	100000	m	Current fuel level zone is 2, as given by							
							Fuel level in primary tank	>=	35	l				
							Fuel level in secondary tank	<=	3.3	l				
							No pending or confirmed DTCs	=	See sheet inhibit tables	-				
							Basic enable conditions met	=	see sheet enable tables	-				
	P1434	Detects difference between period or pulse width of commanded and reference fuel levels	Absolute difference between the Reference Voltage Pulse Width Command value and Sensed Fuel Level Sensor Reference Voltage Pulse Width vale	>	0.025	sec	Ignition is ON	=	TRUE	-	40	events	continuous	2 Trips
			OR				No alive rolling count (ARC) or checksum fault is pending for the serial data message that communicates the sensed fuel level sensor reference voltage period and pulse width values	=	TRUE	-				
			Absolute difference between the Reference Voltage Period Command value and the Sensed Fuel Level Sensor Reference Voltage Period value	>	0.025	sec	Measured fuel level sensor reference voltage period OR pulse are available	=	TRUE	-				
							Basic enable conditions met	=	see sheet enable tables	-				
Fuel Level Sensor 2 (S1 CAN)	P2068	Detects Fuel Level Sensor of secondary tank Signal range check - High	Raw voltage value from the fuel level sensor of secondary tank	>	2.801	V	Ignition is ON	=	TRUE	-	2	sec	continuous	2 Trips
			Same as:				No pending or confirmed DTCs	=	See sheet inhibit tables	-				
			Primary tank fuel level value	>	95.1	%	Basic enable conditions met	=	see sheet enable tables	-				
	P2067	Detects Fuel Level Sensor of secondary tank Signal range check - Low	Raw voltage value from the fuel level sensor of secondary tank	<	0.475	V	Ignition is ON	=	TRUE	-	2	sec	continuous	2 Trips
			Same as:				No pending or confirmed DTCs	=	See sheet inhibit tables	-				
			Primary tank fuel level value	<	8.38	%	Basic enable conditions met	=	see sheet enable tables	-				
	P2066	Detects Fuel Level Secondary Sender (sensor 2) Performance - sensor stuck	Consumed fuel volume during test of secondary sender	>=	9	l	Engine state: engine running	=	TRUE	-			continuous	2 Trips
			AND				for time		0.2	sec				
			Delta between maximum and minimum sensed fuel level from secondary sender during test	<	3	l	Current fuel level zone is 1 or 3 as given by							
							Fuel level in secondary tank	>=	3.3	l				

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required			MIL Illum.
			OR											
			Distance traveled while in fuel level zone 2	>=	100000	m	Current fuel level zone is 2, as given by							
							Fuel level in primary tank	>=	35	l				
							Fuel level in secondary tank	<=	3.3	l				
							No pending or confirmed DTCs	=	See sheet inhibit tables	-				
							Basic enable conditions met	=	see sheet enable tables	-				
	P143E	Detects difference between period or pulse width of commanded and reference fuel levels	Absolute difference between the Reference Voltage Pulse Width Command value and Sensed Fuel Level Sensor Reference Voltage Pulse Width vale	>	0.001	sec	Ignition is ON	=	TRUE	-	40	events	continuous	2 Trips
			OR				No alive rolling count (ARC) or checksum fault is pending for the serial data message that communicates the sensed fuel level sensor reference voltage period and pulse width values	=	TRUE	-				
			Absolute difference between the Reference Voltage Period Command value and the Sensed Fuel Level Sensor Reference Voltage Period value	>	0.025	sec	Measured fuel level sensor reference voltage period OR pulse are available	=	TRUE	-				
							Basic enable conditions met	=	see sheet enable tables	-				
Fuel Pressure Sensor	P018D	Detects Fuel Pressure Sensor Signal range check - High	Average raw voltage value of low pressure fuel pressure sensor	>	4.75	V	Ignition ON	=	TRUE	-	1	sec	continuous	2 Trips
			Same as:				Basic enable conditions met	=	see sheet enable tables	-				
			Low fuel pressure value	>	843	kPa								
	P018C	Detects Fuel Pressure Sensor Signal range check - Low	Average raw voltage value of low pressure fuel pressure sensor	<	0.25	V	Ignition ON	=	TRUE	-	1	sec	continuous	2 Trips
			Same as:				Basic enable conditions met	=	see sheet enable tables	-				
			Low pressure fuel value	<	7.05	kPa								
Fuel Pressure Sensor	P018B	Filtered governor low pressure output of fuel system is greater than calibrated threshold for calibrated period of time	Filtered governor low pressure output of fuel system	>	250	kPa	Electrical fuel pump operational mode is in closed loop control	=	TRUE	-	15	sec	continuous	2 Trips
							(							
							Fuel flow demand of electrical fuel pump	>=	0.1	l/h				
							Engine is running state	=	TRUE	-				
							Pre-Supply pump is ON	=	TRUE	-				
							)							
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enable conditions met	=	see sheet enable tables	-				
	P018B	Filtered governor low pressure output of fuel system is lesser than calibrated threshold for calibrated period of time	Filtered governor low pressure output of fuel system	<	-250	kPa	Electrical fuel pump operational mode is in closed loop control	=	TRUE	-	15	sec	continuous	2 Trips
							(							
							Fuel flow demand of electrical fuel pump	>=	0.1	l/h				
							Engine is running state	=	TRUE	-				
							Pre-Supply pump is ON	=	TRUE	-				
							)							
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enable conditions met	=	see sheet enable tables	-				
	P018B	Low pressure fuel system controller deviation is greater than a calibrated threshold for a calibrated period of time	Raw fuel pressure deviation in the low pressure fuel system	>	20	kPa	Fuel pressure sensor signal is valid	=	TRUE	-	0.1	sec	contiuous	2 Trips
			for time	>=	10	sec	means							
			when the above condition is true then				(sensor raw voltage	<	4.75	V				
			Difference of raw low pressure governor maximum set point and minimum set point	<	4	kPa	sensor raw voltage)	>	0.25	V				
			for a time	>=	14	sec	Engine run time	>=	15	sec				
							Electrical fuel pump operational mode is in closed loop control	=	TRUE	-				
							Fuel flow demand of electrical fuel pump	>=	1.0	l/h				
							Fuel flow demand of electrical fuel pump	<=	100	l/h				
							Fuel level	>=	2	l				

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
							No pending or confirmed DTCs	=	see sheet inhibit tables			
							Basic enable conditions met	=	see sheet enable tables			
Camshaft Position Sensor - Intake B1	P0343	Camshaft sensor signal circuit high - Detects no signal error - high level at the inlet camshaft sensor at bank 1 by monitoring camshaft revolutions when there is no new edges detected and the signal level during transition to no signal state is high	Crankshaft signals	>=	8	revs	Ignition ON	=	TRUE	-	continuous	2 Trips
			Camshaft signal level when there is a transition to no signal state	=	permanently high	-	Crankshaft signal with gap is detected	=	TRUE	-		
							Back rotating engine is not detected	=	TRUE	-		
							No pending or confirmed DTCs	=	See sheet inhibit tables	-		
							Basic enable conditions met	=	See sheet enable tables	-		
	P0342	Camshaft sensor signal circuit low - Detects no signal error - low level at the inlet camshaft sensor at bank 1 by monitoring camshaft revolutions when there is no new edges detected and the signal level during transition to no signal state is low	Crankshaft signals	>=	8	revs	Ignition ON	=	TRUE	-	continuous	2 Trips
			Camshaft signal level when there is a transition to no signal state	=	permanently low	-	Crankshaft signal with gap is detected	=	TRUE	-		
							Back rotating engine is not detected	=	TRUE	-		
							No pending or confirmed DTCs	=	See sheet inhibit tables	-		
							Basic enable conditions met	=	See sheet enable tables	-		
Camshaft Position Sensor - Intake B1	P0341	Camshaft sensor signal rationality check - Detection of implausible crankshaft sensor operation by detecting incorrect camshaft sensor signal patterns - inlet camshaft sensor bank 1	(Length of the acquired camshaft segment is wrong	=	TRUE	-	Ignition ON	=	TRUE	-	continuous	2 Trips
			OR No matching of camshaft signal table and reference table found because of disturbances	=	TRUE	-	Crankshaft signal with gap is detected	=	TRUE	-		
							Back rotating engine is not detected	=	TRUE	-		
			OR				No pending or confirmed DTCs	=	See sheet inhibit tables	-		
			Sequence of entries in the signal table does not match with the reference table	=	TRUE	-	Basic enable conditions met	=	See sheet enable tables	-		
			OR Number of erroneous edge positions has exceeded the maximum tolerance)	=	TRUE	-						
			AND Defect counter	>=	20	revs						
Camshaft Position Sensor - Intake B2	P0348	Camshaft sensor signal circuit high - Detects no signal error - high level at the inlet camshaft sensor at bank 2 by monitoring camshaft revolutions when there is no new edges detected and the signal level during transition to no signal state is high	Crankshaft signals	>=	8	revs	Ignition ON	=	TRUE	-	continuous	2 Trips
			Camshaft signal level when there is a transition to no signal state	=	permanently high	-	Crankshaft signal with gap is detected	=	TRUE	-		
							Back rotating engine is not detected	=	TRUE	-		
							No pending or confirmed DTCs	=	See sheet inhibit tables	-		
							Basic enable conditions met	=	See sheet enable tables	-		
	P0347	Camshaft sensor signal circuit low - Detects no signal error - low level at the inlet camshaft sensor at bank 2 by monitoring camshaft revolutions when there is no new edges detected and the signal level during transition to no signal state is low	Crankshaft signals	>=	8	revs	Ignition ON	=	TRUE	-	continuous	2 Trips
			Camshaft signal level when there is a transition to no signal state	=	permanently low	-	Crankshaft signal with gap is detected	=	TRUE	-		
							Back rotating engine is not detected	=	TRUE	-		
							No pending or confirmed DTCs	=	See sheet inhibit tables	-		
							Basic enable conditions met	=	See sheet enable tables	-		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
	P0346	Camshaft sensor signal rationality check - Detection of implausible crankshaft sensor operation by detecting incorrect camshaft sensor signal patterns - inlet camshaft sensor bank 2	(Length of the acquired camshaft segment is wrong	= TRUE -	Ignition ON	= TRUE -	continuous	2 Trips
			OR No matching of camshaft signal table and reference table found because of disturbances	= TRUE -	Crankshaft signal with gap is detected	= TRUE -		
					Back rotating engine is not detected	= TRUE -		
			OR Sequence of entries in the signal table does not match with the reference table	= TRUE -	No pending or confirmed DTCs	= See sheet inhibit tables -		
			OR Number of erroneous edge positions has exceeded the maximum tolerance)	= TRUE -	Basic enable conditions met	= See sheet enable tables -		
			AND Defect counter	>= 20 revs				
Camshaft Position Sensor - Exhaust B1	P0368	Camshaft sensor signal circuit high - Detects no signal error - high level at the outlet camshaft sensor at bank 1 by monitoring camshaft revolutions when there is no new edges detected and the signal level during transition to no signal state is high	Crankshaft signals	>= 8 revs	Ignition ON	= TRUE -	continuous	2 Trips
			Camshaft signal level when there is a transition to no signal state	= permanently high -	Crankshaft signal with gap is detected	= TRUE -		
					Back rotating engine is not detected	= TRUE -		
					No pending or confirmed DTCs	= See sheet inhibit tables -		
					Basic enable conditions met	= See sheet enable tables -		
	P0367	Camshaft sensor signal circuit low - Detects no signal error - low level at the outlet camshaft sensor at bank 1 by monitoring camshaft revolutions when there is no new edges detected and the signal level during transition to no signal state is low	Crankshaft signals	>= 8 revs	Ignition ON	= TRUE -	continuous	2 Trips
			Camshaft signal level when there is a transition to no signal state	= 0 -	Crankshaft signal with gap is detected	= TRUE -		
					Back rotating engine is not detected	= TRUE -		
					No pending or confirmed DTCs	= See sheet inhibit tables -		
					Basic enable conditions met	= See sheet enable tables -		
	P0366	Camshaft sensor signal rationality check - Detection of implausible crankshaft sensor operation by detecting incorrect camshaft sensor signal patterns - outlet camshaft sensor bank 1	(Length of the acquired camshaft segment is wrong	= TRUE -	Ignition ON	= TRUE -	continuous	2 Trips
			OR No matching of camshaft signal table and reference table found because of disturbances	= TRUE -	Crankshaft signal with gap is detected	= TRUE -		
					Back rotating engine is not detected	= TRUE -		
			OR		No pending or confirmed DTCs	= See sheet inhibit tables -		
			Sequence of entries in the signal table does not match with the reference table	= TRUE -	Basic enable conditions met	= See sheet enable tables -		
			OR Number of erroneous edge positions has exceeded the maximum tolerance)	= TRUE -				
			AND Counter for signal disturbance error after pattern matching	>= 20 revs				
Camshaft Position Sensor - Exhaust B2	P0393	Camshaft sensor signal circuit high - Detects no signal error - high level at the outlet camshaft sensor at bank 2 by monitoring camshaft revolutions when there is no new edges detected and the signal level during transition to no signal state is high	Crankshaft signals	>= 8 revs	Ignition ON	= TRUE -	continuous	2 Trips
			Camshaft signal level when there is a transition to no signal state	= permanently high -	Crankshaft signal with gap is detected	= TRUE -		
					Back rotating engine is not detected	= TRUE -		
					No pending or confirmed DTCs	= See sheet inhibit tables -		
					Basic enable conditions met	= See sheet enable tables -		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
	P0392	Camshaft sensor signal circuit low - Detects no signal error - low level at the outlet camshaft sensor at bank 2 by monitoring camshaft revolutions when there is no new edges detected and the signal level during transition to no signal state is low	Crankshaft signals	>= 8 revs	Ignition ON	= TRUE -	continuous	2 Trips
			Camshaft signal level when there is a transition to no signal state	= permanently low -	Crankshaft signal with gap is detected	= TRUE -		
					Back rotating engine is not detected	= TRUE -		
					No pending or confirmed DTCs	= See sheet inhibit tables -		
					Basic enable conditions met	= See sheet enable tables -		
	P0391	Camshaft sensor signal rationality check - Detection of implausible crankshaft sensor operation by detecting incorrect camshaft sensor signal patterns - outlet camshaft sensor bank 2	(Length of the acquired camshaft segment is wrong	= TRUE -	Ignition ON	= TRUE -	continuous	2 Trips
			OR		Crankshaft signal with gap is detected	= TRUE -		
			No matching of camshaft signal table and reference table found because of disturbances	= TRUE -	Back rotating engine is not detected	= TRUE -		
			OR		No pending or confirmed DTCs	= See sheet inhibit tables -		
			Sequence of entries in the signal table does not match with the reference table	= TRUE -	Basic enable conditions met	= See sheet enable tables -		
			OR					
			Number of erroneous edge positions has exceeded the maximum tolerance	= TRUE -				
			)					
			AND					
			Defect counter	>= 20 revs				
Crankshaft Position Sensor	P0335	Crankshaft signal rationality check - monitoring of crankshaft missing signal against camshaft signal	Crankshaft signal is not available	= TRUE -	Engine speed based on camshaft is above the lower plausible limit	= FALSE -	3 camshaft revolutions continuous	1 Trip
					Engine speed based on camshaft is below the higher plausible limit	= FALSE -		
					Engine speed based on camshaft is below maximum engine speed	= FALSE -		
					Camshaft signal is valid	= TRUE -		
					(			
					(			
					(			
					Vehicle speed	< 0.62150404 mph		
					Vehicle speed	> 15.53760099 mph		
					)			
					OR			
					(			
					Engine speed	> 550 rpm		
					)			
					)			
					(			
					(			
					Engine speed	> 550 rpm		
					Synchronization check is completed	= TRUE -		
					)			
					OR			
					(			
					Engine speed	= 0 rpm		
					OR			
					Engine is ready and waiting for engine speed	= TRUE -		
					)			
					)			
					)			
					OR			
					Starter is active and starter signal is available	=		
					)			
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
Crankshaft Position Sensor	P0336	**Path 1:** Crankshaft signal rationality check - detection of implausible crankshaft sensor operation by detecting incorrect crank sensor signal patterns.	Gap found in crankshaft signal	= FALSE -	(		20 events continuous	1 Trip
			Crankshaft signal disturbance is found	= TRUE -	(			
			Engine is in backup crankshaft mode	= TRUE -	(			
					Vehicle speed	> 0.62150404 mph		
					Vehicle speed	< 15.53760099 mph		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					)			
					OR			
					(			
					Engine speed	> 550 rpm		
					)			
					)			
					(			
					(			
					Engine speed	> 550 rpm		
					Synchronization check is completed	= TRUE -		
					)			
					OR			
					(			
					Engine speed	= 0 rpm		
					OR			
					Engine is ready and waiting for engine speed	= TRUE -		
					)			
					)			
					)			
					OR			
					Starter is active and starter signal is available	=		
					)			
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
	P0336	**Path 2:** Crankshaft signal rationality check - Range check of DGI pulse width	Error detected in the range of pulse width from DGI sensor	= TRUE -	Ignition is ON	= TRUE -	10 events	
					Basic enable conditions met	= see sheet enable tables -		
	P034A	Wrong engine stop position detected. After camshaft/crankshaft synchronization a too large of angle difference was detected at the following crankshaft gap.	Absolute value of difference between angle set by engine stop position detection and angle at crankshaft gap	>= 20.0 degrees	Ignition is ON	= TRUE -	10 events continuous	2 Trips
			Absolute value of difference between angle set by engine stop position detection and angle at crankshaft gap	<= 360 - A degrees	Basic enable conditions met	= see sheet enable tables -		
			where A is threshold for angle of re-synchronization after start by engine stop position for the error entry of DGI	= 20.0 degrees				
	P034B	Crankshaft signal rationality check - Detection of reverse rotation	Engine is rotating in reverse direction	= TRUE -	Engine speed based on a camshaft-revolution	> 2000 rpm	10 events continuous	2 Trips
					Basic enable conditions met	= see sheet enable tables -		
Crankshaft to Intanke Camshaft Correlation - B1	P0016	Rationality check: Crankshaft position - intake camshaft position allocation Bank 1	(Average of angular offset between camshaft and crankshaft	> 4.5044 degrees	Number of camshaft revolutions	>= 10	2 camshaft revs	2 Trips
			OR		Back rotating engine	= FALSE -		
			Average of angular offset between camshaft and crankshaft)	< -14.502 degrees	NOTE: Pulse length indicates the direction of rotation: 45µs forward rotating shaft, 90µs backward rotating shaft			
					Four crankshaft revolutions are complete without any error on crankshaft or camshaft signal and no sync lost	= TRUE -		
					Monitoring is calibrated as active	= TRUE -		
					No signal loss failure or signal disturbance is stored for the camshaft in question	= TRUE -		
					Intake camshaft: Edge adaptation request	= TRUE -		
Crankshaft to Intake Camshaft Correlation - B2	P0018	Rationality check: Crankshaft position - intake camshaft position allocation Bank 2	(Average of angular offset between camshaft and crankshaft	> 4.5044 degrees	Number of camshaft revolutions	>= 10	2 camshaft revs	2 Trips
			OR		Back rotating engine	= FALSE -		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 — TEST GROUP: KGMXV04.2088 — EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
			Average of angular offset between camshaft and crankshaft)	< -14.502 degrees	NOTE: Pulse length indicates the direction of rotation: 45µs forward rotating shaft, 90µs backward rotating shaft			
					Four crankshaft revolutions are complete without any error on crankshaft or camshaft signal and no sync lost	= TRUE -		
					Monitoring is calibrated as active	= TRUE -		
					No signal loss failure or signal disturbance is stored for the camshaft in question	= TRUE -		
					Intake camshaft: Edge adaptation request	= TRUE -		
Crankshaft to Exhaust Camshaft Correlation - B1	P0017	Rationality check: Crankshaft position - exhaust camshaft position allocation Bank 1	(Average of angular offset between camshaft and crankshaft OR	> 4.5044 degrees	Number of camshaft revolutions	>= 10	2 camshaft revs	2 Trips
					Back rotating engine	= FALSE -		
			Average of angular offset between camshaft and crankshaft)	< -14.502 degrees	NOTE: Pulse length indicates the direction of rotation: 45µs forward rotating shaft, 90µs backward rotating shaft			
					Four crankshaft revolutions are complete without any error on crankshaft or camshaft signal and no sync lost	= TRUE -		
					Monitoring is calibrated as active	= TRUE -		
					No signal loss failure or signal disturbance is stored for the camshaft in question	= TRUE -		
					Exhaust camshaft: Edge adaptation request	= TRUE -		
Crankshaft to Exhaust Camshaft Correlation - B2	P0019	Rationality check: Crankshaft position - exhaust camshaft position allocation Bank 2	(Average of angular offset between camshaft and crankshaft OR	> 4.5044 degrees	Number of camshaft revolutions	>= 10	2 camshaft revs	2 Trips
					Back rotating engine	= FALSE -		
			Average of angular offset between camshaft and crankshaft)	< -14.502 degrees	NOTE: Pulse length indicates the direction of rotation: 45µs forward rotating shaft, 90µs backward rotating shaft			
					Four crankshaft revolutions are complete without any error on crankshaft or camshaft signal and no sync lost	= TRUE -		
					Monitoring is calibrated as active	= TRUE -		
					No signal loss failure or signal disturbance is stored for the camshaft in question	= TRUE -		
					Exhaust camshaft: Edge adaptation request	= TRUE -		
Hood Switch Position Sensor	P257F	Diagnosis of Engine Hood Switch Sensor for Out of Range Check - High	Percentage of Reference voltage of Engine Hood Switch Sensor	> 67.8397 %	Ignition is on	= TRUE -	1 sec Continuous	2 Trips
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
	P257E	Diagnosis of Engine Hood Switch Sensor for Out of Range Check - Low	Percentage of Reference voltage of Engine Hood Switch Sensor	< 17.2043 %	Ignition is on	= TRUE -	1 sec Continuous	2 Trips
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
Hood Switch Position Sensor	P257D	Detects if percentage of reference voltage of Engine Hood Switch Sensor is in between the ranges for closed and open Hood positions.	Percentage of Reference voltage of Engine Hood Switch Sensor	> 43.4018 %	Ignition is on	= TRUE -	1 sec Continuous	2 Trips
			Percentage of Reference voltage of Engine Hood Switch Sensor	< 45.7478 %	No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
Ignition Coil Supply Voltage Feedback - B1	P135A	Diagnoses Ignition Coil External Fuse open circuit Bank 1	Voltage at ignition coil side of fuse	= 0 V	Ignition is ON	= TRUE -	40 events continuous	1 Trip
					Basic enable conditions met	= see sheet enable tables -		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Ignition Coil Supply Voltage Feedback - B2	P135B	Diagnoses Ignition Coil External Fuse open circuit Bank 2	Voltage at ignition coil side of fuse	= 0 V	Ignition is ON	= TRUE -	40 events continuous	1 Trip
					Basic enable conditions met	= see sheet enable tables -		
Knock Sensor 1 B1	P0328	Knock sensor 1 short circuit to battery	Filtered knock sensor output	> 4.7 V	Engine speed	> 500 rpm	3 events	
			Where Low pass filter gain − Integration result for short circuit to battery diagnosis	= 0.5				
	P0327	Knock sensor 1 short circuit to ground	Filtered knock sensor output	< 0.2 V	Engine speed	> 500 rpm	3 events	
			Where Low pass filter gain − Integration result for short circuit to ground diagnosis	= 0.5				
	P0325	Knock sensor 1 open circuit	Integration result for open load detection	> 25000	Knock sensor PWM duty cycle applied	> 50 %	3 events	
			Where Low pass filter gain − Integration result for open load diagnosis	0.5	Engine speed	> 500 rpm		
					Engine speed	< 5000 rpm		
					Engine load	> 0 %		
					Engine load	< 1535.977 %		
					SCG & SCB diagnostic enabled	= TRUE -		
	P0326	Knock sensor 1 reference signal rationality check	Normalized reference level of knock control (see Look-Up-Table #P0326-1)	> 0.525 to 1.35 V*ms	Engine coolant temperature at engine start	> 49.96 deg C	multiple	2 Trips
			Debounce counter for knock sensor diagnosis	> 30 Counts	Knock control active	= TRUE -		
					(			
					(Relative charge of air in the cylinder	>= 40.008 %		
					OR			
					(			
					Engine load dynamic for knock detection active (*)	= FALSE -		
					maintained active for time	>= 0.4 sec		
					)			
					)			
					Engine Speed	> 520 rpm		
					Engine start is finished (*)	= TRUE -		
					for			
					number of combustions to deactivate knock control after start end	> 20 Counts		
					Fuel Cut off	= FALSE -		
					)			
					GDI mode stratified is active	= FALSE -		
					)			
					for time	> 0 sec		
					)			
					Enable knock sensor diagnosis	= TRUE -		
					(			
					Knock control synchronization error at phase error	= FALSE -		
					OR			
					State of EPM operation mode should not have valid crankshaft signal present	= FALSE -		
					)			
					Engine load dynamic for knock detection active	= FALSE -		
					(			
					Intake manifold pressure (see Look-Up Table #P0326-2)	>= 10 to 24 kPa		
					Delay for dynamic detection	= 20 -		
					Engine in idle condition (*)_)	= FALSE -		
					maintained active for time	>= 0.8 sec		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Engine speed dynamic for knock detection active	= FALSE -		
					(			
					Engine speed gradient averaged during one working cycle	>= 1000 rpm/s		
					for time	> 0.25 sec		
					)			
					Engine Speed	> 500 rpm		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
Knock Sensor 2 B1	P032D	Knock sensor 3 short circuit to battery	Filtered knock sensor output	> 4.7 V	Engine speed	> 500 rpm	3 events	
			Where Low pass filter gain − Integration result for short circuit to battery diagnosis	= 0.5				
	P032C	Knock sensor 3 short circuit to ground	Filtered knock sensor output	< 0.2 V	Engine speed	> 500 rpm	3 events	
			Where Low pass filter gain − Integration result for short circuit to ground diagnosis	= 0.5				
Knock Sensor 2 B1	P032A	Knock sensor 3 open circuit	Integration result for open load detection	> 25000	Knock sensor PWM duty cycle applied	> 50 %	3 events	
			Where Low pass filter gain − Integration result for open load diagnosis	= 0.5	Engine speed	> 500 rpm		
					Engine speed	< 5000 rpm		
					Engine load	> 0 %		
					Engine load	< 1535.977 %		
					SCG & SCB diagnostic enabled	= TRUE -		
	P032B	Knock sensor 3 reference signal rationality check	Normalized reference level of knock control (see Look-Up-Table #P0326-1)	> 0.525 to 1.35 V*ms	Engine coolant temperature at engine start	> 49.96 deg C	multiple	2 Trips
			Debounce counter for knock sensor diagnosis	> 30 Counts	Knock control active	= TRUE -		
					(			
					(			
					(			
					(	>= 40.008 %		
					Relative charge of air in the cylinder			
					OR			
					(			
					Engine load dynamic for knock detection active (*)	= FALSE -		
					maintained active for time	>= 0.4 sec		
					)			
					)			
					Engine Speed	> 520 rpm		
					Engine start is finished (*)	= TRUE -		
					for			
					number of combustions to deactivate knock control after start end	> 20 Counts		
					Fuel Cut off	= FALSE -		
					)			
					GDI mode stratified is active	= FALSE -		
					)			
					for time	> 0 sec		
					)			
					Enable knock sensor diagnosis	= TRUE -		
					(			
					Knock control synchronization error at phase error	= FALSE -		
					OR			
					State of EPM operation mode should not have valid crankshaft signal present	= FALSE -		
					)			
					Engine load dynamic for knock detection active	= FALSE -		
					(			
					Intake manifold pressure (see Look-Up Table #P0326-2)	>= 10 to 24 kPa		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 TEST GROUP: KGMXV04.2088 EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required		MIL Illum.
							Delay for dynamic detection	=	20	-			
							Engine in idle condition (*)	=	FALSE	-			
							)						
							maintained active for time	>=	0.8	sec			
							Engine speed dynamic for knock detection active	=	FALSE	-			
							(						
							Engine speed gradient averaged during one working cycle	>=	1000	rpm/sec			
							for time	>	0.25	sec			
							)						
							Engine Speed	>	500	rpm			
							No pending or confirmed DTCs	=	see sheet inhibit tables	-			
							Basic enable conditions met	=	see sheet enable tables	-			
Knock Sensor 1 B2	P0333	Knock sensor 2 short circuit to battery	Filtered knock sensor output	>	4.7	V	Engine speed	>	500	rpm	3	events	
			Where Low pass filter gain − Integration result for short circuit to battery diagnosis	=	0.5								
	P0332	Knock sensor 2 short circuit to ground	Filtered knock sensor output	<	0.2	V	Engine speed	>	500	rpm	3	events	
			Where Low pass filter gain − Integration result for short circuit to ground diagnosis	=	0.5								
Knock Sensor 1 B2	P0330	Knock sensor 2 open circuit	Integration result for open load detection	>	25000		Knock sensor PWM duty cycle applied	>	50	%	3	events	
			Where Low pass filter gain − Integration result for open load diagnosis	=	0.5		Engine speed	>	500	rpm			
							Engine speed	<	5000	rpm			
							Engine load	>	0	%			
							Engine load	<	1535.977	%			
							SCG & SCB diagnostic enabled	=	TRUE	-			
	P0331	Knock sensor 2 reference signal rationality check	Normalized reference level of knock control (see Look-Up-Table #P0326-1)	>	0.525 to 1.35	V*ms	Engine coolant temperature at engine start	>	49.96	deg C		multiple	2 Trips
			Debounce counter for knock sensor diagnosis	>	30	Counts	Knock control active	=	TRUE	-			
							(						
							(						
							(						
							(Relative charge of air in the cylinder	>=	40.008	%			
							OR						
							(						
							Engine load dynamic for knock detection active (*)	=	FALSE	-			
							maintained active for time	>=	0.4	sec			
							)						
							)						
							Engine Speed	>	520	rpm			
							Engine start is finished (*)	=	TRUE	-			
							for number of combustions to deactivate knock control after start end	>	20	Counts			
							Fuel Cut off	=	FALSE	-			
							)						
							GDI mode stratified is active	=	FALSE	-			
							)						
							for time	>	0	sec			
							)						
							Enable knock sensor diagnosis	=	TRUE	-			
							(						
							Knock control synchronization error at phase error	=	FALSE	-			
							OR						

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					State of EPM operation mode should not have valid crankshaft signal present	= FALSE -		
					)			
					Engine load dynamic for knock detection active	= FALSE -		
					(			
					Intake manifold pressure (see Look-Up Table #P0326-2)	>= 10 to 24 kPa		
					Delay for dynamic detection	= 20 -		
					Engine in idle condition (*))	= FALSE -		
					maintained active for time	>= 0.8 sec		
					Engine speed dynamic for knock detection active	= FALSE -		
					(			
					Engine speed gradient averaged during one working cycle	>= 1000 rpm/s		
					for time	> 0.25 sec		
					)			
					Engine Speed	> 500 rpm		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
Knock Sensor 2 B2	P033D	Knock sensor 3 short circuit to battery	Filtered knock sensor output	> 4.7 V	Engine speed	> 500 rpm	3 events	
			Where Low pass filter gain − Integration result for short circuit to battery diagnosis	= 0.5				
	P033C	Knock sensor 3 short circuit to ground	Filtered knock sensor output	< 0.2 V	Engine speed	> 500 rpm	3 events	
			Where Low pass filter gain − Integration result for short circuit to ground diagnosis	= 0.5				
Knock Sensor 2 B2	P033A	Knock sensor 3 open circuit	Integration result for open load detection	> 25000	Knock sensor PWM duty cycle applied	> 50 %	3 events	
			Where Low pass filter gain − Integration result for open load diagnosis	= 0.5	Engine speed	> 500 rpm		
					Engine speed	< 5000 rpm		
					Engine load	> 0 %		
					Engine load	< 1535.977 %		
					SCG & SCB diagnostic enabled	= TRUE -		
	P033B	Knock sensor 4 reference signal rationality check	Normalized reference level of knock control (see Look-Up-Table #P0326-1)	> 0.525 to 1.35 V*ms	Engine coolant temperature at engine start	> 49.96 deg C	multiple	2 Trips
			Debounce counter for knock sensor diagnosis	> 30 Counts	Knock control active	= TRUE -		
					(			
					(			
					(			
					(	>= 40.008 %		
					Relative charge of air in the cylinder			
					OR			
					(			
					Engine load dynamic for knock detection active (*)	= FALSE -		
					maintained active for time	>= 0.4 sec		
					)			
					)			
					Engine Speed	> 520 rpm		
					Engine start is finished (*) for	= TRUE -		
					number of combustions to deactivate knock control after start end	> 20 Counts		
					Fuel Cut off	= FALSE -		
					)			
					GDI mode stratified is active	= FALSE -		
					)			
					for time	> 0 sec		
					)			
					Enable knock sensor diagnosis	= TRUE -		
					(			
					Knock control synchronization error at phase error	= FALSE -		
					OR			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					State of EPM operation mode should not have valid crankshaft signal present	= FALSE -		
					)			
					Engine load dynamic for knock detection active	= FALSE -		
					(			
					Intake manifold pressure (see Look-Up Table #P0326-2)	>= 10 to 24 kPa		
					Delay for dynamic detection	= 20 -		
					Engine in idle condition (*)	= FALSE -		
					)			
					maintained active for time	>= 0.8 sec		
					Engine speed dynamic for knock detection active	= FALSE -		
					(			
					Engine speed gradient averaged during one working cycle	>= 1000 rpm/sec		
					for time	> 0.25 sec		
					)			
					Engine Speed	> 500 rpm		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
Diagnosis knock detection signal evaluation	P06B6	**Path 1:** Monitoring of the number of measurement values	Absolute difference of estimated and measured sampled signals in the measuring window	> 30 counts	**General release conditions for knock sensor line diagnostics:**		continuous	2 Trips
					Knock sensor diagnosis is active			
			for number of counts (signal evaluation errors (combustion) within obersavtion period)	> 48 counts	Engine coolant temperature at engine start	> 49.96 deg C		
			Observation period	= 800 combustion strokes	Knock control active			
					(			
					(			
					Relative charge of air in the cylinder	>= 40.008 %		
					OR			
					(			
					Additional load dynamics retard exceeded:			
					Intake manifold pressure (see Look-Up Table #P0326-2)	>= 10 to 24 kPa		
					Delay for dynamic detection	= 0.02 sec		
					Idle speed from driver sight	= FALSE -		
					)			
					for a time	<= 0.4 sec		
					)			
					Engine Speed	> 520 rpm		
					End of engine start is reached	= TRUE -		
					for a number of combustions to deactivate knock control after start end	>= 20 Counts		
					Fuel Cut off	= FALSE -		
					GDI mode stratified is active	= FALSE -		
					)			
					for time	> 0 sec		
					Enable knock sensor diagnosis:			
					Knock control synchronisation error at phase error	= FALSE -		
					No valid crankshaft signal present (backup using camshaft signal)	= FALSE -		
					No load dynamics for knock detection active:			
					(			
					Intake manifold pressure (see Look-Up Table #P0326-2)	< 10 to 24 kPa		
					Delay for dynamic detection	= 0.02 sec		
					Idle speed from driver sight	= TRUE -		
					)			
					for time	> 0.8 sec		
					No speed dynamics for knock detection active:			
					Absolute value of engine speed gradient during one working cycle	< 1000 1/min/s		
					Engine speed	>= 500 rpm		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Signal evaluation combustion released, which is the following conditions:			
					Absolute value of engine speed gradient calculated over current crankshaft segment	< 1000 rpm/s		
					Estimated number of measuring values in the measuring window	<= 200 counts		
					Synchronisation based on engine shut off position or full synchro information	= TRUE -		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enabling conditions are met	= see sheet enable tables -		
		Path 2: Monitoring of position and length of the measurement window	Number of signal evaluation errors (position and length of the measuring window) within obersavtion period	> 2 counts	**General release conditions for knock sensor line diagnostics:**			
					Knock sensor diagnosis is active			
			Observation period	= 3 sec	Engine coolant temperature at engine start	> 49.96 deg C		
					Knock control active			
					(			
					(			
					Relative charge of air in the cylinder	>= 40.008 %		
					OR			
					(			
					Additional load dynamics retard exceeded:			
					Intake manifold pressure (see Look-Up Table #P0326-2)	>= 10 to 24 kPa		
					Delay for dynamic detection	= 0.02 sec		
					Idle speed from driver sight	= FALSE -		
					)			
					for a time	<= 0.4 sec		
					)			
					Engine Speed	> 520 rpm		
					End of engine start is reached	= TRUE -		
					for a number of combustions to deactivate knock control after start end	>= 20 Counts		
					Fuel Cut off	= FALSE -		
					GDI mode stratified is active	= FALSE -		
					)			
					for time	> 0 sec		
					Enable knock sensor diagnosis:			
					Knock control synchronisation error at phase error	= FALSE -		
					No valid crankshaft signal present (backup using camshaft signal)	= FALSE -		
					No load dynamics for knock detection active:			
					(			
					Intake manifold pressure (see Look-Up Table #P0326-2)	< 10 to 24 kPa		
					Delay for dynamic detection	= 0.02 sec		
					Idle speed from driver sight	= TRUE -		
					)			
					for time	> 0.8 sec		
					No speed dynamics for knock detection active:			
					Absolute value of engine speed gradient during one working cycle	< 1000 1/min/s		
					Engine speed	>= 500 rpm		
					Signal evaluation measuring window released, which is the following conditions:			
					ECU Sub-State in DRIVE (*)	= TRUE -		
					Engine speed	> 1000 rpm		
					and			
					Synchronisation completed	= TRUE -		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enabling conditions are met	= see sheet enable tables -		
FTZM Module System Voltage	P129C	Monitoring of fuel pump driver control module system for voltage high fault	Fuel Tank Zone Module(FTZM) sensed battery voltage	> 16.02 V	Ignition ON	= TRUE -	5 sec Continuous	2 Trips

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required			MIL Illum.
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enabling conditions are met	=	see sheet enable tables	-				
	P129B	Monitoring of fuel pump driver control module system for voltage low fault	Fuel Tank Zone Module(FTZM) sensed battery voltage	<	10.02	V	Ignition ON	=	TRUE	-	5	sec	Continuous	2 Trips
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enabling conditions are met	=	see sheet enable tables	-				
	P1002	Monitoring of fuel pump driver control module system voltage for its performance fault	Absolute difference between battery voltage and Fuel Tank Zone Module(FTZM) sensed battery voltage	>	3	V	Ignition ON	=	TRUE	-	5	sec	Continuous	2 Trips
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enabling conditions are met	=	see sheet enable tables	-				
FTZM Internal Performance	P1005	Monitoring of FTZM fuel pump driver contol module for too many unexpected resets	Fuel Pump driver contol module too many resets is detected	=	TRUE	-	Ignition ON	=	TRUE	-	0.5	sec	Continuous	2 Trips
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enabling conditions are met	=	see sheet enable tables	-				
	P1255	Monitoring of FTZM fuel pump output for over temperature fault	Fuel Tank Zone Module(FTZM) over temperature is detected	=	TRUE	-	Ignition ON	=	TRUE	-	0.5	sec	Continuous	2 Trips
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enabling conditions are met	=	see sheet enable tables	-				
	P102C	Monitoring of FTZM fuel pump output for phase to phase short circuit fault	Fuel Tank Zone Module(FTZM) fuel pump output is shorted between phase to phase	=	TRUE	-	Ignition ON	=	TRUE	-	0.5	sec	Continuous	2 Trips
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enabling conditions are met	=	see sheet enable tables	-				
FTZM gnition On/Start Switch Circuit	P1007	Monitoring of the FTZM Run/Crank signal for a stuck high condition	FTZM detects that the run/crank signal is stuck high (e.g. 12V)	=	TRUE	-	Ignition ON	=	FALSE	-	40	counts	Continuous	2 Trips
							ECM and CAN bus awake for transmission (meaning CAN awaken by BCM or ECM)	=	TRUE	-				
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enabling conditions are met	=	see sheet enable tables	-				
	P129D	Monitoring of the FTZM Run/Crank signal for a stuck high condition	FTZM detects that the run/crank signal is stuck low (e.g. 0V)	=	TRUE	-	Ignition ON	=	TRUE	-	40	counts	Continuous	2 Trips
							ECM and CAN bus awake for transmission (meaning CAN awaken by BCM or ECM)	=	TRUE	-				
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enabling conditions are met	=	see sheet enable tables	-				
Injection Valve Flyback Voltage - Cyl. 1	P02EE	Plausibility check of injector ADC signal buffer	(				Ignition is ON	=	TRUE	-	20	events	continuous	2 Trips
			ADC buffer signal from beginning of Controlled Valve Operation signal evaluation	<=	15000	-	No pending or confirmed DTCs	=	see sheet inhibit tables	-				

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
			OR ADC buffer signal from end of Controlled Valve Operation signal evaluation)	>= 5000 -	Basic enable conditions met	= see sheet enable tables -		
Injection Valve Flyback Voltage - Cyl. 1	P02EF	Plausibility check of injector ADC signal buffer	(ADC buffer signal from beginning of Controlled Valve Operation signal evaluation OR ADC buffer signal from end of Controlled Valve Operation signal evaluation)	<= 15000 - >= 5000 -	Ignition is ON No pending or confirmed DTCs Basic enable conditions met	= TRUE - = see sheet inhibit tables - = see sheet enable tables -	20 events continuous	2 Trips
Injection Valve Flyback Voltage - Cyl. 1	P02F0	Plausibility check of injector ADC signal buffer	(ADC buffer signal from beginning of Controlled Valve Operation signal evaluation OR ADC buffer signal from end of Controlled Valve Operation signal evaluation)	<= 15000 - >= 5000 -	Ignition is ON No pending or confirmed DTCs Basic enable conditions met	= TRUE - = see sheet inhibit tables - = see sheet enable tables -	20 events continuous	2 Trips
Injection Valve Flyback Voltage - Cyl. 1	P02F1	Plausibility check of injector ADC signal buffer	(ADC buffer signal from beginning of Controlled Valve Operation signal evaluation OR ADC buffer signal from end of Controlled Valve Operation signal evaluation)	<= 15000 - >= 5000 -	Ignition is ON No pending or confirmed DTCs Basic enable conditions met	= TRUE - = see sheet inhibit tables - = see sheet enable tables -	20 events continuous	2 Trips
Injection Valve Flyback Voltage - Cyl. 1	P02F2	Plausibility check of injector ADC signal buffer	(ADC buffer signal from beginning of Controlled Valve Operation signal evaluation OR ADC buffer signal from end of Controlled Valve Operation signal evaluation)	<= 15000 - >= 5000 -	Ignition is ON No pending or confirmed DTCs Basic enable conditions met	= TRUE - = see sheet inhibit tables - = see sheet enable tables -	20 events continuous	2 Trips
Injection Valve Flyback Voltage - Cyl. 1	P02F3	Plausibility check of injector ADC signal buffer	(ADC buffer signal from beginning of Controlled Valve Operation signal evaluation OR ADC buffer signal from end of Controlled Valve Operation signal evaluation)	<= 15000 - >= 5000 -	Ignition is ON No pending or confirmed DTCs Basic enable conditions met	= TRUE - = see sheet inhibit tables - = see sheet enable tables -	20 events continuous	2 Trips
Injection Valve Flyback Voltage - Cyl. 1	P02F4	Plausibility check of injector ADC signal buffer	(ADC buffer signal from beginning of Controlled Valve Operation signal evaluation	<= 15000 -	Ignition is ON No pending or confirmed DTCs	= TRUE - = see sheet inhibit tables -	20 events continuous	2 Trips

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
			OR ADC buffer signal from end of Controlled Valve Operation signal evaluation)	 >= 5000 -	Basic enable conditions met	= see sheet enable tables -		
Injection Valve Flyback Voltage - Cyl. 1	P02F5	Plausibility check of injector ADC signal buffer	(ADC buffer signal from beginning of Controlled Valve Operation signal evaluation OR ADC buffer signal from end of Controlled Valve Operation signal evaluation)	 <= 15000 - >= 5000 -	Ignition is ON No pending or confirmed DTCs Basic enable conditions met	= TRUE - = see sheet inhibit tables - = see sheet enable tables -	20 events continuous	2 Trips
Engine Oil Temperature Sensor	P0198	Diagnosis of engine oil temperature sensor circuit - High	Raw voltage of the oil temperature sensor Fail mV corresponds with oil temperature	> 4.973 V > -46.4 deg C	Ignition is ON	= TRUE -	2 sec continuous	2 Trips
	P0197	Diagnosis of engine oil temperature sensor circuit - Low	Raw voltage of the oil temperature sensor Fail mV corresponds with oil temperature	< 0.334 V < 150 deg C	Ignition is ON	= TRUE -	2 sec continuous	2 Trips
	P0196	Plausibility check of engine oil temperature sensor during cold start - High	Difference between the provided temperature sensors' mean reference value and the measured oil temperature sensor value	> 14.96 deg C	Ignition is on for time Engine running (Engine is synchronized for time) [Engine off time (Engine off timer is state 1 exact time OR Engine off timer is state 2 minimum off time)] for time (Block heater is activated Diagnosis is inhibited by other temperature sensor errors) for time No pending or confirmed DTCs Basic enable conditions met	= TRUE - >= 1 sec = TRUE - = TRUE - = 1 sec >= 28800 sec = TRUE - = TRUE - >= 3 sec = FALSE - = FALSE - >= 0 sec = see sheet inhibit tables - = see sheet enable tables -	Once per driving cycle	2 Trip
	P0196	Plausibility check of engine oil temperature sensor during cold start - Low	Difference between the measured oil temperature sensor value and the provided temperature sensors' mean reference value	> 14.96 deg C	Ignition is on for time Engine running (Engine is synchronized for time) [Engine off time (Engine off timer is state 1 exact time OR Engine off timer is state 2 minimum off time)] for time (Block heater is activated Diagnosis is inhibited by other temperature sensor errors) for time No pending or confirmed DTCs Basic enable conditions met	= TRUE - >= 1 sec = TRUE - = TRUE - = 1 sec >= 28800 sec = TRUE - = TRUE - >= 3 sec = FALSE - = FALSE - >= 0 sec = see sheet inhibit tables - = see sheet enable tables -	Once per driving cycle	2 Trip
Oil Temperature Sensor	P0196	Detects if the difference between measured oil temperature at main gallery and modelled oil temperature at oil gallery is greater than a calibrated threshold for a calibrated amount of time	Difference of measured oil temperature at the main gallery and modelled oil temperature value at oil gallery	> 26.96 deg C	Engine is running	= TRUE -	10 sec continuous	2 Trips

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Blockheater is detected	= FALSE -		
					Oil temperature model value at oil gallery	>= -48.04 deg C		
					Engine speed	>= 0 rpm		
					for time	>= 3 sec		
					No pending or confirmed DTC's	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
	P0196	Detects if the difference between modelled oil temperature at oil gallery and measured oil temperature at main gallery is greater than a calibrated threshold for a calibrated amount of time	Difference of modelled oil temperature value at oil gallery and measured oil temperature at main gallery	> 29.96 deg C	Engine is running	= TRUE -	10 sec continuous	2 Trips
					Blockheater is detected	= FALSE -		
					Oil temperature model value at oil gallery	>= -48.04 deg C		
					Engine speed	>= 0 rpm		
					for time	>= 3 sec		
					No pending or confirmed DTC's	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
	P0199	Diagnosis of Oil Temperature Sensor circuit - Loose connection check	Absolute difference between raw voltage and filtered raw voltage of oil temperature sensor at the main gallery	>= 0.12 V	Ignition is ON	= TRUE -	20 sec continuous	2 Trips
			Raw voltage oil temperature sensor filter rate	= 0.1 sec	Engine Oil Temperature Sensor "A" Circuit Low	= FALSE -		
					Engine Oil Temperature Sensor "A" Circuit High	= FALSE -		
					Basic enable conditions met	= see sheet enable tables -		
	P0523	Monitoring of Engine Oil Pressure Sensor for Signal range check - High	Engine oil pressure sensor voltage	> 4.5 V	Ignition is ON	= TRUE -	1 sec	2 Trips
			Same as:		No pending or confirmed DTCs	= see sheet inhibit tables		
			Engine Oil Pressure	> 0 to 1049.8 kPa	Basic enable conditions met	= see sheet enable tables		
	P0522	Monitoring of Engine Oil Pressure Sensor for Signal range check - Low/Open	Engine oil pressure sensor voltage	< 0.25 V	Ignition is ON	= TRUE -	1 sec	2 Trips
			Same as:		No pending or confirmed DTCs	= see sheet inhibit tables -		
			Engine Oil Pressure	< 0 to 1049.8 kPa	Basic enable conditions met	= see sheet enable tables -		
	P0521	Error: oil pressure sensor is not plausible	**Fail Case #1 Engine Running:**		**Fail Case #1 Engine Running Enable Conditions:**		3 sec	2 Trips
			Relative Oil Pressure	> 500 kPa	Engine speed	< 770 rpm		
					Oil temperature in the oil sump	> 54.96 deg C		
					The high-side switch must be the Closed oil pressure control	= TRUE -		
					Status CrCtl request exceeds driver's request	<= 0		
					Status of forward drive request by driver request	<= 0		
					No active faults associated with the oil pressure sensor (P0522 & P0523)	= TRUE -		
			OR Relative Oil Pressure	< 50 kPa	Engine speed	> 1520 rpm		
					Time after engine start	> 4.96 sec		
					No active faults associated with the oil pressure sensor (P0522 & P0523) and the camshaft sensor (P0321 & P0322)	= TRUE -		
					Basic enable conditions met	= see sheet enable tables -		
			Fail Case #2 After Run:		**Fail Case #2 Engine Off Enable Conditions:**		3 sec	2 Trips
			Absolute value of the Relative Oil Pressure	> 80 kPa	(Current system / ECU substate is in POSTDRIVE	= TRUE -		
					Time since the status SYC_POSTDRIVE was reached)	> 10 sec		
					Oil temperature in the oil sump	> 54.96 deg C		
					No active faults associated with the oil pressure sensor (P0522 & P0523)	= TRUE -		
					Basic enable conditions met	= see sheet enable tables -		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
			Fail Case #3 Before Engine Start: Absolute value of the Relative Oil Pressure	 > 80 kPa	**Fail Case #3 Engine Off Enable Conditions:** Engine off time Engine speed Oil temperature in the oil sump Motor status is cranking No active faults associated with the oil pressure sensor (P0522 & P0523) Basic enable conditions met	 > 10 sec = 0 rpm > 54.96 deg C = TRUE - = TRUE - = see sheet enable tables -	3 sec	2 Trips
Throttle / Accelerator Pedal - Signal 1	P2123	Circuit continuity - circuit high	Accelerator pedal position sensor 1 voltage	>= 4.775 V	Ignition is ON No pending or confirmed DTCs Basic enable conditions met	= TRUE - = see sheet inhibit tables - = see sheet enable tables -	0.2 sec Continuous	1 Trip
	P2122	Circuit continuity - circuit low	Accelerator pedal position sensor 1 voltage	<= 0.28 V	Ignition is ON No pending or confirmed DTCs Basic enable conditions met	= TRUE - = see sheet inhibit tables - = see sheet enable tables -	0.2 sec Continuous	1 Trip
	P2138	Synchronization check	Absolute difference between accelerator pedal position sensor 1 voltage (a) and sensor 2 voltage (b) (see Look-Up-Table #P2138-1) where (a) Maximum Value between accelerator pedal position sensor 1 voltage divided by (d) and (c) (b) Maximum value between accelerator pedal position sensor 2 voltage and (c) (c) Minimum voltage to enable synchronization check (d) Factor between sensor values	> 0.12 to 0.18 V = Max(sensor 1 raw voltage/d,c) V = Max(sensor 2 raw voltage,c) V = 0.424 V = 2 factor	Ignition is ON No pending or confirmed DTCs Basic enable conditions met	= TRUE - = see sheet inhibit tables - = see sheet enable tables -	0.25 sec Continuous	2 Trips
Throttle / Accelerator Pedal - Signal 2	P2128	Circuit continuity - circuit high	Accelerator pedal position sensor 2 voltage	>= 4.775 V	Ignition is ON No pending or confirmed DTCs Basic enable conditions met	= TRUE - = see sheet inhibit tables - = see sheet enable tables -	0.2 sec Continuous	1 Trip
	P2127	Circuit continuity - circuit low	Accelerator pedal position sensor 2 voltage	<= 0.28 V	Ignition is ON No pending or confirmed DTCs Basic enable conditions met	= TRUE - = see sheet inhibit tables - = see sheet enable tables -	0.2 sec Continuous	1 Trip
Throttle Position Sensor - Sensor 1 B1	P0123	Diagnosis of Throttle Position Sensor1 Bank1 for Signal Range Check-High	Raw voltage value of Throttle Position Sensor1 Bank1	> 4.805 V	ECU is in DRIVE state OR ECU is in POSTDRIVE state Request safety fuel cut off SKA bank 1, following condition: (Request reversible safety fuel cut off SKA bank 1, which has following condition: ((Battery voltage for throttle valve operation OR Engine speed) Limp home position not reached bank 1) Irreversible safety fuel cut off SKA bank 1) No pending or confirmed DTCs Basic enable conditions met	= TRUE - = TRUE - = FALSE - = FALSE - = TRUE - > 1000 rpm = FALSE - = FALSE - = see sheet inhibit tables - = see sheet enable tables -	0.14 sec continuous	1 Trip

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
	P0122	Diagnosis of Throttle Position Sensor1 Bank1 for Signal Range Check-Low	Raw voltage value of Throttle Position Sensor1 Bank1	<	0.195	V	ECU is in DRIVE state	=	TRUE	-	0.14 sec continuous	1 Trip
							OR					
							ECU is in POSTDRIVE state	=	TRUE	-		
							Request safety fuel cut off SKA bank 1, following condition:	=	FALSE	-		
							(					
							Request reversible safety fuel cut off SKA bank 1, which has following condition:	=	FALSE	-		
							(					
							(					
							Battery voltage for throttle valve operation sufficient bank 1	=	TRUE	-		
							OR					
							Engine speed	>	1000	rpm		
							)					
							Limp home position not reached bank 1	=	FALSE	-		
							)					
							Irreversible safety fuel cut off SKA bank 1	=	FALSE	-		
							)					
							No pending or confirmed DTCs	=	see sheet inhibit tables	-		
							Basic enable conditions met	=	see sheet enable tables	-		
	P0121	Synchronization check for Throttle Position Sensor1 Bank1 - rationality check against modelled air charge value	(				(	=	TRUE	-	continuous	1 Trip
							ECU is in DRIVE state					
		Deviation of relative actual angle from Throttle Position Sensors	(	>	5 to 6.25	%	OR					
			Absolute difference between relative actual angle calculated based on voltages from sensor 1 and sensor 2 (see Look-Up-Table #P0121-1)									
			)									
			for time	>=	0.14	sec	ECU is in POSTDRIVE state	=	TRUE	-		
							)					
			(	>	9.0234	%	Request safety fuel cut off SKA bank 1, following condition:	=	FALSE	-		
			Absolute difference between relative actual angle calculated based on voltage from sensor 1 and relative air charge signal				(					
			)									
			for time	>=	0.28	sec	(					
			)				Request reversible safety fuel cut off SKA bank 1, which has following condition:	=	FALSE	-		
			OR				(					
			(				Battery voltage for throttle valve operation sufficient bank 1	=	TRUE	-		
		Deviation of relative actual angle from Throttle Position Sensors wrt relative air charge signal	(	>	0	%	OR					
			Absolute difference between relative actual angle calculated based on voltage from sensor 1 and sensor 2 and relative air charge signal									
			)									
			for time	>=	0.36	sec	Engine speed	>	1000	rpm		
			)				)					
			OR				Limp home position not reached bank 1	=	FALSE	-		
		Error in the main charge sensor	Main charge sensor error, following conditions:	=	TRUE	-	)					
			(				Irreversible safety fuel cut off SKA bank 1	=	FALSE	-		
			Condition for error of main filling sensor	=	TRUE	-	)					
			(				Flag for throttle angle calculated from main charge sensor is unthrottled, following condition:	=	FALSE	-		
			Validity of the pressure sensor of the intake manifold bank 1	=	FALSE	-	(					
			Condition for HFM error (without debounce)	=	TRUE	-	Difference between throttle angle calculated from unthrottled mass flow of main charging sensor and throttle valve angle at which the 95 charge is through minimum tolerance for bank1	<	0	%		
			(				)					
			Flag Variant Diagnosis Error bank 1	=	TRUE	-	No pending or confirmed DTCs	=	see sheet inhibit tables	-		
			OR				Basic enable conditions met	=	see sheet enable tables	-		
			Error flag of the signal variation check of the HFM sensor (Bank 2)	=	TRUE	-						
			OR									
			Flag plausible diagnosis error	=	TRUE	-						
			OR									
			Flag to display a physical HFM range error bank 1	=	TRUE	-						
			OR									
			Flag to display a physical HFM range error bank 2	=	TRUE	-						
			OR									

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
			(Validity flag of the measured air mass flow sensor signal for bank 1 OR Validity flag of the measured air mass flow sensor signal for bank 2) Release of the HFM diagnosis of the electrical signal)) for time)	= TRUE - = TRUE - = TRUE - >= 0.14 sec				
Throttle Position Sensor - Sensor 1 B1	U0606	Diagnosis of Throttle Position Sensor 1 Bank 1 for SENT data - Communication Check	Communication error from the SENT Channel of Throttle Position Sensor 1 Bank 1, following conditions: (No signal on the line OR Pulse length of SENT message is out of range OR Calibration pulse of SENT message is out of range)	= TRUE - = TRUE - = TRUE - = TRUE -	(ECU is in DRIVE state OR ECU is in POSTDRIVE state) Request safety fuel cut off SKA bank 1, following condition: ((Request reversible safety fuel cut off SKA bank 1, which has following condition: (Battery voltage for throttle valve operation sufficient bank 1 OR Engine speed) Limp home position not reached bank 1) Irreversible safety fuel cut off SKA bank 1) No pending or confirmed DTCs Basic enable conditions met	= TRUE - = TRUE - = FALSE - = FALSE - = TRUE - > 1000 rpm = FALSE - = FALSE - = see sheet inhibit tables - = see sheet enable tables -	0.12 sec continuous	1 Trip
	U136C	Invalid data from SENT device	No valid data from the SENT Channel of Throttle Position Sensor 1 Bank 1, following conditions: (Error in the monitoring status of SENT driver Bank 1)	= TRUE - = TRUE -	(ECU is in DRIVE state OR ECU is in POSTDRIVE state) Request safety fuel cut off SKA bank 1, following condition: ((Request reversible safety fuel cut off SKA bank 1, which has following condition: (Battery voltage for throttle valve operation sufficient bank 1 OR Engine speed) Limp home position not reached bank 1) Irreversible safety fuel cut off SKA bank 1) No pending or confirmed DTCs Basic enable conditions met	= TRUE - = TRUE - = FALSE - = FALSE - = TRUE - > 1000 rpm = FALSE - = FALSE - = see sheet inhibit tables - = see sheet enable tables -	0.12 sec continuous	1 Trip
Throttle Position Sensor - Sensor 2 B1	P0223	Diagnosis of Throttle Position Sensor2 Bank1 for Signal Range Check-High	Raw voltage value of Throttle Position Sensor2 Bank1	> 4.805 V	ECU is in DRIVE state OR ECU is in POSTDRIVE state Request safety fuel cut off SKA bank 1, following condition: (Request reversible safety fuel cut off SKA bank 1, which has following condition: ((	= TRUE - = TRUE - = FALSE - = FALSE -	0.14 sec continuous	1 Trip

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Battery voltage for throttle valve operation sufficient bank 1	= TRUE -		
					OR			
					Engine speed	> 1000 rpm		
					)			
					Limp home position not reached bank 1	= FALSE -		
					)			
					Irreversible safety fuel cut off SKA bank 1	= FALSE -		
					)			
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
	P0222	Diagnosis of Throttle Position Sensor2 Bank1 for Signal Range Check-Low	Raw voltage value of Throttle Position Sensor2 Bank1	< 0.195 V	ECU is in DRIVE state	= TRUE -	0.14 sec continuous	1 Trip
					OR			
					ECU is in POSTDRIVE state	= TRUE -		
					Request safety fuel cut off SKA bank 1, following condition:	= FALSE -		
					(			
					Request reversible safety fuel cut off SKA bank 1, which has following condition:	= FALSE -		
					(			
					(			
					Battery voltage for throttle valve operation sufficient bank 1	= TRUE -		
					OR			
					Engine speed	> 1000 rpm		
					)			
					Limp home position not reached bank 1	= FALSE -		
					)			
					Irreversible safety fuel cut off SKA bank 1	= FALSE -		
					)			
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
	P0221	Synchronization check for Throttle Position Sensor2 Bank1 - rationality check against modelled air charge value	(		(	= TRUE -	continuous	1 Trip
					ECU is in DRIVE state			
		Deviation of relative actual angle from Throttle Position Sensors	(	> 5 to 6.25 %	OR			
			Absolute difference between relative actual angle calculated based on voltage from sensor 1 and relative actual angle calculated based on voltage from sensor 2 (see Look-Up-Table #P0121-1)					
			Absolute difference between relative actual throttle angle calculated based on voltage from sensor 2 and throttle angle calculated from the main charge sensor (intake manifold pressure sensor	> 9.0234 %	ECU is in POSTDRIVE state	= TRUE -		
			)		)			
			for time	>= 0.28 sec	Request safety fuel cut off SKA bank 1, following condition:	= FALSE -		
					(			
			)		(			
			OR		Request reversible safety fuel cut off SKA bank 1, which has following condition:	= FALSE -		
		Deviation of relative actual angle from Throttle Position Sensors wrt relative air charge signal	Absolute difference between relative actual angle calculated based on voltage from sensor 1 and sensor 2 and relative air charge signal	< 0 %	(			
			for time	>= 0.36 sec	Battery voltage for throttle valve operation sufficient bank 1	= TRUE -		
			OR		OR			
		Error in the main charge sensor	Main charge sensor error, following conditions:	= TRUE -	Engine speed	> 1000 rpm		
			(		)			
			Condition for error of main filling sensor	= TRUE -	Limp home position not reached bank 1	= FALSE -		
			(		)			
			Validity of the pressure sensor of the intake manifold bank 1	= FALSE -	Irreversible safety fuel cut off SKA bank 1	= FALSE -		
			Condition for HFM error (without debounce)	= TRUE -	)			
			(		Flag for throttle angle calculated from main charge sensor is unthrottled, following condition:	= FALSE -		
			Flag Variant Diagnosis Error bank 1	= TRUE -	(			
			OR		Difference between throttle angle calculated from unthrottled mass flow of main charging sensor and throttle valve angle at which the 95 charge is through minimum tolerance for bank1	< 0 %		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required			MIL Illum.
			Error flag of the signal variation check of the HFM sensor (Bank 2)	=	TRUE	-	)							
			OR				No pending or confirmed DTCs	=	see sheet inhibit tables	-				
			Flag plausible diagnosis error	=	TRUE	-	Basic enable conditions met	=	see sheet enable tables	-				
			OR											
			Flag to display a physical HFM range error bank 1	=	TRUE	-								
			OR											
			Flag to display a physical HFM range error bank 2	=	TRUE	-								
			OR											
			(											
			Validity flag of the measured air mass flow sensor signal for bank 1	=	TRUE	-								
			OR											
			Validity flag of the measured air mass flow sensor signal for bank 2	=	TRUE	-								
			)											
			Release of the HFM diagnosis of the electrical signal	=	TRUE	-								
			)											
			)											
			for time	>=	0.14	sec								
			)											
Throttle Position Sensor - Sensor 2 B1	U0607	Diagnosis of Throttle Position Sensor 2 Bank 1 for SENT data - Communication Check	Communication error from the SENT Channel of Throttle Position Sensor 2 Bank 1, following conditions:	=	TRUE	-	(ECU is in DRIVE state	=	TRUE	-	0.12	sec	continuous	1 Trip
			(				OR							
			No signal on the line	=	TRUE	-	ECU is in POSTDRIVE state	=	TRUE	-				
							)							
			OR				Request safety fuel cut off SKA bank 1, following condition:	=	FALSE	-				
			Pulse length of SENT message is out of range	=	TRUE	-	(							
							(							
			OR				Request reversible safety fuel cut off SKA bank 1, which has following condition:	=	FALSE	-				
			Calibration pulse of SENT message is out of range	=	TRUE	-	(							
			)											
							Battery voltage for throttle valve operation sufficient bank 1	=	TRUE	-				
							OR							
							Engine speed	>	1000	rpm				
							)							
							Limp home position not reached bank 1	=	FALSE	-				
							)							
							Irreversible safety fuel cut off SKA bank 1	=	FALSE	-				
							)							
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enable conditions met	=	see sheet enable tables	-				
	U136C	Invalid data from SENT device	No valid data from the SENT Channel of Throttle Position Sensor 2 Bank 1, following conditions:	=	TRUE	-	(ECU is in DRIVE state	=	TRUE	-	0.12	sec	continuous	1 Trip
			(				OR							
			Error in the monitoring status of SENT driver Bank 1	=	TRUE	-	ECU is in POSTDRIVE state	=	TRUE	-				
			)				)							
							Request safety fuel cut off SKA bank 1, following condition:	=	FALSE	-				
							(							
							(							
							Request reversible safety fuel cut off SKA bank 1, which has following condition:	=	FALSE	-				
							(							
							Battery voltage for throttle valve operation sufficient bank 1	=	TRUE	-				
							OR							
							Engine speed	>	1000	rpm				
							)							
							Limp home position not reached bank 1	=	FALSE	-				
							)							
							Irreversible safety fuel cut off SKA bank 1	=	FALSE	-				
							)							
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enable conditions met	=	see sheet enable tables	-				

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 — TEST GROUP: KGMXV04.2088 — EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
Throttle Position Sensor - Sensor 1 B2	P0228	Diagnosis of Throttle Position Sensor1 Bank2 for Signal Range Check-High	Raw voltage value of Throttle Position Sensor1 Bank2	>	4.805	V	ECU is in DRIVE state	=	TRUE	-	0.14 sec continuous	1 Trip
							OR					
							ECU is in POSTDRIVE state	=	TRUE	-		
							Request safety fuel cut off SKA bank 2, following condition:	=	FALSE	-		
							(					
							Irreversible safety fuel cut off SKA bank 2	=	FALSE	-		
							Request reversible safety fuel cut off SKA bank 2, following conditions:	=	FALSE	-		
							(					
							(					
							Battery voltage for throttle valve operation sufficient bank 2	=	TRUE	-		
							OR					
							Engine speed	>	1000	rpm		
							)					
							Limp home position not reached bank 2	=	FALSE	-		
							)					
							)					
							No pending or confirmed DTCs	=	see sheet inhibit tables	-		
							Basic enable conditions met	=	see sheet enable tables	-		
	P0227	Diagnosis of Throttle Position Sensor1 Bank2 for Signal Range Check-Low	Raw voltage value of Throttle Position Sensor1 Bank2	<	0.195	V	ECU is in DRIVE state	=	TRUE	-	0.14 sec continuous	1 Trip
							OR					
							ECU is in POSTDRIVE state	=	TRUE	-		
							Request safety fuel cut off SKA bank 2, following condition:	=	FALSE	-		
							(					
							Irreversible safety fuel cut off SKA bank 2	=	FALSE	-		
							Request reversible safety fuel cut off SKA bank 2, following conditions:	=	FALSE	-		
							(					
							(					
							Battery voltage for throttle valve operation sufficient bank 2	=	TRUE	-		
							OR					
							Engine speed	>	1000	rpm		
							)					
							Limp home position not reached bank 2	=	FALSE	-		
							)					
							)					
							No pending or confirmed DTCs	=	see sheet inhibit tables	-		
							Basic enable conditions met	=	see sheet enable tables	-		
	P0226	Synchronization check for Throttle Position Sensor1 Bank2 - rationality check against modelled air charge value	(				(ECU is in DRIVE state	=	TRUE	-	continuous	1 Trip
		Deviation of relative actual angle from Throttle Position Sensors	Absolute difference between relative actual angle calculated based on voltages from sensor 1 and sensor 2 (see Look-Up-Table #P0226-1)	>	5 to 6.25	%	OR					
			for time	>=	0.14	sec	ECU is in POSTDRIVE state	=	TRUE	-		
							)					
			Absolute difference between relative actual angle calculated based on voltage from sensor 1 and relative air charge signal	>	9.0234	%	Request safety fuel cut off SKA bank 2, following condition:	=	FALSE	-		
			for time	>=	0.28	sec	(					
			)				Irreversible safety fuel cut off SKA bank 2	=	FALSE	-		
			OR				and					
			(				Request reversible safety fuel cut off SKA bank 2, following conditions:	=	FALSE	-		
		Deviation of relative actual angle from Throttle Position Sensors wrt relative air charge signal	Absolute difference between relative actual angle calculated based on voltage from sensor 1 and sensor 2 and relative air charge signal	>	0	%	(					
			for time	>=	0.36	sec	(					
			)				Battery voltage for throttle valve operation sufficient bank 2	=	TRUE	-		
			OR				)					
		Error in the main charge sensor	Error main charge sensor, following conditions:	=	TRUE	-	Limp home position not reached bank 2	=	FALSE	-		
			(				Flag for throttle angle calculated from main charge sensor is unthrottled, following condition:	=	FALSE	-		
			Condition for error of main filling sensor	=	TRUE	-	(					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
			(		Difference between throttle angle calculated from unthrottled mass flow of main charging sensor and throttle valve angle at which the 95 charge is through minimum tolerance for bank1	< 0 %		
			Validity of the pressure sensor of the intake manifold bank 1	= FALSE -	)			
			Condition for HFM error (without debounce)	= TRUE -	)			
			(		)			
			Flag Variant Diagnosis Error bank 1	= TRUE -	No pending or confirmed DTCs	= see sheet inhibit tables -		
			OR		Basic enable conditions met	= see sheet enable tables -		
			Error flag of the signal variation check of the HFM sensor (Bank 2)	= TRUE -				
			OR					
			Flag plausible diagnosis error	= TRUE -				
			OR					
			Flag to display a physical HFM range error bank 1	= TRUE -				
			OR					
			Flag to display a physical HFM range error bank 2	= TRUE -				
			OR					
			(					
			Validity flag of the measured air mass flow sensor signal for bank 1	= TRUE -				
			OR					
			Validity flag of the measured air mass flow sensor signal for bank 2	= TRUE -				
			)					
			Release of the HFM diagnosis of the electrical signal	= TRUE -				
			)					
			)					
			for time	>= 0.14 sec				
			)					
Throttle Position Sensor - Sensor 1 B2	U0608	Diagnosis of Throttle Position Sensor 1 Bank 2 for SENT data - Communication Check	Communication error from the SENT Channel of Throttle Position Sensor 1 Bank 2, following conditions:	= TRUE -	(ECU is in DRIVE state	= TRUE -	0.12 sec continuous	1 Trip
			(		OR			
			No signal on the line	= TRUE -	ECU is in POSTDRIVE state	= TRUE -		
					)			
			OR		Request safety fuel cut off SKA bank 2, following condition:	= FALSE -		
			Pulse length of SENT message is out of range	= TRUE -	(			
					Irreversible safety fuel cut off SKA bank 2	= FALSE -		
			OR		Request reversible safety fuel cut off SKA bank 2, following conditions:	= FALSE -		
			Calibration pulse of SENT message is out of range	= TRUE -	(			
			)		(			
					Battery voltage for throttle valve operation sufficient bank 2	= TRUE -		
					)			
					Limp home position not reached bank 2	= FALSE -		
					)			
					)			
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
	U136E	Invalid data from SENT device	No valid data from the SENT Channel of Throttle Position Sensor 1 Bank 2, following conditions:	= TRUE -	(ECU is in DRIVE state	= TRUE -	0.12 sec continuous	1 Trip
			(		OR			
			Error in the monitoring status of SENT driver Bank 2	= TRUE -	ECU is in POSTDRIVE state	= TRUE -		
			)		)			
					Request safety fuel cut off SKA bank 2, following condition:	= FALSE -		
					(			
					Irreversible safety fuel cut off SKA bank 2 and	= FALSE -		
					Request reversible safety fuel cut off SKA bank 2, following conditions:	= FALSE -		
					(			
					(			
					Battery voltage for throttle valve operation sufficient bank 2	= TRUE -		
					)			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Limp home position not reached bank 2)) No pending or confirmed DTCs Basic enable conditions met	= FALSE - = see sheet inhibit tables - = see sheet enable tables -		
Throttle Position Sensor - Sensor 2 B2	P212D	Diagnosis of Throttle Position Sensor2 Bank2 for Signal Range Check-High	Raw voltage value of Throttle Position Sensor2 Bank2	> 4.805 V	ECU is in DRIVE state OR ECU is in POSTDRIVE state Request safety fuel cut off SKA bank 2, following condition: (Irreversible safety fuel cut off SKA bank 2 Request reversible safety fuel cut off SKA bank 2, following conditions: ((Battery voltage for throttle valve operation OR Engine speed) Limp home position not reached bank 2)) No pending or confirmed DTCs Basic enable conditions met	= TRUE - = TRUE - = FALSE - = FALSE - = FALSE - = TRUE - > 1000 rpm = FALSE - = see sheet inhibit tables - = see sheet enable tables -	0.14 sec continuous	1 Trip
	P212C	Diagnosis of Throttle Position Sensor2 Bank2 for Signal Range Check-Low	Raw voltage value of Throttle Position Sensor2 Bank2	< 0.195 V	ECU is in DRIVE state OR ECU is in POSTDRIVE state Request safety fuel cut off SKA bank 2, following condition: (Irreversible safety fuel cut off SKA bank 2 Request reversible safety fuel cut off SKA bank 2, following conditions: ((Battery voltage for throttle valve operation sufficient bank 2 OR Engine speed) Limp home position not reached bank 2)) No pending or confirmed DTCs Basic enable conditions met	= TRUE - = TRUE - = FALSE - = FALSE - = FALSE - = TRUE - > 1000 rpm = FALSE - = see sheet inhibit tables - = see sheet enable tables -	0.14 sec continuous	1 Trip
	P212B	Synchronization check for Throttle Position Sensor2 Bank2 - rationality check against modelled air charge value Deviation of relative actual angle from Throttle Position Sensors Deviation of relative actual angle from Throttle Position Sensors wrt relative air charge signal	((Absolute difference between relative actual angle calculated based on voltage from sensor 1 and relative actual angle calculated based on voltage from sensor 2 (see Look-Up-Table #P0226-1) Absolute difference between relative actual throttle angle calculated based on voltage from sensor 2 and throttle angle calculated from the main charge sensor (intake manifold pressure sensor) for time) OR Absolute difference between relative actual angle calculated based on voltage from sensor 1 and sensor 2 and relative air charge signal for time OR	> 5 to 6.25 % > 9.0234 % >= 0.28 sec < 0 % >= 0.36 sec	(ECU is in DRIVE state OR ECU is in POSTDRIVE state) Request safety fuel cut off SKA bank 2, following condition: (Irreversible safety fuel cut off SKA bank 2 Request reversible safety fuel cut off SKA bank 2, following conditions: ((	= TRUE - = TRUE - = FALSE - = FALSE - = FALSE -	continuous	1 Trip

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required			MIL Illum.
		Error in the main charge sensor	Error main charge sensor, following conditions:	=	TRUE	-	Battery voltage for throttle valve operation sufficient bank 2	=	TRUE	-				
			(				)							
			Condition for error of main filling sensor	=	TRUE	-	Limp home position not reached bank 2	=	FALSE	-				
			(				Flag for throttle angle calculated from main charge sensor is unthrottled, following condition:	=	FALSE	-				
			Validity of the pressure sensor of the intake manifold bank 1	=	FALSE	-	(							
			Condition for HFM error (without debounce)	=	TRUE	-	Difference between throttle angle calculated from unthrottled mass flow of main charging sensor and throttle valve angle at which the 95 charge is through minimum tolerance for bank1	<	0	%				
			(				)							
			Flag Variant Diagnosis Error bank 1	=	TRUE	-	)							
			OR				)							
			Error flag of the signal variation check of the HFM sensor (Bank 2)	=	TRUE	-	No pending or confirmed DTCs	=	see sheet inhibit tables	-				
			OR				Basic enable conditions met	=	see sheet enable tables	-				
			Flag plausible diagnosis error	=	TRUE	-								
			OR											
			Flag to display a physical HFM range error bank 1	=	TRUE	-								
			OR											
			Flag to display a physical HFM range error bank 2	=	TRUE	-								
			OR											
			(											
			Validity flag of the measured air mass flow sensor signal for bank 1	=	TRUE	-								
			OR											
			Validity flag of the measured air mass flow sensor signal for bank 2	=	TRUE	-								
			)											
			Release of the HFM diagnosis of the electrical signal	=	TRUE	-								
			)											
			)											
			for time	>=	0.14	sec								
			)											
Throttle Position Sensor - Sensor 2 B2	U0688	Diagnosis of Throttle Position Sensor 2 Bank 2 for SENT data - Communication Check	Communication error from the SENT Channel of Throttle Position Sensor 2 Bank 2, following conditions:	=	TRUE	-	(	=	TRUE	-	0.12	sec	continuous	1 Trip
							ECU is in DRIVE state							
			(				OR							
			No signal on the line	=	TRUE	-	ECU is in POSTDRIVE state	=	TRUE	-				
							)							
			OR				Request safety fuel cut off SKA bank 2, following condition:	=	FALSE	-				
			Pulse length of SENT message is out of range	=	TRUE	-	(							
							Irreversible safety fuel cut off SKA bank 2	=	FALSE	-				
			OR				Request reversible safety fuel cut off SKA bank 2, following conditions:	=	FALSE	-				
			Calibration pulse of SENT message is out of range	=	TRUE	-	(							
			)				(							
							Battery voltage for throttle valve operation sufficient bank 2	=	TRUE	-				
							)							
							Limp home position not reached bank 2	=	FALSE	-				
							)							
							)							
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enable conditions met	=	see sheet enable tables	-				
	U136F	Invalid data from SENT device	No valid data from the SENT Channel of Throttle Position Sensor 2 Bank 2, following conditions:	=	TRUE	-	(	=	TRUE	-	0.12	sec	continuous	1 Trip
							ECU is in DRIVE state							
			(				OR							
			Error in the monitoring status of SENT driver Bank 2	=	TRUE	-	ECU is in POSTDRIVE state	=	TRUE	-				
							)							
			)				Request safety fuel cut off SKA bank 2, following condition:	=	FALSE	-				
							(							
							Irreversible safety fuel cut off SKA bank 2	=	FALSE	-				
							and							
							Request reversible safety fuel cut off SKA bank 2, following conditions:	=	FALSE	-				

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					(			
					(			
					Battery voltage for throttle valve operation sufficient bank 2	= TRUE -		
					)			
					Limp home position not reached bank 2	= FALSE -		
					)			
					)			
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
Turbocharger Wastegate Feedback Position Sensor - B1	P2AB9	Detects if the turbine bypass valve 1 position sensor raw voltage is greater than maximum mechanical threshold and lesser than range check upper limit	Raw voltage of position sensor	> 4.0726 V	There is no ADC and no sensor supply error	= TRUE -	1.5 sec continuous	2 Trips
			Raw voltage of position sensor	< 5 V	No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
	P2AB8	Detects if the turbine bypass valve 1 position sensor raw voltage is lesser than minimum mechanical threshold and greater than range check lower limit	Raw voltage of position sensor	> 0 V	There is no ADC and no sensor supply error	= TRUE -	1.5 sec continuous	2 Trips
			Raw voltage of position sensor	< 0.244 V	No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
Turbocharger Wastegate Feedback Position Sensor - B1	P2B81	Monitoring of SENT signal for communication errors	(		No communication error	= TRUE -	0.5 sec continuous	2 Trips
			Raw data value received via SENT interface	> 65535 -	No data error	= TRUE -		
			OR		No pending or confirmed DTCs	= see sheet inhibit tables -		
			Raw data value received via SENT interface	< 0 -	Basic enable conditions met	= see sheet enable tables -		
			)					
			OR					
			Status and communication nibble for channel 1 validity is set	= TRUE -				
			OR					
			Status and communication nibble for channel 2 validity is set	= TRUE -				
			OR					
			Channel message is lost	= TRUE -				
Turbocharger Wastegate Feedback Position Sensor - B1	U0644	Lost SENT communication	(	-	Ignition is ON	= TRUE -	continuous	2 Trips
			No signal on the line (RBA SENTIF ERROR NOSIG)	= TRUE -	Basic enable conditions met	= see sheet enable tables -		
			OR	-				
			Sensor line is at low level (RBA SENTIF INFO LINE LOW)	= TRUE -				
			OR	-				
			Sensor line is at high level (RBA SENTIF INFO LINE HIGH)	= TRUE -				
			)	-				
	U1376	Fast SENT channel data validation	(		A valid signal is on the line (RBA SENTIF ERROR NOSIG)	= TRUE -	continuous	2 Trips
			SENT Cyclic Redundancy Check (CRC) has detected an error (RBA_SENTIF_ERROR_CRC)	= TRUE -	Sensor line is not at low level (RBA_SENTIF_INFO_LINE_LOW)	= TRUE -		
			OR		Sensor line is not at high level (RBA SENTIF INFO LINE HIGH)	= TRUE -		
			Pulse length is out of permitted range (RBA SENTIF ERROR RANGE)	= TRUE -	Basic enable conditions met	= see sheet enable tables -		
			OR					
			Short frame: means too few nibbles received than configured (RBA SENTIF ERROR MISSING NIBBLE)	= TRUE -				
			OR					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required			MIL Illum.
			Long frame: means too many nibbles received than configured (RBA_SENTIF_ERROR_TOOMANY_NIBBLES)	=	TRUE	-								
			OR Calibration pulse is out of range (RBA_SENTIF_ERROR_CAL_PULSE_RANGE)	=	TRUE	-								
			OR Deviation of calibration pulse is greater than 1/64 of the previous length (RBA_SENTIF_ERROR_CAL_SUCCESSIVE_DEVIATION)	=	TRUE	-								
			OR Data counter pattern not detected (RBA_SENTIF_ERROR_FAST_DATA_CTR)	=	TRUE	-								
			OR The inverted value of the first nibble of the Fast Frame is not equal to the fifth nibble of the Fast Frame (RBA_SENTIF_ERROR_FAST_DATA_INV_MSN0)	=	TRUE	-								
			OR Message lost due to HW (Hardware) overrun / overwritten (RBA_SENTIF_ERROR_HW_OVERRUN))	=	TRUE	-								
Turbocharger Wastegate Feedback Position Sensor - B2	P2ABC	Detects if the turbine bypass valve 2 position sensor raw voltage is greater than maximum mechanical threshold and lesser than range check upper limit	Raw voltage of position sensor	>	4.0726	V	There is no ADC and no sensor supply error	=	TRUE	-	1.5	sec	continuous	2 Trips
			Raw voltage of position sensor	<	5	V	No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enable conditions met	=	see sheet enable tables	-				
	P2ABB	Detects if the turbine bypass valve 2 position sensor raw voltage is lesser than minimum mechanical threshold and greater than range check lower limit	Raw voltage of position sensor	>	0	V	There is no ADC and no sensor supply error	=	TRUE	-	1.5	sec	continuous	2 Trips
			Raw voltage of position sensor	<	0.244	V	No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enable conditions met	=	see sheet enable tables	-				
Turbocharger Wastegate Feedback Position Sensor - B2	P2B82	Monitoring of SENT signal for communication errors	(				No communication error	=	TRUE	-	0.5	sec	continuous	2 Trips
			Raw data value received via SENT interface OR	>	65535	-	No data error No pending or confirmed DTCs	= =	TRUE see sheet inhibit tables	- -				
			Raw data value received via SENT interface	<	0	-	Basic enable conditions met	=	see sheet enable tables	-				
			) OR Status and communication nibble for channel 1 validity is set	=	TRUE	-								
			OR Status and communication nibble for channel 2 validity is set	=	TRUE	-								
			OR Channel message is lost	=	TRUE	-								
Turbocharger Wastegate Feedback Position Sensor - B2	U0674	Lost SENT communication	(			-	Ignition is ON	=	TRUE	-			continuous	2 Trips
			No signal on the line (RBA_SENTIF_ERROR_NOSIG)	=	TRUE	-	Basic enable conditions met	=	see sheet enable tables	-				
			OR Sensor line is at low level (RBA_SENTIF_INFO_LINE_LOW)	=	TRUE	- -								
			OR Sensor line is at high level (RBA_SENTIF_INFO_LINE_HIGH))	=	TRUE	- - -								
	U1377	Fast SENT channel data validation	(				A valid signal is on the line (RBA_SENTIF_ERROR_NOSIG)	=	TRUE	-			continuous	2 Trips
			SENT Cyclic Redundancy Check (CRC) has detected an error (RBA_SENTIF_ERROR_CRC)	=	TRUE	-	Sensor line is not at low level (RBA_SENTIF_INFO_LINE_LOW)	=	TRUE	-				

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required			MIL Illum.
			OR				Sensor line is not at high level (RBA_SENTIF_INFO_LINE_HIGH)	=	TRUE	-				
			Pulse length is out of permitted range (RBA_SENTIF_ERROR_RANGE)	=	TRUE	-	Basic enable conditions met	=	see sheet enable tables	-				
			OR Short frame: means too few nibbles received than configured (RBA_SENTIF_ERROR_MISSING_NIBBLE)	=	TRUE	-								
			OR Long frame: means too many nibbles received than configured (RBA_SENTIF_ERROR_TOOMANY_NIBBLES)	=	TRUE	-								
			OR Calibration pulse is out of range (RBA_SENTIF_ERROR_CAL_PULSE_RANGE)	=	TRUE	-								
			OR Deviation of calibration pulse is greater than 1/64 of the previous length (RBA_SENTIF_ERROR_CAL_SUCCESSIVE_DEVIATION)	=	TRUE	-								
			OR Data counter pattern not detected (RBA_SENTIF_ERROR_FAST_DATA_CTR)	=	TRUE	-								
			OR The inverted value of the first nibble of the Fast Frame is not equal to the fifth nibble of the Fast Frame (RBA_SENTIF_ERROR_FAST_DATA_INV_MSN0)	=	TRUE	-								
			OR Message lost due to HW (Hardware) overrun / overwritten (RBA_SENTIF_ERROR_HW_OVERRUN))	=	TRUE	-								
Manifold Absolute Pressure Sensor - B1	P0108	Monitoring of Intake manifold pressure sensor bank1 for Signal range check-High	Raw voltage from Intake manifold pressure sensor bank1	>	4.749968	V	No pending or confirmed DTCs	=	see sheet inhibit tables	-	1.5	sec	continuous	2 Trips
							Basic enable conditions met	=	see sheet enable tables	-				
	P0107	Monitoring of Intake manifold pressure sensor bank1 for Signal range check-Low	Raw voltage from Intake manifold pressure sensor bank1	<	0.250002	V	No pending or confirmed DTCs	=	see sheet inhibit tables	-	1.5	sec	continuous	2 Trips
							Basic enable conditions met	=	see sheet enable tables	-				
Manifold Absolute Pressure Sensor - B1	P0106	**Path 1:** Rationality check against reference pressure - high	Difference between raw pressure during initialization before engine start - Bank 1 and maximal reference pressure for delta pressure sensor diagnoses	>	A+B	kPa	(Engine speed	=	0	rpm	5	sec	once per driving cycle	2 Trips
			where A: Tolerance manifold pressure sensor to ambient pressure during start		20.8047	kPa	ECU is in drive-state)	=	TRUE	-				
			B: Delta Intake manifold pressure to ambient pressure during start		0	kPa	For number of events	>=	2	counts				
							Condition manifold pressure sensor reference for delta pressure sensor	=	FALSE	-				
							Unfiltered raw voltage of manifold pressure sensor	<	0.250002	V				
							Unfiltered raw voltage of manifold pressure sensor	>	4.749968	V				
							No pending or confirmed DTCs	=	See sheet inhibit tables	-				
							Basic enable conditions met	=	See sheet enable tables	-				
	P0106	**Path 2:** Rationality check against reference pressure - low	Difference between of raw pressure during initialization before engine start - Bank 1 and minimal reference pressure for delta pressure sensor diagnoses	<	A-B	kPa	(Engine speed	=	0	rpm	5	sec	once per driving cycle	2 Trips

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
			where A: Tolerance manifold pressure sensor to ambient pressure during start	20.8047 kPa	ECU is in drive-state)	= TRUE -		
			B: Delta Intake manifold pressure to ambient pressure during start	0 kPa	For number of events	>= 2 counts		
					Condition manifold pressure sensor reference for delta pressure sensor	= FALSE -		
					Unfiltered raw voltage of manifold pressure sensor	< 0.250002 V		
					Unfiltered raw voltage of manifold pressure sensor	> 4.749968 V		
					No pending or confirmed DTCs	= See sheet inhibit tables -		
					Basic enable conditions met	= See sheet enable tables -		
	P0106	**Path 3:** Rationality check high - comparison of measured intake manifold pressure with modelled intake manifold pressure	Difference between maximum intake manifold pressure and maximum modeled manifold pressure	> 13.5 kPa	Engine speed	>= 0 rpm	2.5 sec continuous	2 Trips
					Model-based manifold pressure diagnosis released from icing detection (sensor not frozen), which is the following condition:	= TRUE -		
					Difference between maximum and minimum manifold pressure from sensor signal wobble check	>= 10 kPa		
					((Raw voltage of manifold pressure sensor	> 0.250002 V		
					Raw voltage of manifold pressure sensor	< 4.749968 V		
					) for time	>= 0.2 sec		
					(Inflow into the MAP sensor is valid	= TRUE -		
					Outflow from the MAP sensor is valid	= TRUE -		
					) for time	>= 0.14 sec		
					Request safety fuel cut off (*)	= FALSE -		
					Suspicion of a throttle valve sensor failure (*))	= FALSE -		
					No pending or confirmed DTCs	= See sheet inhibit tables -		
					Basic enable conditions met	= See sheet enable tables -		
	P0106	**Path 4:** Rationality check low - comparison of measured intake manifold pressure with modelled intake manifold pressure	Difference between minimum modeled manifold pressure and minimum intake manifold pressure	> 13.5 kPa	Engine speed	>= 0 rpm	2.5 sec continuous	2 Trips
					Model-based manifold pressure diagnosis released from icing detection (sensor not frozen), which is the following condition:	= TRUE -		
					Difference between current maximum and minimum manifold pressure from sensor signal wobble check	>= 10 kPa		
					((Raw voltage of manifold pressure sensor	> 0.250002 V		
					Raw voltage of manifold pressure sensor	< 4.749968 V		
					) for time	>= 0.2 sec		
					(Inflow into the MAP sensor is valid	= TRUE -		
					Outflow from the MAP sensor is valid	= TRUE -		
					) for time	>= 0.14 sec		
					Request safety fuel cut off (*)	= FALSE -		
					Suspicion of a throttle valve sensor failure (*))	= FALSE -		
					No pending or confirmed DTCs	= See sheet inhibit tables -		
					Basic enable conditions met	= See sheet enable tables -		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
	P0106	**Path 5:** Rationality check low during startup- Raw pressure is less than maximum value of minimum ambient pressure and difference of ambient pressure, offset voltage and tolerance	Raw pressure before engine start in the intake manifold	< max[a,(b-c)-d] kPa	Time counter for valid raw pressure after engine start	< 0 sec	2.5 sec once per driving cycle	2 Trips
			where (a) minimum ambient pressure for intake manifold pressure diagnosis	0 kPa	Engine speed	< 300 rpm		
			(b) Ambient pressure		Engine speed calculated in 10ms	<= 0 rpm		
			(c) Offset−voltage for ambient pressure sensor		(Raw voltage of manifold pressure sensor	> 0.250002 V		
			(d) tolerances between pressure raw value before engine start in the intake manifold and ambient pressure	255.9961 kPa	Raw voltage of manifold pressure sensor	< 4.749968 V		
					) for time	>= 0.2 sec		
					Counter for number of raw values for averaging	> 5 counts		
					Calculation of raw-pressure during initialization is finished for bank 1	= FALSE -		
					Engine speed	>= 400 rpm		
					Difference between raw pressure before engine start in the intake manifold and absolute intake manifold pressure	< 30 kPa		
					(Inflow into the MAP sensor is valid	= TRUE -		
					Outflow from the MAP sensor is valid	= TRUE -		
					) for time	>= 0.14 sec		
					Request safety fuel cut off (*)	= FALSE -		
					Suspicion of a throttle valve sensor failure (*))	= FALSE -		
					No pending or confirmed DTCs	= See sheet inhibit tables -		
					Basic enable conditions met	= See sheet enable tables -		
	P0106	Signal variation check: checks if the sensor is frozen, by comparing the difference of maximum and minimum manifold pressure against calibration threshold for sensor signal wobble check	Difference between maximum and minimum manifold pressure from sensor signal wobble check	< 10 kPa	(Engine coolant downstream temperature during the first engine start of the driving cycle.	> -7.5 deg C	continuous	2 Trips
					OR (Engine coolant temperature	> 30 deg C		
					for time)	>= 100 sec		
					((Raw voltage of manifold pressure sensor	> 0.250002 V		
					Raw voltage of manifold pressure sensor	< 4.749968 V		
					) for time	>= 0.2 sec		
					(Inflow into the MAP sensor is valid	= TRUE -		
					Outflow from the MAP sensor is valid	= TRUE -		
					) for time	>= 0.14 sec		
					Request safety fuel cut off (*)	= FALSE -		
					Suspicion of a throttle valve sensor failure (*))	= FALSE -		
					(Engine speed	> 1300 rpm		
					Minimum throttle valve position (Bank 1))	< 10.0098 %		
					(Engine speed	< 1500 rpm		
					Maximum throttle valve position (Bank 1)))	> 25 %		
					for time	>= 1 sec		
					No pending or confirmed DTCs	= See sheet inhibit tables -		
					Basic enable conditions met	= See sheet enable tables -		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required			MIL Illum.
Manifold Absolute Pressure Sensor - B2	P2A0D	Monitoring of Intake manifold pressure sensor bank2 for Signal range check-High	Raw voltage from Intake manifold pressure sensor bank2	>	4.749968	V	No pending or confirmed DTCs	=	see sheet inhibit tables	-	1.5	sec	continuous	2 Trips
							Basic enable conditions met	=	see sheet enable tables	-				
	P2A0C	Monitoring of Intake manifold pressure sensor bank2 for Signal range check-Low	Raw voltage from Intake manifold pressure sensor bank2	<	0.250002	V	No pending or confirmed DTCs	=	see sheet inhibit tables	-	1.5	sec	continuous	2 Trips
							Basic enable conditions met	=	see sheet enable tables	-				
Manifold Absolute Pressure Sensor - B2	P2A0B	**Path 1:** Rationality check against reference pressure - high	Difference between raw manifold pressure during initialization − Bank 2 and maximal reference pressure for delta pressure sensor diagnoses	>	A+B	kPa	(Engine speed	=	0	rpm	5	sec	once per driving cycle	2 Trips
			where A: Tolerance manifold pressure sensor to ambient pressure during start		20.8047	kPa	ECU is in drive-state)	=	TRUE	-				
			B: Delta Intake manifold pressure to ambient pressure during start		0	kPa	For number of events	>=	2	events				
							Condition manifold pressure sensor reference for delta pressure sensor	=	FALSE	-				
							Unfiltered raw voltage of manifold pressure sensor Bank 2	<	0.250002	V				
							Unfiltered raw voltage of manifold pressure sensor Bank 2	>	4.749968	V				
							No pending or confirmed DTCs	=	See sheet inhibit tables	-				
							Basic enable conditions met	=	See sheet enable tables	-				
	P2A0B	**Path 2:** Rationality check against reference pressure - low	Difference between raw manifold pressure during initialization − Bank 2 and minimal reference pressure for delta pressure sensor diagnoses	<	A-B	kPa	(Engine speed	=	0	rpm	5	sec	once per driving cycle	2 Trips
			where A: Tolerance manifold pressure sensor to ambient pressure during start		20.8047	kPa	ECU is in drive-state)	=	TRUE	-				
			B: Delta Intake manifold pressure to ambient pressure during start		0	kPa	for number of events	>=	2	events				
							Condition manifold pressure sensor reference for delta pressure sensor	=	FALSE	-				
							Unfiltered raw voltage of manifold pressure sensor Bank 2	<	0.250002	V				
							Unfiltered raw voltage of manifold pressure sensor Bank 2	>	4.749968	V				
							No pending or confirmed DTCs	=	See sheet inhibit tables	-				
							Basic enable conditions met	=	See sheet enable tables	-				
	P2A0B	**Path 3:** Rationality check - comparison of measured intake manifold pressure with modelled intake manifold pressure	Difference between maximum intake manifold pressure and maximum modeled manifold pressure	>	13.5	kPa	Model-based manifold pressure diagnosis released from icing detection (sensor not frozen), which is the following condition:	=	TRUE	-	2.5	sec	continuous	2 Trips
							Difference between current minimum and its maximum manifold pressure from sensor signal wobble check	>=	10	kPa				
							(maximum voltage threshold for electrical diagnosis	>	4.749968	V				
							for time)	>=	0.2	sec				
							(Inflow into the MAP sensor is valid	=	TRUE	-				
							Outflow from the MAP sensor is valid	=	TRUE	-				
							) for time	>=	0.14	sec				
							Request safety fuel cut off (*)	=	FALSE	-				

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Suspicion of a throttle valve sensor failure (*)	= FALSE -		
					No pending or confirmed DTCs	= See sheet enable tables -		
					Basic enable conditions met	= See sheet enable tables -		
	P2A0B	**Path 4:** Rationality check - comparison of measured intake manifold pressure with modelled intake manifold pressure	Difference between minimum intake manifold pressure and minimum modeled manifold pressure	> 13.5 kPa	Model-based manifold pressure diagnosis released from icing detection (sensor not frozen), which is the following condition:	= TRUE -	2.5 sec continuous	2 Trips
					Difference between current minimum and its maximum manifold pressure from sensor signal wobble check	>= 10 kPa		
					(maximum voltage threshold for electrical diagnosis	> 4.749968 V		
					for time	>= 0.2 sec		
					)			
					(Inflow into the MAP sensor is valid	= TRUE -		
					Outflow from the MAP sensor is valid	= TRUE -		
					) for time	>= 0.14 sec		
					Request safety fuel cut off (*)	= FALSE -		
					Suspicion of a throttle valve sensor failure (*)	= FALSE -		
					No pending or confirmed DTCs (se inhibit conditions table)	= See sheet enable tables -		
					Basic enable conditions met	= See sheet enable tables -		
	P2A0B	Signal variation check: checks if the sensor is frozen, by comparing the difference of maximum and minimum manifold pressure against calibration threshold for sensor signal wobble check	Difference between maximum and minimum manifold pressure from sensor signal wobble check bank 2	< 10 kPa	(Engine coolant downstream temperature during the first engine start of the driving cycle.	> -7.5 deg C	continuous	2 Trips
					OR			
					(Engine coolant temperature	> 30 deg C		
					for time	>= 100 sec		
					)			
					((Raw voltage of manifold pressure sensor Bank2	> 0.250002 V		
					Raw voltage of manifold pressure sensor Bank2	< 4.749968 V		
					) for time	>= 0.2 sec		
					(Inflow into the MAP sensor is valid	= TRUE -		
					Outflow from the MAP sensor is valid	= TRUE -		
					) for time	>= 0.14 sec		
					Request safety fuel cut off (*)	=		
					Suspicion of a throttle valve sensor failure (*))	=		
					(Engine Speed	> 1300 rpm		
					Minimum throttle valve position (Bank 2)	< 10.0098 %		
					)			
					(Engine Speed	< 1500 rpm		
					Maximum throttle valve position (Bank 2)	> 25 %		
					))			
					for time	>= 1 sec		
					No pending or confirmed DTCs	= See sheet inhibit tables -		
					Basic enable conditions met	= See sheet enable tables -		
Boost Pressure Sensor - B1	P0238	Monitoring of Throttle valve upstream pressure sensor Bank 1 for Signal range check - High	Raw voltage from Throttle valve upstream pressure sensor Bank 1	> 4.749968 V	Engine speed	>= 400 rpm	1.5 sec continuous	2 Trips

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required			MIL Illum.
							Engine in state of synchronization	=	TRUE	-				
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enable conditions met	=	see sheet enable tables	-				
	P0237	Monitoring of Throttle valve upstream pressure sensor Bank 1 for Signal range check - Low	Raw voltage from Throttle valve upstream pressure sensor Bank 1	<	0.250002	V	Engine speed	>=	400	rpm	1.5	sec	continuous	2 Trips
							Engine in state of synchronization	=	TRUE	-				
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enable conditions met	=	see sheet enable tables	-				
Boost Pressure Sensor - B1	P0236	**Path 1 :** Rationality check against maximum ambient pressure based threshold	Case 1: Engine NOT running for time	>=	A*B	sec	(				2	sec	continuous	2 Trip
			Difference between raw upstream throttle valve pressure and ambient pressure	>	C+D	kPa	Engine speed	<	1000	rpm				
						sec	Throttle actuator position	<	8.0078	%				
			Case 2: Engine NOT running for time	<	A*B	sec	)							
			Difference between raw upstream throttle valve pressure and ambient pressure	>	C+E	kPa	for time	>=	2.6	sec				
							Valid pressure sensor signal upstream of throttle valve	=	TRUE	-				
			Where: (A) Time delay for ambient pressure in manifold	=	3	sec	for time	>=	0.2	sec				
			(B) constant	=	0.95	-	(							
			(C) Upper tolerance value of upstream throttle valve pressure	=	13.4531	kPa	Raw voltage (unfiltered) of throttle valve pressure sensor	<=	4.749968	V				
			(D) Ambient pressure including an offset for robustness	=	1.9648	kPa	Raw voltage (unfiltered) of throttle valve pressure sensor	>=	0.250002	V				
			(E) Difference between modelled and measured upstream throttle valve pressure values	=	1.9883	kPa	)							
							Suspicion of a throttle valve sensor failure (*)	=	FALSE	-				
							Request safety fuel cut off (*)	=	FALSE	-				
							(Max range error of pressure upstream throttle **When:**	=	FALSE	-				
							Pressure upstream throttle valve raw)	<	511.9922	kPa				
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enable conditions met	=	see sheet enable tables	-				
	P0236	**Path 2 :** Rationality check during startup against maximum ambient pressure based threshold	Difference between raw throttle valve pressure Bank 1 and the maximum reference pressure for delta pressure sensor diagnosis	>	14.625	kPa	(				2	sec	continuous	2 Trip
							Raw voltage (unfiltered) of throttle valve pressure sensor	<=	4.749968	V				
							Raw voltage (unfiltered) of throttle valve pressure sensor	>=	0.250002	V				
							)							
							for time	>=	0.2	sec				
							Engine not running	=	TRUE	-				
							for time	>=	5	sec				
							ECU in drive state	=	TRUE	-				
							(Max range error of pressure upstream throttle **When:**	=	FALSE	-				
							Pressure upstream throttle valve raw)	<	511.9922	kPa				
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enable conditions met	=	see sheet enable tables	-				
	P0236	**Path 3 :** Rationality check against minimum ambient pressure based threshold	Case 1: Engine NOT running for time	>=	A*B	sec	(				2	sec	continuous	2 Trip
			(Difference between raw upstream throttle valve pressure and ambient pressure	<	C+D	kPa	Engine speed	<	1000	rpm				

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
			for time)	>= 1 sec	Throttle actuator position	< 8.0078 %		
			Case 2: Engine NOT running for time	< A*B sec	)			
			(Difference between raw upstream throttle valve pressure and ambient pressure	< C+E kPa	for time	>= 2.6 sec		
			for time)	>= 1 sec	Valid pressure sensor signal upstream of throttle valve	= TRUE -		
			Where: (A) Time delay for ambient pressure in manifold	= 3 sec	for time	>= 0.2 sec		
			(B) constant	= 0.95 -	(			
			(C) Upper tolerance value of upstream throttle valve pressure	= 13.4531 kPa	Raw voltage (unfiltered) of throttle valve pressure sensor	<= 4.749968 V		
			(D) Ambient pressure including an offset for robustness	= 1.9648 kPa	Raw voltage (unfiltered) of throttle valve pressure sensor	>= 0.250002 V		
			(E) Maximum pressure loss at air filter	= 2.1211 kPa	)			
					Suspicion of a throttle valve sensor failure (*)	= FALSE -		
					Request safety fuel cut off (*)	= FALSE -		
					(Max range error of pressure upstream throttle **When:**	= FALSE -		
					Pressure upstream throttle valve raw)	< 511.9922 kPa		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
	P0236	**Path 4 :** Rationality check during startup against minimum ambient pressure based threshold	Difference between raw throttle valve pressure Bank 1 and the minimum reference pressure for delta pressure sensor diagnosis	< 14.625 kPa	(		2 sec continuous	2 Trip
					Raw voltage (unfiltered) of throttle valve pressure sensor	<= 4.749968 V		
					Raw voltage (unfiltered) of throttle valve pressure sensor	>= 0.250002 V		
					)			
					for time	>= 0.2 sec		
					Engine not running	= TRUE -		
					for time	>= 5 sec		
					ECU in drive state	= TRUE -		
					(Max range error of pressure upstream throttle **When:**	= FALSE -		
					Pressure upstream throttle valve raw)	< 511.9922 kPa		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
Boost Pressure Sensor - B2	P0242	Monitoring of Throttle valve upstream pressure sensor Bank 2 for Signal range check - High	Raw voltage from Throttle valve upstream pressure sensor Bank 2	> 4.749968 V	Engine speed	>= 400 rpm	1.5 sec continuous	2 Trips
					Engine in state of synchronization	= TRUE -		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
	P0241	Monitoring of Throttle valve upstream pressure sensor Bank 2 for Signal range check - Low	Raw voltage from Throttle valve upstream pressure sensor Bank 2	< 0.250002 V	Engine speed	>= 400 rpm	1.5 sec continuous	2 Trips
					Engine in state of synchronization	= TRUE -		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
Boost Pressure Sensor - B2	P0240	**Path 1 :** Rationality check against maximum ambient pressure based threshold	Case 1: Engine NOT running for time	>= A*B sec	(		2 sec continuous	2 Trip
			Difference between raw upstream throttle valve pressure and ambient pressure	> C+D kPa	Engine speed	< 1000 rpm		
				sec	Throttle actuator position	< 8.0078 %		
			Case 2: Engine NOT running for time	< A*B sec	)			
			Difference between raw upstream throttle valve pressure and ambient pressure	> C+E kPa	for time	>= 2.6 sec		
					Valid pressure sensor signal upstream of throttle valve	= TRUE -		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
			Where: (A) Time delay for ambient pressure in manifold	=	3	sec	for time	>=	0.2	sec		
			(B) constant	=	0.95	-	(					
			(C) Upper tolerance value of upstream throttle valve pressure	=	13.4531	kPa	Raw voltage (unfiltered) of throttle valve pressure sensor for Bank 2	<=	4.749968	V		
			(D) Ambient pressure including an offset for robustness	=	1.9648	kPa	Raw voltage (unfiltered) of throttle valve pressure sensor for Bank 2	>=	0.250002	V		
			(E) Difference between modelled and measured upstream throttle valve pressure values	=	1.9883	kPa	)					
							Suspicion of a throttle valve sensor failure Bank 2	=	FALSE	-		
							Request safety fuel cut off	=	FALSE	-		
							(Max range error of pressure upstream throttle		FALSE	-		
							When:					
							Pressure upstream throttle valve raw)	<	511.9922	kPa		
							No pending or confirmed DTCs	=	see sheet inhibit tables	-		
							Basic enable conditions met	=	see sheet enable tables	-		
	P0240	**Path 2 :** Rationality check during startup against maximum ambient pressure based threshold	Difference between throttle valve pressure Bank 2 and the maximum reference pressure for delta pressure sensor diagnosis	>	14.625	kPa	(				2 sec once per driving cycle	2 Trip
							Raw voltage (unfiltered) of throttle valve pressure sensor for Bank 2	<=	4.749968	V		
							Raw voltage (unfiltered) of throttle valve pressure sensor for Bank 2	>=	0.250002	V		
							)					
							for time	>=	0.2	sec		
							Engine not running	=	TRUE	-		
							for time	>=	5	sec		
							ECU in drive state	=	TRUE	-		
							(Max range error of pressure upstream throttle		FALSE	-		
							When:					
							Pressure upstream throttle valve raw)	<	511.9922	kPa		
							No pending or confirmed DTCs	=	see sheet inhibit tables	-		
							Basic enable conditions met	=	see sheet enable tables	-		
	P0240	**Path 3** : Rationality check against minimum ambient pressure based threshold	Case 1: Engine NOT running for time	>=	A*B	sec	(				2 sec continuous	2 Trip
			(Difference between raw upstream throttle valve pressure and ambient pressure	<	C+D	kPa	Engine speed	<	1000	rpm		
			for time)	>=	1	sec	Throttle actuator position	<	8.0078	%		
			Case 2: Engine NOT running for time	<	A*B	sec	)					
			(Difference between raw upstream throttle valve pressure and ambient pressure	<	C+E	kPa	for time	>=	2.6	sec		
			for time)	>=	1	sec	Valid pressure sensor signal upstream of throttle valve	=	TRUE	-		
			Where: (A) Time delay for ambient pressure in manifold	=	3	sec	for time	>=	0.2	sec		
			(B) constant	=	0.95	-	(					
			(C) Upper tolerance value of upstream throttle valve pressure	=	13.4531	kPa	Raw voltage (unfiltered) of throttle valve pressure sensor for Bank 2	<=	4.749968	V		
			(D) Ambient pressure including an offset for robustness	=	1.9648	kPa	Raw voltage (unfiltered) of throttle valve pressure sensor for Bank 2	>=	0.250002	V		
			(E) Maximum pressure loss at air filter	=	2.1211	kPa	)					
							Suspicion of a throttle valve sensor failure	=	FALSE	-		
							Request safety fuel cut off	=	FALSE	-		
							(Max range error of pressure upstream throttle	=	FALSE	-		
							When:					
							Pressure upstream throttle valve raw)	<	511.9922	kPa		
							No pending or confirmed DTCs	=	see sheet inhibit tables	-		
							Basic enable conditions met	=	see sheet enable tables	-		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
	P0240	**Path 4 :** Rationality check during startup against minimum ambient pressure based threshold	Difference between raw throttle valve pressure Bank 2 and the minimum reference pressure for delta pressure sensor diagnosis	< 14.625 kPa	(		2 sec continuous	2 Trip
					Raw voltage (unfiltered) of throttle valve pressure sensor	<= 4.749968 V		
					Raw voltage (unfiltered) of throttle valve pressure sensor	>= 0.250002 V		
					)			
					for time	>= 0.2 sec		
					Engine not running	= TRUE -		
					for time	>= 5 sec		
					ECU in drive state	= TRUE -		
					(Max range error of pressure upstream throttle	= FALSE -		
					When:			
					Pressure upstream throttle valve raw)	< 511.9922 kPa		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
Engine Off Timer	P262B	**Path 1:** Too Slow Monitor : Engine off time is too short in considering ECT change	Calculated engine off time (see Look-Up-Table #P262B-1)	< 0 to 420 min	Ratio of current cool down compared to last ignition-off event	>= 0.75 -	1	2 Trips
					Ratio of current cool down compared to last ignition-off event	<= 1 -		
					Engine coolant temperature prior to shutdown in previous driving cycle	>= 57.96 deg C		
					Possible cool down of the coolant temperature during shutdown since previous driving cycle	>= 20 deg C		
					Cool down of the engine coolant temperature during shutdown since previous driving cycle	>= 20 deg C		
					Accumulated ecu-on-time since last ignition-off event (see Look-Up-Table #P262B-2)	<= 120 to 9600 sec		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
	P262B	**Path 2:** Too Fast Monitor : Engine off time is too long in considering ECT change	Calculated engine off time (see Look-Up-Table #P262B-3)	> 60 to 2000 min	Ratio of current cool down compared to last ignition-off event	>= 0 -		2 Trips
					Ratio of current cool down compared to last ignition-off event	<= 0.700195 -		
					Engine coolant temperature prior to shutdown in previous driving cycle	>= 57.96 deg C		
					Possible cool down of the coolant temperature during shutdown since previous driving cycle	>= 20 deg C		
					Cool down of the engine coolant temperature during shutdown since previous driving cycle	<= 100 deg C		
					Accumulated ecu-on-time since last ignition-off event (see Look-Up-Table #P262B-4)	<= 120 to 9600 sec		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
	P262B	**Path 3:** Rationality check of control module power off timer	At least one bit of the counter value in the counter device RAM doesn't change it's value	= TRUE -	Ignition is ON	= TRUE -		2 Trips
			OR		Basic enable conditions met	= see sheet enable tables -		
			Communication error is reported by counter device	= TRUE -				
			OR					
			Difference between counter steps compared to ECU system time is out of tolerance	= TRUE -				

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required			MIL Illum.
ECM Internal Failures	P062B	**Path 1:** Electrical failure with high pressure injection valve powerstage for bank 1	Electrical fault is detected for the control bank 1 (	=	TRUE	-	Diagnosis inhibited by statistical function	=	FALSE	-	5	sec	continuous	2 Trips
			Number of misfire counter for cylinder 0	>	100	-	Engine speed	<	6000	rpm				
			Number of misfire counter for cylinder 4	>	100	-	Engine speed	>	1520	rpm				
			)				relative air charge	<	100.008	%				
			and				Half engine mode active	=	FALSE	-				
			Rail pressure control minimum error is set	=	TRUE	-	for time	>=	0.5	sec				
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enable conditions met	=	see sheet enable tables	-				
	P062B	**Path 2**: Electrical failure with high pressure injection valve powerstage for bank 2	Electrical fault is detected for the control bank 2 (	=	TRUE	-	Diagnosis inhibited by statistical function	=	FALSE	-	5	sec		
			Number of misfire counter for cylinder 1	>	100	-	Engine speed	<	6000	rpm				
			Number of misfire counter for cylinder 5	>	100	-	Engine speed	>	1520	rpm				
			)				relative air charge	<	100.008	%				
			and				Half engine mode active	=	FALSE	-				
			Rail pressure control minimum error is set	=	TRUE	-	for time	>=	0.5	sec				
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enable conditions met	=	see sheet enable tables	-				
	P062B	**Path 3**: Electrical failure with high pressure injection valve powerstage for bank 3	Electrical fault is detected for the control bank 3 (	=	TRUE	-	Diagnosis inhibited by statistical function	=	FALSE	-	5	sec		
			Number of misfire counter for cylinder 2	>	100	-	Engine speed	<	6000	rpm				
			Number of misfire counter for cylinder 6	>	100	-	Engine speed	>	1520	rpm				
			)				relative air charge	<	100.008	%				
			and				Half engine mode active	=	FALSE	-				
			Rail pressure control minimum error is set	=	TRUE	-	for time	>=	0.5	sec				
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enable conditions met	=	see sheet enable tables	-				
	P062B	**Path 4**: Electrical failure with high pressure injection valve powerstage for bank 4	Electrical fault is detected for the control bank 3 (	=	TRUE	-	Diagnosis inhibited by statistical function	=	FALSE	-	5	sec		
			Number of misfire counter for cylinder 3	>	100	-	Engine speed	<	6000	rpm				
			Number of misfire counter for cylinder 7	>	100	-	Engine speed	>	1520	rpm				
			)				relative air charge	<	100.008	%				
			and				Half engine mode active	=	FALSE	-				
			Rail pressure control minimum error is set	=	TRUE	-	for time	>=	0.5	sec				
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enable conditions met	=	see sheet enable tables	-				
	P062B	**Path 5:** Detects if the booster voltage of Dc-Dc convertor is too low	Output voltage of DcDc converter	<=	20	V	Battery voltage	>=	10.9	V	2	events	continuous	2 Trips
							Battery voltage	<=	6553.5	V				
							Basic enable conditions met	=	see sheet enable tables	-				
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
	P062B	**Path 6:** Error check in CVO diagnosis for all cylinders	Number of tested cylinders against min or max error for Controlled Valve Operation diagnosis and	>=	8	-	Ignition is ON	=	TRUE	-			continuous	1 Trips
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
			Number of cylinders in error state due to minimum or maximum error in Controlled Valve Operation diagnose	>=	8	-	Basic enable conditions met	=	see sheet enable tables	-				
	P0606	Detects error of ignition power stage diagnosis ASIC Bank 1	Device information error from the powerstage ASIC	=	TRUE	-	12V system voltage	>	10.9	V	20	events	continuous	1 Trip
							12V system voltage	<	655.34	V				
							Engine synchronization (*)	=	TRUE	-				
							Engine speed	>	1400	rpm				
							Difference between new and old ignition counter ensuring that all cylinder were fired at least once	>	9	counts				
							Basic enable conditions met	=	see sheet enable tables	-				

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
	P0606	Detects error of ignition power stage diagnosis ASIC Bank 2	Device information error from the powerstage ASIC	= TRUE -	12V system voltage 12V system voltage Engine synchronization (*) Engine speed Difference between new and old ignition counter ensuring that all cylinder were fired at least once Basic enable conditions met	> 10.9 V < 655.34 V = TRUE - > 1400 rpm > 9 counts = see sheet enable tables -	20 events continuous	1 Trip
	P0606	Detects when the last activity detected for the LIN Communication Hardware has been greater than the limit for a calibrated period of time	Time since last activity detected for the LIN Communication Hardware is greater than limit	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	0.02 sec continuous	1 Trip
	P0606	Detects when the last activity detected for the CAN Communication Hardware has been greater than the limit for a calibrated period of time	Time since last activity detected for the CAN Communication Hardware is greater than limit	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	0.02 sec continuous	1 Trip
	P0606	Internal monitoring of main processor controller: Monitoring of hardware error management	Error management module (EMM) / Safety management unit (SMU) reports alarm	= TRUE -	Ignition is on Basic enable conditions met	= TRUE - = TRUE -	continuous	1 Trip
	P06D1	Detects commmunication error with ignition power stage diagnosis ASIC Bank 1	SPI information error from the powerstage ASIC	= TRUE -	12V system voltage 12V system voltage Engine synchronization (*) Engine speed Difference between new and old ignition counter ensuring that all cylinder were fired at least once Basic enable conditions met	> 10.9 V < 655.34 V = TRUE - > 1400 rpm > 9 counts = see sheet enable tables -	20 events continuous	2 Trips
	P06D1	Detects commmunication error with ignition power stage diagnosis ASIC Bank 2	SPI information error from the powerstage ASIC	= TRUE -	12V system voltage 12V system voltage Engine synchronization (*) Engine speed Difference between new and old ignition counter ensuring that all cylinder were fired at least once Basic enable conditions met	> 10.9 V < 655.34 V = TRUE - > 1400 rpm > 9 counts = see sheet enable tables -	20 events continuous	2 Trips
	P060B	Function monitoring - Pedal potentiometer signal 2 voltage check - The measured ADC voltage pulled to low level is compared with a threshold.	Measured voltage at the ADC for the acceleration pedal signal 2	>= 0.215 V	Ignition is on AD-input to low-level (Short Circuit to Ground) Basic enable conditions met	= TRUE - = TRUE - = TRUE -	0.1 sec continuous	1 Trip
	P060B	Function monitoring - Test voltage range check - The measured ADC test voltage channel voltage is compared with thresholds.	Measured voltage at the ADC test voltage input OR Measured voltage at the ADC test voltage input	> 4.8291 V < 4.7266 V	Ignition is on Basic enable conditions met	= TRUE - = TRUE -	0.15 sec continuous	1 Trip
	P060A	**Path 1:** CAN and Flexray shut-off path test	Detects if CAN and Flexray transmission is diabled in case of an error	= TRUE -	Shut-Off path test is completed Ignition ON Basic enable conditions met	= TRUE - = TRUE - = see sheet enable tables -	once per driving cycle	1 Trip

DIAGNOSTIC SUMMARY TABLES -- ECM								
OBD GROUP: KGMXOBDG07			TEST GROUP: KGMXV04.2088			EMISSIONS STDS: CAL--ULEV125, FED--BIN125		
Component / System	**Fault Code**	**Monitor Strategy Description**	**Malfunction Criteria**	**Threshold Value**	**Secondary Parameters**	**Enable Conditions**	**Time Required**	**MIL Illum.**
		Path 2: Power stage shut-off path test	Detects if power stages is disabled in case of an errror	= TRUE -	Shut-Off path test is completed	= TRUE -		
			OR		Ignition ON	= TRUE -		
			The entire power stage shut-off path test has not been completed	= TRUE -	Basic enable conditions met	= see sheet enable tables -		
			for time	> A * 2.2ms				
			where A - Maximum number of repetitions of shut-off path test	= 450 -				
	P060D	**Path 1:** Detects if the absolute difference between the accelerator pedal signal 1 voltage and the accelerator pedal signal 2 voltage exceeds with a threshold (part pedal).	(		Ignition ON	= TRUE -	0.026 sec continuous	1 Trip
			Absolute difference of accelerator pedal position sensor voltages, calculated by the following formula: | max[(a);(b)] - max[(b);(c)] I	> 0.3606 V	(		0.026 sec	
					maximum value between the accelerator pedal position sensor 1 raw voltage (from ADC) and the voltage threshold for start of plausibility check of the accelerator signal	<= 4.061 V		
					OR			
			where: (a) Accelerator pedal position sensor 1 current voltage (from ADC)	= measured parameter -	maximum value between the voltage threshold for start of plausibility check of the accelerator signal and the accelerator pedal position sensor 2 raw voltage (from ADC)	<= 4.061 V		
			(b) Voltage threshold for start of plausibility check of the accelerator signal	= 0.848 V	)			
			(c) Accelerator pedal position sensor 2 current voltage (from ADC)	= measured parameter -	Null load test impulse check in ADC monitoring is not active	= TRUE -		
			)		Basic enable conditions met	= TRUE -		
					No accelerator pedal fault	= TRUE -		
		Path 2: Detects if the absolute difference between the accelerator pedal signal 1 voltage and the accelerator pedal signal 2 voltage exceeds with a threshold (full pedal).	(		Ignition ON	= TRUE -	0.026 sec continuous	1 Trip
			Absolute difference of accelerator pedal position sensor voltages, calculated by the following formula: | max[(a);(b)] - max[(b);(c)] I	> 0.3606 V	(		0.026 sec	
					maximum value between the accelerator pedal position sensor 1 raw voltage (from ADC) and the voltage threshold for start of plausibility check of the accelerator signal	> 4.061 V		
			where:		maximum value between the voltage threshold for start of plausibility check of the accelerator signal and the accelerator pedal position sensor 2 raw voltage (from ADC)	> 4.061 V		
			(a) Accelerator pedal position sensor 1 current voltage (from ADC)	= measured parameter -	)			
			(b) Voltage threshold for start of plausibility check of the accelerator signal	= 0.848 V	Null load test impulse check in ADC monitoring is not active	= TRUE -		
			(c) Accelerator pedal position sensor 2 current voltage (from ADC)	= measured parameter -	Basic enable conditions met	= TRUE -		
			)		No accelerator pedal fault	= TRUE -		
		Path 3: For accelerator pedal sensor 1 and 2 separately, detects if the learned normalized accelerator pedal voltage of Level 2 is greater than the learned normalized accelerator pedal voltage of Level 1.	Difference between the minimum learned normalized accelerator pedal voltage L2 and the minimum learned normalized pedal voltage L1 - accelerator pedal sensor 1, calculated by the following formula:	> 0 -	Igntion ON	= TRUE -	continuous	1 Trip
			(d) > (e) where		Basic enable conditions met	= TRUE -		
			(d) Minimum learned normalized pedal voltage L2 - accelerator pedal sensor 1	= measured parameter -				
			(e) Minimum learned normalized pedal voltage L1 - accelerator pedal sensor 1	= measured parameter -				
			OR					
			Difference between the minimum learned normalized accelerator pedal voltage L2 and the minimum learned normalized pedal voltage L1 - accelerator pedal sensor 2, calculated by the following formula: (f) > (g) where	> 0 -				
			(f) Minimum learned normalized pedal voltage L2 - accelerator pedal sensor 2	= measured parameter -				

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required			MIL Illum.
			(g) Minimum learned normalized pedal voltage L1 - accelerator pedal sensor 2	=	measured parameter	-								
	P061C	Engine speed plausibility check - The difference between calculated (function monitoring) and measured engine speed is greater than a calibrated threshold for a calibrated period of time	Difference between calculated engine speed from function monitoring and measured engine speed	>=	320	rpm	Engine synchronization is active	=	TRUE	-	0.08	sec	continuous	1 Trip
							Engine speed signal is valid (angle counter difference >=0)	=	TRUE	-				
							Synchronization is not lost	=	TRUE	-				
							Calculated high resolution engine speed in function monitoring	>=	520	rpm				
							Basic enable conditions met	=	TRUE	-				
		Detects if minimum engine speed is reached and debounced for a calibrated period of time	Engine speed gradient	>=	520	rpm	Engine synchronization is active	=	TRUE	-				
			Debounce time for engine speed gradient in function monitoring	>=	0.52	sec	Engine speed signal is not valid (angle counter difference < 0)	=	TRUE	-				
							Synchronization is not lost	=	TRUE	-				
							Basic enable conditions met	=	TRUE	-				
	P0607	**Path 1:** Monitoring ABE activation	ABE line active	=	TRUE	-	Shut-off path test active	=	FALSE	-	0.05	sec	continuous	1 Trip
							ECU is in DRIVE state	=	TRUE	-				
							(							
							Battery voltage	>	8	V				
							)							
							For time	>=	0.1	sec				
							Basic enable conditions met	=	see sheet enable tables	-				
		Path 2: Monitoring shut-off by query-response communication	WDA line active	=	TRUE	-	Shut-off path test active	=	FALSE	-	0.05	sec	continuous	1 Trip
							ECU is in DRIVE state	=	TRUE	-				
							Basic enable conditions met	=	see sheet enable tables	-				
		Path 3: Monitoring shut-off by error pin activation	Error pin line active	=	TRUE	-	Shut-off path test active	=	FALSE	-	0.05	sec	continuous	1 Trip
							ECU is in DRIVE state	=	TRUE	-				
							Basic enable conditions met	=	see sheet enable tables	-				
		Path 4: Monitoring ABE activation at overvoltage detection	ABE line active	=	TRUE	-	Shut-off path test active	=	FALSE	-	0.05	sec	continuous	1 Trip
			Latching of overvoltage detection is activated	=	TRUE	-	ECU is in DRIVE state	=	TRUE	-				
							Basic enable conditions met	=	see sheet enable tables	-				
Control Module Long Term Memory Reset	P0603	Detects KeepAlive error during runtime at an external device	Any of the peripheral monitoring function reports a keep alive error such as memory errors, incorrect init state, unexpected resets of the external device during runtime	=	TRUE	-	Ignition is ON	=	TRUE	-			Continuous	1 Trip
							Basic enable conditions met	=	see sheet enable tables	-				
	P0603	Detects KeepAlive error during initialization phase at an external device	Any of the peripheral monitoring function reports a keep alive error such as memory errors, incorrect init state, unexpected resets of the external device during initialization phase	=	TRUE	-	Ignition is ON	=	TRUE	-			Once in a Driving Cycle	1 Trip
							Basic enable conditions met	=	see sheet enable tables	-				
	P0604	Read diagnosis for non volatile memory	A memory block could not be read successfully	=	TRUE	-	Ignition is ON	=	TRUE	-				1 Trip
							Basic enabling conditions are met	=	see sheet enable tables	-				
		Write diagnosis for non volatile memory	A memory block could not be stored successfully	=	TRUE	-	Ignition is ON	=	TRUE	-				

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Basic enabling conditions are met	= see sheet enable tables -		
	P30D6	Digital output communication loss/errors. Irregular operation of the SPI for Throttle actuator motor control circuit Bank 1	SPI error read out from power stage diagnoctics of Throttle actuator motor control circuit Bank 1	= TRUE -	(ECU is in DRIVE state	= TRUE -	continuous	2 Trips
					OR ECU is in POSTDRIVE state)	= TRUE -		
					The powerstage of the actuator is switched	= TRUE -		
					(State of the thottle valve powerstage bank 1)	> 0 -		
					Release of adaptation	= FALSE -		
					Actual position is valid	= TRUE -		
					Request safety fuel cut off SKA bank 1, following condition: (	= FALSE -		
					Request reversible safety fuel cut off SKA bank 1, which has following condition: (	= FALSE -		
					Battery voltage for throttle valve operation sufficient bank 1	> 7.5 V		
					OR Engine speed)	> 1000 rpm		
					Limp home position not reached bank 1)	= FALSE -		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
	P30D7	Digital output communication loss/errors. Irregular operation of the SPI for Throttle actuator motor control circuit Bank 2	SPI error read out from power stage diagnoctics of Throttle actuator motor control circuit Bank 2	= TRUE -	(ECU is in DRIVE state	= TRUE -	continuous	2 Trips
					OR ECU is in POSTDRIVE state)	= TRUE -		
					The powerstage of the actuator is switched on, following conditions:	= TRUE -		
					(State of the thottle valve powerstage bank 2)	> 0 -		
					Release of adaptation	= FALSE -		
					Actual position is valid	= TRUE -		
					Request safety fuel cut off SKA bank 2, following condition: (	= FALSE -		
					Request reversible safety fuel cut off SKA bank 2, which has following condition: (	= FALSE -		
					Battery voltage for throttle valve operation sufficient bank 2	> 7.5 V		
					OR Engine speed)	> 1000 rpm		
					Limp home position not reached bank 2)	= FALSE -		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
	P16F3	**Path 1:** Relative air charge range check in function monitoring	Absolute deviation of predicted relative air charge from calculated relative air charge	> 11.3 %	Ignition is ON	= TRUE -	0.52 sec continuous	1 Trip
			for time	>= 0.36 sec	Engine Speed	>= 1200 rpm		
					Injection cut off (ICO) is not requested from function monitoring	= TRUE -		
					Injection cut off (ICO) is not requested	= TRUE -		
					System voltage exceeds 8V	= TRUE -		
					Limp home mode is not requested from function monitoring	= TRUE -		
					No loss of Synchronisation during function monitoring	= TRUE -		
					(ECU is not in pre-drive	= TRUE -		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					OR			
					ECU is not in post-drive	= TRUE -		
					)			
					Air-Fuel check is disabled for function monitoring	= FALSE -		
					Basic enable conditions met	= TRUE -		
		Path 2: Complementary Error in Half Engine Mode status transmitted by Function Monitoring	(		Engine speed	>= 1200 rpm	1.04 sec continuous	1 Trip
			Synchronisation of half engine mode in injection, air charge and ignition	= TRUE -	(			
			Data redundancy to indicate CDA is active	!= 170 -	Injection cut off (ICO) is not requested from Level 1 monitoring	= TRUE -		
			)		Injection cut off (ICO) is not requested from Level 2 monitoring	= TRUE -		
			OR		Battery voltage is in desired range and undervoltage shut-off is not active	= TRUE -		
			(		Limp home mode is not requested from function monitoring	= TRUE -		
			Synchronisation of half engine mode in injection, air charge and ignition	= FALSE -	No loss of Synchronisation during function monitoring	= TRUE -		
			Data redundancy to indicate CDA is active	!= 55 -	)			
			)		(			
					ECU is not in pre-drive state	= TRUE -		
					OR			
					ECU is not in post-drive state	= TRUE -		
					)			
					Air-Fuel check is disabled for function monitoring	= FALSE -		
					Basic enable conditions met	= TRUE -		
		Path 3: Plausibility check w.r.t Ignition condition for cylinder deactivation in function monitoring of Half Engine Mode (HEM)	(		Engine speed	>= 1200 rpm	1.04 sec continuous	1 Trip
			Synchronisation of half engine mode in injection, air charge and ignition	= TRUE -	and			
			Cylinder with combustion in HEM	= FALSE -	(			
			)		Injection cut off (ICO) is not requested from Level 1 monitoring	= TRUE -		
			for time	>= 0.32 sec	Injection cut off (ICO) is not requested from Level 2 monitoring	= TRUE -		
					Battery voltage is in desired range and undervoltage shut-off is not active	= TRUE -		
					Limp home mode is not requested from function monitoring	= TRUE -		
					No loss of Synchronisation during function monitoring	= TRUE -		
					)			
					(			
					ECU is not in pre-drive state	= TRUE -		
					OR			
					ECU is not in post-drive state	= TRUE -		
					)			
					Air-Fuel check is disabled for function monitoring	= FALSE -		
					Basic enable conditions met	= TRUE -		
		Path 4: Ignition check for cylinder deactivation in function monitoring of Half Engine Mode (HEM)	(		Engine speed	>= 1200 rpm	1.04 sec continuous	1 Trip
			Synchronisation of half engine mode in injection, air charge and ignition	= TRUE -	and			
			Cylinder with combustion in HEM	= TRUE -	(			
			)		Injection cut off (ICO) is not requested from Level 1 monitoring	= TRUE -		
			for time	>= 0.08 sec	Injection cut off (ICO) is not requested from Level 2 monitoring	= TRUE -		
					Battery voltage is in desired range and undervoltage shut-off is not active	= TRUE -		
					Limp home mode is not requested from function monitoring	= TRUE -		
					No loss of Synchronisation during function monitoring	= TRUE -		
					)			
					(			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required			MIL Illum.
							ECU is not in pre-drive state	=	TRUE	-				
							OR							
							ECU is not in post-drive state	=	TRUE	-				
							)							
							Air-Fuel check is disabled for function monitoring	=	FALSE	-				
							Basic enable conditions met	=	TRUE	-				
		Path 5: Injection check in cylinder deactivation in function monitoring of Half Engine Mode (HEM)	Synchronisation of half engine mode in injection, air charge and ignition	=	TRUE	-	Engine speed	>=	1200	rpm	1.04	sec	continuous	1 Trip
			for time	>=	0.16	sec	(							
							Injection cut off (ICO) is not requested from Level 1 monitoring	=	TRUE	-				
							Injection cut off (ICO) is not requested from Level 2 monitoring	=	TRUE	-				
							Battery voltage is in desired range and undervoltage shut-off is not active	=	TRUE	-				
							Limp home mode is not requested from function monitoring	=	TRUE	-				
							No loss of Synchronisation during function monitoring	=	TRUE	-				
							)							
							(							
							ECU is not in pre-drive state	=	TRUE	-				
							OR							
							ECU is not in post-drive state	=	TRUE	-				
							)							
							Air-Fuel check is disabled for function monitoring	=	FALSE	-				
							Basic enable conditions met	=	TRUE	-				
		Path 6: Cylinder individual fuel correction rationality check in function monitoring.	(				Ignition is ON	=	TRUE	-	4.16	sec	continuous	1 Trip
			Cylinder individual fuel correction	>	(a*b) + c	%	Engine Speed	>=	1200	rpm				
			where				Injection cut off (ICO) is not requested	=	TRUE	-				
			a : Relative fuel mass for individual cylinder		Measured parameter	%	Injection cut off (ICO) is not requested from function monitoring	=	TRUE	-				
			b : Factor maximum tolerance in check of cylinder-individual fuel in function monitoring		1.101563	-	System voltage exceeds 8V	=	TRUE	-				
			c : Offset tolerance in check of cylinder-individual fuel in function monitoring		10.5	%	Limp home mode is not requested from function monitoring	=	TRUE	-				
			)				No loss of Synchronisation during function monitoring	=	TRUE	-				
			OR				(							
			(				ECU is not in pre-drive state	=	TRUE	-				
			Cylinder individual fuel correction	<	(a*b) - c	%	OR							
			where				ECU is not in post-drive state	=	TRUE	-				
			a : Relative fuel mass for individual cylinder		Measured parameter	%	)							
			b : Factor maximum tolerance in check of cylinder-individual fuel in function monitoring		0.898438	-	Air-Fuel check is disabled for function monitoring	=	FALSE	-				
			c : Offset tolerance in check of cylinder-individual fuel in function monitoring		10.5	%	Basic enable conditions met	=	see sheet enable tables	-				
			)											
		Path 7: The complement check of cylinder counter for homogeneous injection, stratified injection and calculation of post injection at dynamic load.	The complement of cylinder counter is not equal to the redundant counter for homogenous injection in function monitoring	=	TRUE	-	Ignition is ON	=	TRUE	-	4.16	sec	continuous	1 Trip
			OR				Engine Speed	>=	1200	rpm				
			The complement of cylinder counter is not equal to the redundant counter for stratified injection in function monitoring	=	TRUE	-	Injection cut off (ICO) is not requested	=	TRUE	-				
			OR				Injection cut off (ICO) is not requested from function monitoring	=	TRUE	-				
			The complement of cylinder counter is not equal to the redundant counter for calculation of post-injection at dynamic load in function monitoring	=	TRUE	-	System voltage exceeds 8V	=	TRUE	-				
			OR				Limp home mode is not requested from function monitoring	=	TRUE	-				
			Cylinder counter for homogeneous injection	>=	8	-	No loss of Synchronisation during function monitoring	=	TRUE	-				
			OR				(							
			Cylinder counter for stratified injection	>=	8	-	ECU is not in pre-drive state	=	TRUE	-				
			OR				OR							
			Cylinder counter for calculation of post-injection at dynamic load	>=	8	-	ECU is not in post-drive state	=	TRUE	-				
							)							

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Air-Fuel check is disabled for function monitoring	= FALSE -		
					Basic enable conditions met	= see sheet enable tables -		
		Path 8: Plausibility check : Average value for cylinder individual fuel correction in function monitoring is greater than a calibrated threshold for a calibrated period of time	Average value for cylinder individual fuel correction in function monitoring	> 1.029999 -	Ignition is ON	= TRUE -	4.16 sec continuous	1 Trip
					Engine Speed	>= 1200 rpm		
					Injection cut off (ICO) is not requested	= TRUE -		
					Injection cut off (ICO) is not requested from function monitoring	= TRUE -		
					System voltage exceeds 8V	= TRUE -		
					Limp home mode is not requested from function monitoring	= TRUE -		
					No loss of Synchronisation during function monitoring	= TRUE -		
					(			
					ECU is not in pre-drive state	= TRUE -		
					OR			
					ECU is not in post-drive state	= TRUE -		
					)			
					Air-Fuel check is disabled for function monitoring	= FALSE -		
					Basic enable conditions met	= see sheet enable tables -		
	P16F3	**Path 9:** Detects plausibility check of air/fuel ratio in function monitoring: complement check	(		Engine Speed	>= 1200 rpm	0.52 sec continuous	1 Trip
			Complement of mode of operation in gasoline direct injection (GDI) for monitoring where: A: Mode of operation in gasoline direct injection (GDI) for monitoring)	!= A -	Injection cut off (ICO) is not requested	= TRUE -		
					Injection cut off (ICO) is not requested from function monitoring	= TRUE -		
					System voltage exceeds 8V	= TRUE -		
					Limp home mode is not requested from function monitoring	= TRUE -		
					No loss of Synchronisation during function monitoring	= TRUE -		
					(			
					ECU is not in pre-drive state	= TRUE -		
					ECU is not in post-drive state	= TRUE -		
					)			
					Air-Fuel check is disabled for function monitoring	= FALSE -		
					No pending or confirmed DTCs	= see sheet enable tables -		
					Basic enable conditions met	= see sheet inhibit tables -		
		Path 10: Checks the operation mode of ECU in function monitoring	(		Engine Speed	>= 1200 rpm	0.52 sec continuous	1 Trip
			Gasoline direct injection for monitoring is not in homogeneous operation mode	= TRUE -	Injection cut off (ICO) is not requested	= TRUE -		
			Gasoline direct injection (GDI) for monitoring is not in homogeneous split mode	= TRUE -	Injection cut off (ICO) is not requested from function monitoring	= TRUE -		
			Gasoline direct injection (GDI) for monitoring is not in homogeneous knock protection mode)	= TRUE -	System voltage exceeds 8V	= TRUE -		
					Limp home mode is not requested from function monitoring	= TRUE -		
					No loss of Synchronisation during function monitoring	= TRUE -		
					(			
					ECU is not in pre-drive state	= TRUE -		
					ECU is not in post-drive state	= TRUE -		
					)			
					Air-Fuel check is disabled for function monitoring	= FALSE -		
					No pending or confirmed DTCs	= see sheet enable tables -		
					Basic enable conditions met	= see sheet inhibit tables -		
		Path 11: The Lambda setpoint is checked against the range of permissable values for bank 1 and bank 2 systems	Desired lambda limitation for Bank 1 for monitoring	< 0.67944 -	Engine Speed	>= 1200 rpm	0.52 sec continuous	1 Trip
			OR		Injection cut off (ICO) is not requested	= TRUE -		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
			Desired lambda limitation for Bank 2 for monitoring	< 0.67944 -	Injection cut off (ICO) is not requested from function monitoring	= TRUE -		
			OR		System voltage exceeds 8V	= TRUE -		
			Desired lambda limitation for Bank 1 for monitoring	> 1.20044 -	Limp home mode is not requested from function monitoring	= TRUE -		
			OR		No loss of Synchronisation during function monitoring	= TRUE -		
			Desired lambda limitation for Bank 2 for monitoring	> 1.20044 -	(			
					ECU is not in pre-drive state	= TRUE -		
					ECU is not in post-drive state	= TRUE -		
					)			
					Air-Fuel check is disabled for function monitoring	= FALSE -		
					No pending or confirmed DTCs	= see sheet enable tables -		
					Basic enable conditions met	= see sheet inhibit tables -		
		Path 12: Ignition angle plausibility check in function monitoring	Ignition angle value	!= A degrees	Ignition is ON	= TRUE -	0.52 sec continuous	1 Trip
			where: A: complement of "the complement of the ignition angle value"		Engine Speed	>= 1200 rpm		
					Injection cut off (ICO) is not requested	= TRUE -		
					Injection cut off (ICO) is not requested from function monitoring	= TRUE -		
					System voltage exceeds 8V	= TRUE -		
					Limp home mode is not requested from function monitoring	= TRUE -		
					No loss of Synchronisation during function monitoring	= TRUE -		
					(			
					ECU is not in pre-drive state	= TRUE -		
					OR			
					ECU is not in post-drive state	= TRUE -		
					)			
					Air-Fuel check is disabled for function monitoring	= FALSE -		
					Basic enable conditions met	= see sheet inhibit tables -		
		Path 13: Torque comparison - The difference between current torque in the function monitoring and the filtered relative permissible torque is compared with threshold.	(Difference between current torque and filtered relative permissible torque in function monitoring	> 0 %	Ignition is ON	= TRUE -	0.52 sec continuous	1 Trip
			for time	>= 0.52 sec	Injection cut off (ICO) is not requested from function monitoring	= TRUE -		
			OR		Injection cut off (ICO) is not requested	= TRUE -		
			Error sum of the relative deviation from the permissable torque in function monitoring)	> 8 %*s	System voltage exceeds 8V	= TRUE -		
					Limp home mode is not requested from function monitoring	= TRUE -		
					No loss of Synchronisation during function monitoring	= TRUE -		
					(			
					ECU is not in pre-drive state	= TRUE -		
					OR			
					ECU is not in post-drive state	= TRUE -		
					)			
					Basic enable conditions met	= see sheet inhibit tables -		
		Path 14: The injection cut-off pattern total is evaluated by compared with the expected and actual injection cut-off pattern.	The complement of injection cut-off pattern total is not equal to the injection cut-off pattern	= TRUE -	Ignition is ON	= TRUE -	0.52 sec continuous	1 Trip
					Engine Speed	>= 1200 rpm		
					Injection cut off (ICO) is not requested	= TRUE -		
					Injection cut off (ICO) is not requested from function monitoring	= TRUE -		
					System voltage exceeds 8V	= TRUE -		
					Limp home mode is not requested from function monitoring	= TRUE -		
					No loss of Synchronisation during function monitoring	= TRUE -		
					(			
					ECU is not in pre-drive state	= TRUE -		
					OR			
					ECU is not in post-drive state	= TRUE -		
					)			
					Air-Fuel check is disabled for function monitoring	= FALSE -		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required			MIL Illum.
							Basic enable conditions met	=	see sheet inhibit tables	-				
		Path 15: The complement check of driver injection demand for homogeneous injection, stratified injection and calculation of post injection at dynamic load.	The complement of driver injection demand is not equal to the redundant driver injection demand for homogenous injection in function monitoring	=	TRUE	-	Ignition is ON	=	TRUE	-	0.52	sec	continuous	1 Trip
			OR				and							
			The complement of driver injection demand is not equal to the redundant driver injection demand for stratified injection in function monitoring	=	TRUE	-	Engine Speed	>=	1200	rpm				
			OR				Injection cut off (ICO) is not requested	=	TRUE	-				
			The complement of driver injection demand is not equal to the redundant driver injection demand for calculation of post injection at dynamic in function monitoring	=	TRUE	-	Injection cut off (ICO) is not requested from function monitoring	=	TRUE	-				
							System voltage exceeds 8V	=	TRUE	-				
							Limp home mode is not requested from function monitoring	=	TRUE	-				
							No loss of Synchronisation during function monitoring	=	TRUE	-				
							(							
							ECU is not in pre-drive state	=	TRUE	-				
							OR							
							ECU is not in post-drive state	=	TRUE	-				
							)							
							Air-Fuel check is disabled for function monitoring	=	FALSE	-				
							Basic enable conditions met	=	see sheet inhibit tables	-				
		Path 16: The complement of injection mode timing check in function monitoring.	The complement of injection timing is not equal to the redundant injection timing in function monitoring	=	TRUE	-	Ignition is ON	=	TRUE	-	0.52	sec	continuous	1 Trip
							Engine Speed	>=	1200	rpm				
							Injection cut off (ICO) is not requested	=	TRUE	-				
							Injection cut off (ICO) is not requested from function monitoring	=	TRUE	-				
							System voltage exceeds 8V	=	TRUE	-				
							Limp home mode is not requested from function monitoring	=	TRUE	-				
							No loss of Synchronisation during function monitoring	=	TRUE	-				
							(							
							ECU is not in pre-drive state	=	TRUE	-				
							OR							
							ECU is not in post-drive state	=	TRUE	-				
							)							
							Air-Fuel check is disabled for function monitoring	=	FALSE	-				
							Basic enable conditions met	=	see sheet inhibit tables	-				
		Path 17: Complement check to ensure the stored injection cut off information for all cylinders for homogeneous injection, stratified injection and calculation of post injection at dynamic load.	Injection cut off mask is not equal to the injection cut off pattern total in the cylinder individual cut off array at the cylinder for homogeneous injection	=	TRUE	-	Ignition is ON	=	TRUE	-	0.52	sec	continuous	1 Trip
			OR				Engine Speed	>=	1200	rpm				
			Injection cut off pattern total is not equal to the complement of injection cut off pattern total in the cylinder individual cut off array at position of stratified injection	=	TRUE	-	Injection cut off (ICO) is not requested	=	TRUE	-				
			OR				Injection cut off (ICO) is not requested from function monitoring	=	TRUE	-				
			Injection cut off pattern total is not equal to the complement of injection cut off pattern total in the cylinder individual cut off array at position of calculation of post injection at dynamic load	=	TRUE	-	System voltage exceeds 8V	=	TRUE	-				
							Limp home mode is not requested from function monitoring	=	TRUE	-				
							No loss of Synchronisation during function monitoring	=	TRUE	-				
							(							
							ECU is not in pre-drive state	=	TRUE	-				
							OR							
							ECU is not in post-drive state	=	TRUE	-				
							)							
							Air-Fuel check is disabled for function monitoring	=	FALSE	-				

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Basic enable conditions met	= see sheet inhibit tables -		
		Path 18: Injection cut-off pattern total is checked against the injections currently demanded from the driver for homogeneous and calculation of post injection at dynamic load	(		All the partial injections are calculated in S0	= TRUE -	0.52 sec continuous	1 Trip
			Driver injection demand for homogeneous injection mode	> 0 -	OR			
			(		All the partial injections are calculated in S0 and S1 (mixed timing)	= TRUE -		
			Injection is allowed	= FALSE -	Engine Speed	>= 1200 rpm		
			OR		Injection cut off (ICO) is not requested	= TRUE -		
			Injection cut-off pattern total is performed individually for homogeneous injection mode	= TRUE -	Injection cut off (ICO) is not requested from function monitoring	= TRUE -		
			)		System voltage exceeds 8V	= TRUE -		
			)		Limp home mode is not requested from function monitoring	= TRUE -		
			OR		No loss of Synchronisation during function monitoring	= TRUE -		
			(		(			
			Driver injection demand for calculation of post injection mode	> 0 -	ECU is not in pre-drive state	= TRUE -		
			(		OR			
			Injection is allowed	= FALSE -	ECU is not in post-drive state	= TRUE -		
			OR		)			
			Injection cut-off pattern total is performed individually for calculation of post injection mode	= TRUE -	Air-Fuel check is disabled for function monitoring	= FALSE -		
			)		Basic enable conditions met	= see sheet inhibit tables -		
			)					
		Path 19: Injection cut-off pattern total is checked against the injections currently demanded from the driver for stratified injection modes.	(		All the partial injections are calculated in S0 and S1	= TRUE -	0.52 sec continuous	1 Trip
			Driver injection demand for stratified injection mode	> 0 -	Engine Speed	>= 1200 rpm		
			(		Injection cut off (ICO) is not requested	= TRUE -		
			Injection is allowed	= FALSE -	Injection cut off (ICO) is not requested from function monitoring	= TRUE -		
			OR		System voltage exceeds 8V	= TRUE -		
			Injection cut-off pattern total is performed individually for stratified injection mode	= TRUE -	Limp home mode is not requested from function monitoring	= TRUE -		
			)		No loss of Synchronisation during function monitoring	= TRUE -		
			)		(			
					ECU is not in pre-drive state	= TRUE -		
					OR			
					ECU is not in post-drive state	= TRUE -		
					)			
					Air-Fuel check is disabled for function monitoring	= FALSE -		
					Basic enable conditions met	= see sheet inhibit tables -		
		Path 20: Fault check of ECU signal input monitoring Air and fuel	Compliment of synchronous counter S0 is not equal to redundant synchronous counter S0 in function monitoring	= TRUE -	Ignition is ON	= TRUE -	0.52 sec continuous	1 Trip
			OR		Engine Speed	>= 400 rpm		
			Compliment of synchronous counter S1 is not equal to redundant synchronous counter S1 in function monitoring	= TRUE -	Injection cut off (ICO) is not requested	= TRUE -		
			OR		Injection cut off (ICO) is not requested from function monitoring	= TRUE -		
			Difference between expected values for the number of calls of synchronous counter S0 frames in function monitoring based on the course of engine speed and previous synchronous counter S0	> 1 count	System voltage exceeds 8V	= TRUE -		
			OR		Limp home mode is not requested from function monitoring	= TRUE -		
			Difference between expected values for the number of calls of synchronous counter S1 frames in function monitoring based on the course of engine speed and previous synchronous counter S1	> 1 count	No loss of Synchronisation during function monitoring	= TRUE -		
					(			
					ECU is not in pre-drive state	= TRUE -		
					OR			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required			MIL Illum.
							ECU is not in post-drive state	=	TRUE	-				
							)							
							Air-Fuel check is disabled for function monitoring	=	FALSE	-				
							Basic enable conditions met	=	TRUE	-				
		Path 21: This function performs a plausibility check of the mixture control for GDI systems and safeguards the fuel mass.	Expected value for relative fuel mass in function monitoring (GDI)	>	(A*B) + C	%	Ignition is ON	=	TRUE	-	0.512	sec	continuous	1 Trip
			where				Engine Speed	>=	1200	rpm				
			A: Relative fuel mass				Injection cut off (ICO) is not requested	=	TRUE	-				
			B: Factor maximum tolerance in check of bank selective fuel in function monitoring (GDI)	=	1.101563	-	Injection cut off (ICO) is not requested from function monitoring	=	TRUE	-				
			C : Offset tolerance in check of fuel in function monitoring (GDI)	=	10.5	%	System voltage exceeds 8V	=	TRUE	-				
			OR				Limp home mode is not requested from function monitoring	=	TRUE	-				
			Expected value for relative fuel mass in function monitoring (GDI)	<	(A*B) - C	%	No loss of Synchronisation during function monitoring	=	TRUE	-				
			where				(							
			A: Relative fuel mass				ECU is not in pre-drive state	=	TRUE	-				
			B : Factor minimum tolerance in check of bank selective fuel in function monitoring (GDI)		0.898438	-	OR							
			C : Offset tolerance in check of fuel in function monitoring (GDI)		10.5	%	ECU is not in post-drive state	=	TRUE	-				
							)							
							Air-Fuel check is disabled for function monitoring	=	FALSE	-				
							Basic enable conditions met	=	see sheet enable tables	-				
		Path 22: Control fault check of mixture management for GDI.	After start adaption factor in function monitoring (see Look-Up-Table #1)	>	1.01563	deg C	Ignition is ON	=	TRUE	-	0.512	sec	continuous	1 Trip
			OR				Engine Speed	>=	1200	rpm				
			(				Injection cut off (ICO) is not requested	=	TRUE	-				
			Additive adaptive correction of the relative fuel amount on GDI path in function monitoring	>	7.078	%	Injection cut off (ICO) is not requested from function monitoring	=	TRUE	-				
			OR				System voltage exceeds 8V	=	TRUE	-				
			Additive adaptive correction of the relative fuel amount on GDI path bank 2 in function monitoring	>	7.078	%	Limp home mode is not requested from function monitoring	=	TRUE	-				
			)				No loss of Synchronisation during function monitoring	=	TRUE	-				
			OR				(							
			(				ECU is not in pre-drive state	=	TRUE	-				
			lambda collector output in function monitoring	>	1.28006	-	OR							
			OR				ECU is not in post-drive state	=	TRUE	-				
			lambda collector output bank 2 in function monitoring	>	1.28006	-	)							
			)				Air-Fuel check is disabled for function monitoring	=	FALSE	-				
			OR				Basic enable conditions met	=	see sheet enable tables	-				
			(											
			Fuel mixture adaption for GDI injection path in function monitoring (see Look-Up-Table #2)	>	1.250061	rpm								
			OR											
			Fuel mixture adaption for GDI injection path bank 2 in function monitoring (see Look-Up-Table #2)	>	1.250061	rpm								
			)											
			OR											
			(											
			(											
			Relative fuel part of the purge control in function monitoring	<	(a*b) - c									
			where:											
			a : Relative fuel mass on GDI in function monitoring											
			c : Factor tolerance in check of canister purge in function monitoring		-0.090942	-								
			d : Offset tolerance in check of canister purge in function monitoring		6	%								
			)											
			OR											
			(											
			Relative fuel part of the purge control bank 2 in function monitoring	<	(a*b) - c									
			where:											

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
			a : Relative fuel mass on GDI in function monitoring for Bank 2					
			b : Factor tolerance in check of canister purge in function monitoring	-0.090942 -				
			c : Offset tolerance in check of canister purge in function monitoring	6 %				
			)					
			)					
			OR					
			(					
			(					
			Engine Speed	>= 1400 rpm				
			Fuel evaporated mass of the engine oil in function monitoring	< -0.094 %				
			)					
			OR					
			(					
			Engine Speed	< 1400 rpm				
			Fuel evaporated mass of the engine oil in function monitoring	< -0.609 %				
			)					
			)					
			OR					
			The complement of cylinder individual Atkinson fuel amount is not equal to the redundant cylinder individual Atkinson fuel amount in function monitoring	= TRUE -				
			OR					
			Mixture adaption factor for Atkinson gasoline backflow in function monitoring	> 1.98999 -				
		Path 23: Monitoring of the electronic transmission range select (ETRS) system (with irreversible error reaction of Level 2)	Level 1 request to apply EPB invalid	= TRUE -	Ignition is ON	= TRUE -	0.04 sec continuous	1 Trip
			for counts	>= 50 -	(			
			means:		ECU is not in pre-drive state	= TRUE -		
			(		OR			
			Level 1 request to apply EPB	= TRUE -	ECU is not in post-drive state	= TRUE -		
			Vehicle speed	>= 3.11 mph	)			
			for counts	>= 5 -	Basic enable conditions met	= see sheet enable tables -		
			)					
			OR					
			Change of direction request from level 1 invalid	= TRUE -				
			for counts	>= 50 -				
			OR					
			Missed level 1 request to apply EPB	= TRUE -				
			for counts	>= 50 -				
			means:					
			(					
			Level 1 request to apply EPB	FALSE -				
			Level 2 request to apply EPB	TRUE -				
			)					
			OR					
			Park engagement and EPB engagement error set	= TRUE -				
			for counts	>= 50 -				
			means:					
			(					
			Valid park range request	= TRUE -				
			Park engaged by TCU	= FALSE -				
			Level 1 request to apply EPB	= FALSE -				
			)					
			for counts	>= 150 -				
			OR					
			Unintended vehicle movement despite park request	= TRUE -				
			for counts	>= 50 -				
			OR					
			Unintended leave of park state by the TCU despite park request	= TRUE -				
			for counts	>= 50 -				
			OR					
			'Shift away from park range' request from level 1 invalid	= TRUE -				
			for counts	>= 50 -				
		Path 24: Monitoring of the electronic transmission range select (ETRS) system (with reversible error reaction of Level 2)	Change of direction request from level 1 invalid	= TRUE -	Ignition is ON	= TRUE -	0.04 sec continuous	1 Trip
			OR		(			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
			'Shift away from park range' request from level 1 invalid	= TRUE -	ECU is not in pre-drive state OR ECU is not in post-drive state) Basic enable conditions met	= TRUE - = TRUE - = see sheet enable tables -		
ECM Programing Errors	P0633	Security key not programmed	Immobilizer secret key is not programmed	= TRUE -	(Ignition is ON OR Starter control power mode is not in Power OFF mode) Immobilizer is deactivated Manufacturer Enable Counter used to automatically arm Seed & Key Basic enable conditions met	 = FALSE - - = TRUE - = FALSE - = 0 - = see sheet enable tables -	Execution Rate continuous	no MIL
	P1631	Incorrect password	An incorrect pre−release password	= TRUE -	(Ignition is ON OR Starter control power mode is not in Power OFF mode) Immobilizer is deactivated Secret key is programmed Basic enable conditions met	 = FALSE - = TRUE - = FALSE - = TRUE - = see sheet enable tables -	Execution Rate continuous	no MIL
	P0513	Incorrect response from Immobiliser for the challenge send by ECM	An Incorrect response is received from Immobiliser for the challenge send by ECM	= TRUE -	(Ignition is ON OR Starter control power mode is not in Power OFF mode) Immobilizer is deactivated Secret key is programmed Basic enable conditions met	 = FALSE - - = TRUE - - = FALSE - = TRUE - = see sheet enable tables	Execution Rate continuous	no MIL
	P1649	Security Code not programmed	Immobilizer Security code is not programmed	= TRUE -	(Ignition is ON OR Starter control power mode is not in Power OFF mode) Immobilizer is deactivated Global A Immo 1=GlobalA environment Manufacturer Enable Counter used to automatically arm Seed & Key Basic enable conditions met	 = FALSE - = TRUE - = FALSE - = TRUE - = 0 - = see sheet enable tables -	Execution Rate continuous	no MIL
	P0602	Diagnosis of Code Variation of Start Calibration	Dataset is not valid	= TRUE -	Ignition is ON Counter for proc to be executed alternatively Basic enable conditions met	= TRUE - = FALSE - = see sheet enable tables -	once per driving cycle (during initialization)	5 Trips
	P0630	Monitoring of Vehicle Identification Number	VIN Not programmed : VIN contains 0xFF in all the 17 bytes	= TRUE -	Ignition is ON VIN buffer is read successfully from EEP Counter for proc to be executed alternatively Basic enable conditions met	= TRUE - = TRUE - = FALSE - = see sheet enable tables -	continuous	1 Trip

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required			MIL Illum.
ECM Ignition Accessory Input Pin	P2538	Monitoring of T15 handling with ACC-Pin and T15-Pin for Accessory Position Circuit High fault	Terminal 15 status	=	TRUE	-	No pending or confirmed DTCs	=	see sheet enable tables	-	1	sec	once per driving cycle	2 Trips
			Wake up status for accessory pin (Application Supervisor)	>	0	-	Basic enabling conditions are met	=	see sheet inhibit tables	-				
			CAN message: CAN status	=	CRANKREQUEST	-								
	P2537	Monitoring of T15 handling with ACC-Pin and T15-Pin for Accessory Position Circuit Low fault	Terminal 15 status	=	TRUE	-	No pending or confirmed DTCs	=	see sheet enable tables	-	1	sec	once per driving cycle	-
			Wake up status for accessory pin (Application Supervisor)	=	0	-	Basic enabling conditions are met	=	see sheet inhibit tables	-				
			CAN message: CAN status	=	RUN	-								
		Monitoring of the Accessory Position Circuit CAN Message	Terminal 15 status	=	TRUE	-	No pending or confirmed DTCs	=	see sheet enable tables	-	10	counts	once per driving cycle	-
			Wake up status for accessory pin (Application Supervisor)	=	0	-	Basic enabling conditions are met	=	see sheet inhibit tables	-				
			Counter for power mode diagnostics: message received	=	0	-								
ECM Ignition On/Start Input Pin	P2535	Monitoring of T15 handling with ACC-Pin and T15-Pin for Accessory Position Circuit Low fault	Terminal 15 status	=	TRUE	-	No pending or confirmed DTCs	=	see sheet enable tables	-	1	sec	once per driving cycle	1 Trip
			Wake up status for accessory pin (Application Supervisor)	=	0	-	Basic enabling conditions are met	=	see sheet inhibit tables	-				
			CAN message: CAN status	=	CRANKREQUEST	-								
	P2534	Monitoring of T15 handling with ACC-Pin and T15-Pin for Accessory Position Circuit Low fault	Terminal 15 status	=	FALSE	-	No pending or confirmed DTCs	=	see sheet enable tables	-	1	sec	once per driving cycle	1 Trip
			Wake up status for accessory pin (Application Supervisor)	>	0	-	Basic enabling conditions are met	=	see sheet inhibit tables	-				
			CAN message: CAN status	=	RUN	-								
Target Wheel Adaptation for Misfire Detection	P0315	Indicates that the engine has experienced a problem with the crankshaft position sensor and/or the crankshaft sensor wheel by monitoring the adapted crankshaft segment time value against a calibrated threshold	**Method 1**: Median segment time adaptation value from test frame	>	1.199951	degrees	Engine speed	>	1400	rpm			Every 11th segment time adaptation sample	1 Trip
			OR				Engine speed	<	3000	rpm				
			Method 1: Median segment time adaptation value in the alternative segment position (catalyst heating) from test frame	>	3.999939	degrees	Engine coolant temperature	>	39.96	deg C				
			where				Rough road detection is not active	=	TRUE	-				
			[One test frame defined by:				(means:							
			Segment time adaptation sample counts	=	11	-	Average wheel acceleration rear axle	<	0	m/(s^2)				
			(sample means:				OR							
			Current segment time adaptation value		measured parameter		Average wheel acceleration front axle)	<	0	m/(s^2)				
			(means:				Traction or electronic stability control torque intervention is not active	=	TRUE	-				
			Segment time ratio	=	[A]/[B]	-	Calculated EPM segment time is valid	=	TRUE	-				
			where				Half-engine mode transition is not active	=	TRUE	-				
			[A] Modelled segment time	=	measured parameter	µs	Half-engine mode state is not active	=	TRUE	-				
			[B] Measured segment time	=	measured parameter	µs	Overrun/fuel cut-off is active	=	TRUE	-				
			Filtered for				Segment time adaptation is not complete	=	TRUE	-				
			N camshaft revolutions				No pending or confirmed DTCs	=	see sheet inhibit tables	-				
			where				Basic enable conditions met	=	see sheet enable tables	-				
			(N	=	(ln([A]/[B]))/(ln[C])	Camshaft revolutions								
			where											
			[A] Filter factor lower limit	=	0.0500031	-								
			[B] Filter factor upper limit	=	0.1999969	-								
			[C] Filter factor slope)))]	=	0.8999939	-								
			for											
			Maximum adaptation value threshold exceedance counter	≥	3	events								
			Method 2: Difference between the maximum and minimum filtered ratios of the modelled to measured segment time during one sample	>	0.399933	degrees							Every segment time adaptation sample	1 Trip
			OR											

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
			Method 2: Difference between the maximum and minimum filtered ratios of the modelled to measured segment time in the alternative segment position (catalyst heating) during one sample	1.799927 degrees				
			where					
			(sample means:					
			Current segment time adaptation value	measured parameter -				
			(means:					
			Segment time ratio	= [A]/[B] -				
			where					
			[A] Modelled segment time	= measured parameter µs				
			[B] Measured segment time	= measured parameter µs				
			Filtered for					
			N camshaft revolutions					
			where					
			(N	= (ln([A]/[B]))/(ln[C]) Camshaft revolutions				
			where					
			[A] Filter factor lower limit	= 0.0500031 -				
			[B] Filter factor upper limit	= 0.1999969 -				
			[C] Filter factor slope)))]	= 0.8999939 -				
			for					
			Segment time ratio difference threshold exceedance counter	≥ 3 events				
			Method 3: Difference between the maximum and minimum segment time adaptation values of the inner five adaptation samples	> 0.119934 degrees			Every 11th segment time adaptation sample	1 Trip
			OR					
			Method 3: Difference between the maximum and minimum segment time adaptation values of the inner five adaptation samples in the alternative segment position (catalyst heating)	> [A] x ([B] / [C]) -				
			where					
			[A] Maximum spread threshold of the inner five adaptation values in the standard segment position	0.119934 degrees				
			[B] Standard segment position length	90 deg KW				
			[C] Alternative segment position length	90 deg KW				
			and					
			(sample means:					
			Current segment time adaptation value	measured parameter -				
			(means:					
			Segment time ratio	= [A]/[B] -				
			where					
			[A] Modelled segment time	= measured parameter µs				
			[B] Measured segment time	= measured parameter µs				
			Filtered for					
			N camshaft revolutions					
			where					
			(N	= (ln([A]/[B]))/(ln[C]) Camshaft revolutions				
			where					
			[A] Filter factor lower limit	= 0.0500031 -				
			[B] Filter factor upper limit	= 0.1999969 -				
			[C] Filter factor slope)))]	= 0.8999939 -				
			for					
			Inner five segment time adaptation value difference threshold exceedance counter	≥ 3 events				
High Speed CAN Bus	U0073	Diagnosis of Bus off error for High Speed CAN controller	Bus off error is detected at High Speed CAN controller	= TRUE -	Ignition is ON No pending or confirmed DTCs Basic enable conditions met	= TRUE - = see sheet inhibit tables - = see sheet enable tables -	2 sec continuous	1 Trips
High Speed CAN Bus	U0101	Detects when the time since the last message from the Transmission control module for the frame ETEI_Transmission_General_Status was received is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the Transmission control module was received is greater than a supervision timeout value	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	1 sec continuous	1 Trip

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required			MIL Illum.
	U0101	Detects when the time since the last message from the Transmission control module for the frame PPEI_Trans_General_Status_1_Rx was received is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the Transmission control module was received is greater than a supervision timeout value	=	TRUE	-	Ignition is ON	=	TRUE	-	1	sec	continuous	1 Trip
							Basic enable conditions met	=	see sheet enable tables	-				
	U0101	Detects when the time since the last message from the Transmission control module for the frame PPEI_Trans_General_Status_2_Rx was received is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the Transmission control module was received is greater than a supervision timeout value	=	TRUE	-	Ignition is ON	=	TRUE	-	1	sec	continuous	1 Trip
							Basic enable conditions met	=	see sheet enable tables	-				
	U0101	Detects when the time since the last message from the Transmission control module for the frame PPEI_Trans_General_Status_3_Rx was received is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the Transmission control module was received is greater than a supervision timeout value	=	TRUE	-	Ignition is ON	=	TRUE	-	1.25	sec	continuous	1 Trip
							Basic enable conditions met	=	see sheet enable tables	-				
	U0101	Detects when the time since the last message from the Transmission control module for the frame PPEI_Trans_General_Status_4_HS was received is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the Transmission control module was received is greater than a supervision timeout value	=	TRUE	-	Ignition is ON	=	TRUE	-	1	sec	continuous	1 Trip
							Basic enable conditions met	=	see sheet enable tables	-				
	U0101	Detects when the time since the last message from the Transmission control module for the frame PPEI_Transmission_Otpt_Rot_Stat was received is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the Transmission control module was received is greater than a supervision timeout value	=	TRUE	-	Ignition is ON	=	TRUE	-	1	sec	continuous	1 Trip
							Basic enable conditions met	=	see sheet enable tables	-				
	U0101	Detects when the time since the last message from the Transmission control module for the frame PTEI_Hybrid_Trans_Status_2 was received is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the Transmission control module was received is greater than a supervision timeout value	=	TRUE	-	Ignition is ON	=	TRUE	-	1	sec	continuous	1 Trip
							Basic enable conditions met	=	see sheet enable tables	-				
	U0101	Detects when the time since the last message from the Transmission control module for the frame PTEI_Trans_General_Status_2 was received is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the Transmission control module was received is greater than a supervision timeout value	=	TRUE	-	Ignition is ON	=	TRUE	-	1	sec	continuous	1 Trip
							Basic enable conditions met	=	see sheet enable tables	-				
	U0101	Detects when the time since the last message from the Transmission control module for the frame PTEI_Trans_Ratio_Status was received is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the Transmission control module was received is greater than a supervision timeout value	=	TRUE	-	Ignition is ON	=	TRUE	-	1	sec	continuous	1 Trip
							Basic enable conditions met	=	see sheet enable tables	-				
	U0101	Detects when the time since the last message from the Transmission control module for the frame PTEI_Transmission_Torque_Request was received is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the Transmission control module was received is greater than a supervision timeout value	=	TRUE	-	Ignition is ON	=	TRUE	-	1	sec	continuous	1 Trip
							Basic enable conditions met	=	see sheet enable tables	-				
	U0102	Detects when the time since the last message from the Transfer Case Control Module for the frame PPEI_Secondary_Axle_Status was received is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the Transfer Case Control Module was received is greater than a supervision timeout value	=	TRUE	-	Ignition is ON	=	TRUE	-	1	sec	continuous	2 Trips

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Basic enable conditions met	= see sheet enable tables -		
	U0104	Detects when the time since the last message from the Cruise Control Module for the frame Adaptive_Cruise_Disp_Stat_HS was received is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the Cruise Control Module was received is greater than a supervision timeout value	= TRUE -	Ignition is ON	= TRUE -	1 sec continuous	no MIL
					Basic enable conditions met	= see sheet enable tables -		
	U0104	Detects when the time since the last message from the Cruise Control Module for the frame PPEI_Adaptive_Cruise_Axl_Trq_Req was received is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the Cruise Control Module was received is greater than a supervision timeout value	= TRUE -	Ignition is ON	= TRUE -	1 sec continuous	no MIL
					Basic enable conditions met	= see sheet enable tables -		
	U0129	Detects when the time since the last message from the Brake system control module "A" for the frame Antilock_Brake_and_TC_Status_HS was received is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the Brake system control module "A" was received is greater than a supervision timeout value	= TRUE -	Ignition is ON	= TRUE -	1 sec continuous	2 Trips
				-	Basic enable conditions met	= see sheet enable tables -		
	U0129	Detects when the time since the last message from the Brake system control module "A" for the frame Brake_Pedal_Driver_Status_HS was received is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the Brake system control module "A" was received is greater than a supervision timeout value	= TRUE -	Ignition is ON	= TRUE -	1 sec continuous	2 Trips
					Basic enable conditions met	= see sheet enable tables -		
	U0129	Detects when the time since the last message from the Brake system control module "A" for the frame Electric_Park_Brake_Status_HS was received is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the Brake system control module "A" was received is greater than a supervision timeout value	= TRUE -	Ignition is ON	= TRUE -	1 sec continuous	2 Trips
					Basic enable conditions met	= see sheet enable tables -		
	U0129	Detects when the time since the last message from the Brake system control module "A" for the frame PPEI_Chassis_Eng_Torque_Req_1 was received is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the Brake system control module "A" was received is greater than a supervision timeout value	= TRUE -	Ignition is ON	= TRUE -	1 sec continuous	2 Trips
					Basic enable conditions met	= see sheet enable tables -		
	U0129	Detects when the time since the last message from the Brake system control module "A" for the frame PPEI_Chassis_General_Status_1 was received is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the Brake system control module "A" was received is greater than a supervision timeout value	= TRUE -	Ignition is ON	= TRUE -	1 sec continuous	2 Trips
					Basic enable conditions met	= see sheet enable tables -		
	U0129	Detects when the time since the last message from the Brake system control module "A" for the frame PPEI_Chassis_General_Status_2 was received is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the Brake system control module "A" was received is greater than a supervision timeout value	= TRUE -	Ignition is ON	= TRUE -	1 sec continuous	2 Trips
					Basic enable conditions met	= see sheet enable tables -		
	U0129	Detects when the time since the last message from the Brake system control module "A" for the frame PPEI_Driven_Whl_Rotational_Stat was received is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the Brake system control module "A" was received is greater than a supervision timeout value	= TRUE -	Ignition is ON	= TRUE -	1 sec continuous	2 Trips
					Basic enable conditions met	= see sheet enable tables -		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
	U0129	Detects when the time since the last message from the Brake system control module "A" for the frame PPEI_Driver_Command_Brake_Status was received is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the Brake system control module "A" was received is greater than a supervision timeout value	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	1 sec continuous	2 Trips
	U0129	Detects when the time since the last message from the Brake system control module "A" for the frame PPEI_Long_Lat_Sensor_Data_HS was received is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the Brake system control module "A" was received is greater than a supervision timeout value	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	1 sec continuous	2 Trips
	U0129	Detects when the time since the last message from the Brake system control module "A" for the frame PPEI_NonDrivn_Whl_Rotationl_Stat was received is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the Brake system control module "A" was received is greater than a supervision timeout value	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	1 sec continuous	2 Trips
	U0140	Detects when the time since the last message from the Body control module for the frame Body_Information_2_HS was received is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the Body control module was received is greater than a supervision timeout value	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	1 sec continuous	1 Trip
	U0140	Detects when the time since the last message from the Body control module for the frame Body_Information_4_HS was received is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the Body control module was received is greater than a supervision timeout value	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	1 sec continuous	1 Trip
	U0140	Detects when the time since the last message from the Body control module for the frame Body_Information_HS was received is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the Body control module was received is greater than a supervision timeout value	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	1 sec continuous	1 Trip
	U0140	Detects when the time since the last message from the Body control module for the frame Exterior_Lighting_HS was received is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the Body control module was received is greater than a supervision timeout value	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	2.5 sec continuous	1 Trip
	U0140	Detects when the time since the last message from the Body control module for the frame Immobilizer_Identifier_HS was received is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the Body control module was received is greater than a supervision timeout value	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	1 sec continuous	1 Trip
	U0140	Detects when the time since the last message from the Body control module for the frame Lighting_Customization_Rqst_1_HS was received is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the Body control module was received is greater than a supervision timeout value	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	1 sec continuous	1 Trip
	U0140	Detects when the time since the last message from the Body control module for the frame PPEI_Brake_Apply_Status was received is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the Body control module was received is greater than a supervision timeout value	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	1 sec continuous	1 Trip

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required			MIL Illum.
	U0140	Detects when the time since the last message from the Body control module for the frame PPEI_Climate_System_Gen_Info2 was received is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the Body control module was received is greater than a supervision timeout value	=	TRUE	-	Ignition is ON	=	TRUE	-	2.5	sec	continuous	1 Trip
							Basic enable conditions met	=	see sheet enable tables	-				
	U0140	Detects when the time since the last message from the Body control module for the frame PPEI_Cruise_Control_Sw_Status was received is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the Body control module was received is greater than a supervision timeout value	=	TRUE	-	Ignition is ON	=	TRUE	-	1	sec	continuous	1 Trip
							Basic enable conditions met	=	see sheet enable tables	-				
	U0140	Detects when the time since the last message from the Body control module for the frame PPEI_Gateway_LS_General_Info was received is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the Body control module was received is greater than a supervision timeout value	=	TRUE	-	Ignition is ON	=	TRUE	-	1	sec	continuous	1 Trip
							Basic enable conditions met	=	see sheet enable tables	-				
	U0140	Detects when the time since the last message from the Body control module for the frame PPEI_Platform_Configuration_Data was received is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the Body control module was received is greater than a supervision timeout value	=	TRUE	-	Ignition is ON	=	TRUE	-	2.5	sec	continuous	1 Trip
							Basic enable conditions met	=	see sheet enable tables	-				
	U0140	Detects when the time since the last message from the Body control module for the frame PPEI_Platform_Eng_Cntrl_Req_2 was received is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the Body control module was received is greater than a supervision timeout value	=	TRUE	-	Ignition is ON	=	TRUE	-	1.25	sec	continuous	1 Trip
							Basic enable conditions met	=	see sheet enable tables	-				
	U0140	Detects when the time since the last message from the Body control module for the frame PPEI_Platform_Eng_Cntrl_Requests was received is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the Body control module was received is greater than a supervision timeout value	=	TRUE	-	Ignition is ON	=	TRUE	-	1	sec	continuous	1 Trip
							Basic enable conditions met	=	see sheet enable tables	-				
	U0140	Detects when the time since the last message from the Body control module for the frame PPEI_Platform_General_Status was received is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the Body control module was received is greater than a supervision timeout value	=	TRUE	-	Ignition is ON	=	TRUE	-	1	sec	continuous	1 Trip
							Basic enable conditions met	=	see sheet enable tables	-				
	U0140	Detects when the time since the last message from the Body control module for the frame PPEI_Steering_Wheel_Angle was received is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the Body control module was received is greater than a supervision timeout value	=	TRUE	-	Ignition is ON	=	TRUE	-	1	sec	continuous	1 Trip
							Basic enable conditions met	=	see sheet enable tables	-				
	U0140	Detects when the time since the last message from the Body control module for the frame PPEI_VIN_Digits_10_to_17 was received is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the Body control module was received is greater than a supervision timeout value	=	TRUE	-	Ignition is ON	=	TRUE	-	2.5	sec	continuous	1 Trip
							Basic enable conditions met	=	see sheet enable tables	-				
	U0146	Detects when the time since the last message from the Gateway "A" for the frame PPEI_CGM_General_Status_2_HS was received is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the Gateway "A" was received is greater than a supervision timeout value	=	TRUE	-	Ignition is ON	=	TRUE	-	2.5	sec	continuous	2 Trips

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required			MIL Illum.
							Basic enable conditions met	=	see sheet enable tables	-				
	U0146	Detects when the time since the last message from the Gateway "A" for the frame PPEI_CGM_General_Status_HS was received is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the Gateway "A" was received is greater than a supervision timeout value	=	TRUE	-	Ignition is ON	=	TRUE	-	1	sec	continuous	2 Trips
							Basic enable conditions met	=	see sheet enable tables	-				
	U023A	Detects when the time since the last message from the Image Processing Module "A" for the frame PPEI_Collision_Prep_Req_Status was received is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the Image Processing Module "A" was received is greater than a supervision timeout value	=	TRUE	-	Ignition is ON	=	TRUE	-	1	sec	continuous	no MIL
							Basic enable conditions met	=	see sheet enable tables	-				
High Speed CAN Bus	U0402	Detects when wrong data length code received by the frame ETEI_Transmission_General_Status from Transmission Control Module	Wrong data length code received by the frame ETEI_Transmission_General_Status from Transmission Control Module	=	TRUE	-	Ignition is ON	=	TRUE	-	0.5	sec	continuous	1 Trip
							Basic enable conditions met	=	see sheet enable tables	-				
	U0402	Detects when wrong data length code received by the frame PPEI_Trans_General_Status_1_Rx from Transmission Control Module	Wrong data length code received by the frame PPEI_Trans_General_Status_1_Rx from Transmission Control Module	=	TRUE	-	Ignition is ON	=	TRUE	-	0.5	sec	continuous	1 Trip
							Basic enable conditions met	=	see sheet enable tables	-				
	U0402	Detects when wrong data length code received by the frame PPEI_Trans_General_Status_2_Rx from Transmission Control Module	Wrong data length code received by the frame PPEI_Trans_General_Status_2_Rx from Transmission Control Module	=	TRUE	-	Ignition is ON	=	TRUE	-	0.5	sec	continuous	1 Trip
							Basic enable conditions met	=	see sheet enable tables	-				
	U0402	Detects when wrong data length code received by the frame PPEI_Trans_General_Status_3_Rx from Transmission Control Module	Wrong data length code received by the frame PPEI_Trans_General_Status_3_Rx from Transmission Control Module	=	TRUE	-	Ignition is ON	=	TRUE	-	0.5	sec	continuous	1 Trip
							Basic enable conditions met	=	see sheet enable tables	-				
	U0402	Detects when wrong data length code received by the frame PPEI_Trans_General_Status_4_HS from Transmission Control Module	Wrong data length code received by the frame PPEI_Trans_General_Status_4_HS from Transmission Control Module	=	TRUE	-	Ignition is ON	=	TRUE	-	0.5	sec	continuous	1 Trip
							Basic enable conditions met	=	see sheet enable tables	-				
	U0402	Detects when wrong data length code received by the frame PPEI_Transmission_Otpt_Rot_Stat from Transmission Control Module	Wrong data length code received by the frame PPEI_Transmission_Otpt_Rot_Stat from Transmission Control Module	=	TRUE	-	Ignition is ON	=	TRUE	-	0.5	sec	continuous	1 Trip
							Basic enable conditions met	=	see sheet enable tables	-				
	U0402	Detects when wrong data length code received by the frame PTEI_Hybrid_Trans_Status_2 from Transmission Control Module	Wrong data length code received by the frame PTEI_Hybrid_Trans_Status_2 from Transmission Control Module	=	TRUE	-	Ignition is ON	=	TRUE	-	0.5	sec	continuous	1 Trip
							Basic enable conditions met	=	see sheet enable tables	-				
	U0402	Detects when wrong data length code received by the frame PTEI_Trans_General_Status_2 from Transmission Control Module	Wrong data length code received by the frame PTEI_Trans_General_Status_2 from Transmission Control Module	=	TRUE	-	Ignition is ON	=	TRUE	-	0.5	sec	continuous	1 Trip
							Basic enable conditions met	=	see sheet enable tables	-				
	U0402	Detects when wrong data length code received by the frame PTEI_Trans_Ratio_Status from Transmission Control Module	Wrong data length code received by the frame PTEI_Trans_Ratio_Status from Transmission Control Module	=	TRUE	-	Ignition is ON	=	TRUE	-	0.5	sec	continuous	1 Trip
							Basic enable conditions met	=	see sheet enable tables	-				

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
	U0402	Detects when wrong data length code received by the frame PTEI_Transmission_Torque_Request from Transmission Control Module	Wrong data length code received by the frame PTEI_Transmission_Torque_Request from Transmission Control Module	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	0.5 sec continuous	1 Trip
	U0403	Detects when wrong data length code received by the frame PPEI_Secondary_Axle_Status from Transfer Case Control Module	Wrong data length code received by the frame PPEI_Secondary_Axle_Status from Transfer Case Control Module	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	0.5 sec continuous	2 Trips
	U0405	Detects when wrong data length code received by the frame Adaptive_Cruise_Disp_Stat_HS from Cruise Control Module	Wrong data length code received by the frame Adaptive_Cruise_Disp_Stat_HS from Cruise Control Module	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	0.5 sec continuous	no MIL
	U0405	Detects when wrong data length code received by the frame PPEI_Adaptive_Cruise_Axl_Trq_Req from Cruise Control Module	Wrong data length code received by the frame PPEI_Adaptive_Cruise_Axl_Trq_Req from Cruise Control Module	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	0.5 sec continuous	no MIL
	U0418	Detects when wrong data length code received by the frame Antilock_Brake_and_TC_Status_HS from Brake System Control Module "A"	Wrong data length code received by the frame Antilock_Brake_and_TC_Status_HS from Brake System Control Module "A"	= TRUE - -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	0.5 sec continuous	2 Trips
	U0418	Detects when wrong data length code received by the frame Brake_Pedal_Driver_Status_HS from Brake System Control Module "A"	Wrong data length code received by the frame Brake_Pedal_Driver_Status_HS from Brake System Control Module "A"	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	0.5 sec continuous	2 Trips
	U0418	Detects when wrong data length code received by the frame Electric_Park_Brake_Status_HS from Brake System Control Module "A"	Wrong data length code received by the frame Electric_Park_Brake_Status_HS from Brake System Control Module "A"	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	0.5 sec continuous	2 Trips
	U0418	Detects when wrong data length code received by the frame PPEI_Chassis_Eng_Torque_Req_1 from Brake System Control Module "A"	Wrong data length code received by the frame PPEI_Chassis_Eng_Torque_Req_1 from Brake System Control Module "A"	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	0.5 sec continuous	2 Trips
	U0418	Detects when wrong data length code received by the frame PPEI_Chassis_General_Status_1 from Brake System Control Module "A"	Wrong data length code received by the frame PPEI_Chassis_General_Status_1 from Brake System Control Module "A"	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	0.5 sec continuous	2 Trips
	U0418	Detects when wrong data length code received by the frame PPEI_Chassis_General_Status_2 from Brake System Control Module "A"	Wrong data length code received by the frame PPEI_Chassis_General_Status_2 from Brake System Control Module "A"	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	0.5 sec continuous	2 Trips
	U0418	Detects when wrong data length code received by the frame PPEI_Driven_Whl_Rotational_Stat from Brake System Control Module "A"	Wrong data length code received by the frame PPEI_Driven_Whl_Rotational_Stat from Brake System Control Module "A"	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	0.5 sec continuous	2 Trips
	U0418	Detects when wrong data length code received by the frame PPEI_Driver_Command_Brake_Status from Brake System Control Module "A"	Wrong data length code received by the frame PPEI_Driver_Command_Brake_Status from Brake System Control Module "A"	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	0.5 sec continuous	2 Trips

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
	U0418	Detects when wrong data length code received by the frame PPEI_Long_Lat_Sensor_Data_HS from Brake System Control Module "A"	Wrong data length code received by the frame PPEI_Long_Lat_Sensor_Data_HS from Brake System Control Module "A"	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	0.5 sec continuous	2 Trips
	U0418	Detects when wrong data length code received by the frame PPEI_NonDrivn_Whl_Rotationl_Stat from Brake System Control Module "A"	Wrong data length code received by the frame PPEI_NonDrivn_Whl_Rotationl_Stat from Brake System Control Module "A"	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	0.5 sec continuous	2 Trips
	U0422	Detects when wrong data length code received by the frame Body_Information_2_HS from Body Control Module	Wrong data length code received by the frame Body_Information_2_HS from Body Control Module	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	0.5 sec continuous	1 Trip
	U0422	Detects when wrong data length code received by the frame Body_Information_4_HS from Body Control Module	Wrong data length code received by the frame Body_Information_4_HS from Body Control Module	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	0.5 sec continuous	1 Trip
	U0422	Detects when wrong data length code received by the frame Body_Information_HS from Body Control Module	Wrong data length code received by the frame Body_Information_HS from Body Control Module	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	0.5 sec continuous	1 Trip
	U0422	Detects when wrong data length code received by the frame Immobilizer_Identifier_HS from Body Control Module	Wrong data length code received by the frame Immobilizer_Identifier_HS from Body Control Module	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	0.5 sec continuous	1 Trip
	U0422	Detects when wrong data length code received by the frame Lighting_Customization_Rqst_1_HS from Body Control Module	Wrong data length code received by the frame Lighting_Customization_Rqst_1_HS from Body Control Module	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	0.5 sec continuous	1 Trip
	U0422	Detects when wrong data length code received by the frame PPEI_Brake_Apply_Status from Body Control Module	Wrong data length code received by the frame PPEI_Brake_Apply_Status from Body Control Module	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	0.5 sec continuous	1 Trip
	U0422	Detects when wrong data length code received by the frame PPEI_Climate_System_Gen_Info2 from Body Control Module	Wrong data length code received by the frame PPEI_Climate_System_Gen_Info2 from Body Control Module	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	0.5 sec continuous	1 Trip
	U0422	Detects when wrong data length code received by the frame PPEI_Cruise_Control_Sw_Status from Body Control Module	Wrong data length code received by the frame PPEI_Cruise_Control_Sw_Status from Body Control Module	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	0.5 sec continuous	1 Trip
	U0422	Detects when wrong data length code received by the frame PPEI_Gateway_LS_General_Info from Body Control Module	Wrong data length code received by the frame PPEI_Gateway_LS_General_Info from Body Control Module	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	0.5 sec continuous	1 Trip
	U0422	Detects when wrong data length code received by the frame PPEI_Platform_Configuration_Data from Body Control Module	Wrong data length code received by the frame PPEI_Platform_Configuration_Data from Body Control Module	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	0.5 sec continuous	1 Trip

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
	U0422	Detects when wrong data length code received by the frame PPEI_Platform_Eng_Cntrl_Req_2 from Body Control Module	Wrong data length code received by the frame PPEI_Platform_Eng_Cntrl_Req_2 from Body Control Module	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	0.5 sec continuous	1 Trip
	U0422	Detects when wrong data length code received by the frame PPEI_Platform_Eng_Cntrl_Requests from Body Control Module	Wrong data length code received by the frame PPEI_Platform_Eng_Cntrl_Requests from Body Control Module	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	0.5 sec continuous	1 Trip
	U0422	Detects when wrong data length code received by the frame PPEI_Platform_General_Status from Body Control Module	Wrong data length code received by the frame PPEI_Platform_General_Status from Body Control Module	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	0.5 sec continuous	1 Trip
	U0422	Detects when wrong data length code received by the frame PPEI_Steering_Wheel_Angle from Body Control Module	Wrong data length code received by the frame PPEI_Steering_Wheel_Angle from Body Control Module	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	0.5 sec continuous	1 Trip
	U0422	Detects when wrong data length code received by the frame PPEI_VIN_Digits_10_to_17 from Body Control Module	Wrong data length code received by the frame PPEI_VIN_Digits_10_to_17 from Body Control Module	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	0.5 sec continuous	1 Trip
	U0447	Detects when wrong data length code received by the frame PPEI_CGM_General_Status_2_HS from Gateway "A"	Wrong data length code received by the frame PPEI_CGM_General_Status_2_HS from Gateway "A"	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	0.5 sec continuous	2 Trips
	U0447	Detects when wrong data length code received by the frame PPEI_CGM_General_Status_HS from Gateway "A"	Wrong data length code received by the frame PPEI_CGM_General_Status_HS from Gateway "A"	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	0.5 sec continuous	2 Trips
	U053B	Detects when wrong data length code received by the frame PPEI_Collision_Prep_Req_Status from Image Processing Module "A"	Wrong data length code received by the frame PPEI_Collision_Prep_Req_Status from Image Processing Module "A"	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	0.5 sec continuous	no MIL
Powertrain Expansion CAN Bus	U0074	Diagnosis of Bus off error for Powertrain Expansion CAN controller	Bus off error is detected at Powertrain Expansion CAN controller	= TRUE -	Ignition is ON No pending or confirmed FIDs Basic enable conditions met	= TRUE - = see sheet inhibit tables - = see sheet enable tables -	2 sec continuous	1 Trips
Powertrain Expansion CAN Bus	U18A7	Detects when the time since the last message from the DC to DC Converter Control Module "A" for the frame PPEI_DC_Cnv_Int_Health_Stat_PE was received is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the DC to DC Converter Control Module "A" was received is greater than a supervision timeout value	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	1 sec continuous	2 Trips
	U18A7	Detects when the time since the last message from the DC to DC Converter Control Module "A" for the frame PPEI_DC_Conv_General_Status_PE was received is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the DC to DC Converter Control Module "A" was received is greater than a supervision timeout value	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	1 sec continuous	2 Trips

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Powertrain Expansion CAN Bus	U18D3	Detects when the time since the last message from the Transmission Range Selector Control Module on Powertrain Expansion CAN Bus for the frame SIB_Input_Sensor_State_Scndry_PE was received is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the Transmission Range Selector Control Module on Powertrain Expansion CAN Bus was received is greater than a supervision timeout value	= TRUE - -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	1 sec continuous	2 Trips
	U18D3	Detects when the time since the last message from the Transmission Range Selector Control Module on Powertrain Expansion CAN Bus for the frame SIB_Linear_Sensor_Status_Sec_PE was received is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the Transmission Range Selector Control Module on Powertrain Expansion CAN Bus was received is greater than a supervision timeout value	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	1 sec continuous	2 Trips
Powertrain Expansion CAN Bus	U0599	Detects when wrong alive rolling counter received by the frame PPEI_DC_Cnv_Int_Health_Stat_PE from DC to DC Converter Control Module "A"	Wrong alive rolling counter received by the frame PPEI_DC_Cnv_Int_Health_Stat_PE from DC to DC Converter Control Module "A"	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	0.5 sec continuous	2 Trips
	U0599	Detects when wrong data length code received by the frame PPEI_DC_Cnv_Int_Health_Stat_PE from DC to DC Converter Control Module "A"	Wrong data length code received by the frame PPEI_DC_Cnv_Int_Health_Stat_PE from DC to DC Converter Control Module "A"	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	0.5 sec continuous	2 Trips
	U0599	Detects when wrong data length code received by the frame PPEI_DC_Conv_General_Status_PE from DC to DC Converter Control Module "A"	Wrong data length code received by the frame PPEI_DC_Conv_General_Status_PE from DC to DC Converter Control Module "A"	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	0.5 sec continuous	2 Trips
	U0404	Detects when wrong data length code received by the frame SIB_General_Info_2_S1 from Transmission Range Selector Control Module	Wrong data length code received by the frame SIB_General_Info_2_S1 from Transmission Range Selector Control Module	= TRUE - -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	0.5 sec continuous	2 Trips
	U0404	Detects when wrong data length code received by the frame SIB_General_Info_S1 from Transmission Range Selector Control Module	Wrong data length code received by the frame SIB_General_Info_S1 from Transmission Range Selector Control Module	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	0.5 sec continuous	2 Trips
	U0404	Detects when wrong alive rolling counter received by the frame SIB_Input_Sensor_State_Primry_S1 from Transmission Range Selector Control Module	Wrong alive rolling counter received by the frame SIB_Input_Sensor_State_Primry_S1 from Transmission Range Selector Control Module	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	0.5 sec continuous	2 Trips
	U0404	Detects when wrong checksum received by the frame SIB_Input_Sensor_State_Primry_S1 from Transmission Range Selector Control Module	Wrong checksum received by the frame SIB_Input_Sensor_State_Primry_S1 from Transmission Range Selector Control Module	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	0.5 sec continuous	2 Trips
	U0404	Detects when wrong data length code received by the frame SIB_Input_Sensor_State_Primry_S1 from Transmission Range Selector Control Module	Wrong data length code received by the frame SIB_Input_Sensor_State_Primry_S1 from Transmission Range Selector Control Module	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	0.5 sec continuous	2 Trips
	U0404	Detects when wrong alive rolling counter received by the frame SIB_Input_Sensor_State_Scndry_PE from Transmission Range Selector Control Module	Wrong alive rolling counter received by the frame SIB_Input_Sensor_State_Scndry_PE from Transmission Range Selector Control Module	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	0.5 sec continuous	2 Trips

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
	U0404	Detects when wrong checksum received by the frame SIB_Input_Sensor_State_Scndry_PE fromTransmission Range Selector Control Module	Wrong checksum received by the frame SIB_Input_Sensor_State_Scndry_PE from Transmission Range Selector Control Module	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	0.5 sec continuous	2 Trips
	U0404	Detects when wrong data length code received by the frame SIB_Input_Sensor_State_Scndry_PE fromTransmission Range Selector Control Module	Wrong data length code received by the frame SIB_Input_Sensor_State_Scndry_PE from Transmission Range Selector Control Module	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	0.5 sec continuous	2 Trips
	U0404	Detects when wrong alive rolling counter received by the frame SIB_Linear_Sensor_Status_Prim_S1 from Transmission Range Selector Control Module	Wrong alive rolling counter received by the frame SIB_Linear_Sensor_Status_Prim_S1 from Transmission Range Selector Control Module	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	0.5 sec continuous	2 Trips
	U0404	Detects when wrong checksum received by the frame SIB_Linear_Sensor_Status_Prim_S1 from Transmission Range Selector Control Module	Wrong checksum received by the frame SIB_Linear_Sensor_Status_Prim_S1 from Transmission Range Selector Control Module	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	0.5 sec continuous	2 Trips
	U0404	Detects when wrong data length code received by the frame SIB_Linear_Sensor_Status_Prim_S1 from Transmission Range Selector Control Module	Wrong data length code received by the frame SIB_Linear_Sensor_Status_Prim_S1 from Transmission Range Selector Control Module	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	0.5 sec continuous	2 Trips
	U0404	Detects when wrong alive rolling counter received by the frame SIB_Linear_Sensor_Status_Sec_PE from Transmission Range Selector Control Module	Wrong alive rolling counter received by the frame SIB_Linear_Sensor_Status_Sec_PE from Transmission Range Selector Control Module	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	0.5 sec continuous	2 Trips
	U0404	Detects when wrong checksum received by the frame SIB_Linear_Sensor_Status_Sec_PE from Transmission Range Selector Control Module	Wrong checksum received by the frame SIB_Linear_Sensor_Status_Sec_PE from Transmission Range Selector Control Module	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	0.5 sec continuous	2 Trips
	U0404	Detects when wrong data length code received by the frame SIB_Linear_Sensor_Status_Sec_PE from Transmission Range Selector Control Module	Wrong data length code received by the frame SIB_Linear_Sensor_Status_Sec_PE from Transmission Range Selector Control Module	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	0.5 sec continuous	2 Trips
Powertrain Sensor CAN Bus	U0076	Diagnosis of Bus off error forPowertrain Sensor CAN controller	Bus off error is detected at Powertrain Sensor CAN controller	= TRUE -	Ignition is ON No pending or confirmed FIDs Basic enable conditions met	= TRUE - = see sheet inhibit tables - = see sheet enable tables -	2 sec continuous	2 Trips
Powertrain Sensor CAN Bus	U18A2	Detects when the time since the last message from the Fuel Pump Driver Control Module for the frame FTZM_Information_1_S1 was received is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the Fuel Pump Driver Control Module was received is greater than a supervision timeout value	= TRUE - -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	1 sec continuous	2 Trips
	U18A2	Detects when the time since the last message from the Fuel Pump Driver Control Module for the frame FTZM_Information_11_S1 was received is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the Fuel Pump Driver Control Module was received is greater than a supervision timeout value	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	1 sec continuous	2 Trips

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
	U18A2	Detects when the time since the last message from the Fuel Pump Driver Control Module for the frame FTZM_Information_2_S1 was received is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the Fuel Pump Driver Control Module was received is greater than a supervision timeout value	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	1 sec continuous	2 Trips
	U18A2	Detects when the time since the last message from the Fuel Pump Driver Control Module for the frame FTZM_Information_3_S1 was received is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the Fuel Pump Driver Control Module was received is greater than a supervision timeout value	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	1 sec continuous	2 Trips
	U18A2	Detects when the time since the last message from the Fuel Pump Driver Control Module for the frame FTZM_Information_4_S1 was received is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the Fuel Pump Driver Control Module was received is greater than a supervision timeout value	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	1 sec continuous	2 Trips
	U18A2	Detects when the time since the last message from the Fuel Pump Driver Control Module for the frame FTZM_Information_5_S1 was received is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the Fuel Pump Driver Control Module was received is greater than a supervision timeout value	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	1 sec continuous	2 Trips
	U18A2	Detects when the time since the last message from the Fuel Pump Driver Control Module for the frame FTZM_Information_7_S1 was received is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the Fuel Pump Driver Control Module was received is greater than a supervision timeout value	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	1 sec continuous	2 Trips
	U18A2	Detects when the time since the last message from the Fuel Pump Driver Control Module for the frame FTZM_Information_8_S1 was received is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the Fuel Pump Driver Control Module was received is greater than a supervision timeout value	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	1 sec continuous	2 Trips
	U18A2	Detects when the time since the last message from the Fuel Pump Driver Control Module for the frame FTZM_Information_9_S1 was received is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the Fuel Pump Driver Control Module was received is greater than a supervision timeout value	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	1 sec continuous	2 Trips
	U18D2	Detects when the time since the last message from the Transmission Range Selector Control Module on Powertrain Sensor CAN Bus for the frame SIB_General_Info_2_S1 was received is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the Transmission Range Selector Control Module on Powertrain Sensor CAN Bus was received is greater than a supervision timeout value	= TRUE - -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	2.5 sec continuous	2 Trips
	U18D2	Detects when the time since the last message from the Transmission Range Selector Control Module on Powertrain Sensor CAN Bus for the frame SIB_General_Info_S1 was received is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the Transmission Range Selector Control Module on Powertrain Sensor CAN Bus was received is greater than a supervision timeout value	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	1 sec continuous	2 Trips
	U18D2	Detects when the time since the last message from the Transmission Range Selector Control Module on Powertrain Sensor CAN Bus for the frame SIB_Input_Sensor_State_Primry_S1 was received is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the Transmission Range Selector Control Module on Powertrain Sensor CAN Bus was received is greater than a supervision timeout value	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	1 sec continuous	2 Trips

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
	U18D2	Detects when the time since the last message from the Transmission Range Selector Control Module on Powertrain Sensor CAN Bus for the frame SIB_Linear_Sensor_Status_Prim_S1 was received is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the Transmission Range Selector Control Module on Powertrain Sensor CAN Bus was received is greater than a supervision timeout value	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	1 sec continuous	2 Trips
Powertrain Sensor CAN Bus	U131D	Detects when wrong alive rolling counter received by the frame FTZM_Information_1_S1 (Sensor Reference Voltage Status) from Fuel Pump Driver Control Module	Wrong alive rolling counter reveiced by the frame FTZM_Information_1_S1 from Fuel Pump Driver Control Module	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	0.5 sec continuous	2 Trips
	U131D	Detects when wrong checksum received by the frame FTZM_Information_1_S1 (Sensor Reference Voltage Status) from Fuel Pump Driver Control Module	Wrong checksum received by the frame FTZM_Information_1_S1 from Fuel Pump Driver Control Module	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	0.5 sec continuous	2 Trips
	U131D	Detects when wrong data length code received by the frame FTZM_Information_1_S1 (Sensor Reference Voltage Status) from Fuel Pump Driver Control Module	Wrong data length code received by the frame FTZM_Information_1_S1 from Fuel Pump Driver Control Module	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	0.5 sec continuous	2 Trips
	U131D	Detects when wrong alive rolling counter received by the frame FTZM_Information_11_S1 (Evaporative Emission System Signals) from Fuel Pump Driver Control Module	Wrong alive rolling counter reveiced by the frame FTZM_Information_11_S1 from Fuel Pump Driver Control Module	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	0.5 sec continuous	2 Trips
	U131D	Detects when wrong checksum received by the frame FTZM_Information_11_S1 (Evaporative Emission System Signals) from Fuel Pump Driver Control Module	Wrong checksum received by the frame FTZM_Information_11_S1 from Fuel Pump Driver Control Module	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	0.5 sec continuous	2 Trips
	U131D	Detects when wrong data length code received by the frame FTZM_Information_11_S1 (Evaporative Emission System Signals) from Fuel Pump Driver Control Module	Wrong data length code received by the frame FTZM_Information_11_S1 from Fuel Pump Driver Control Module	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	0.5 sec continuous	2 Trips
	U131D	Detects when wrong alive rolling counter received by the frame FTZM_Information_2_S1 (Battery Voltage Signal) from Fuel Pump Driver Control Module	Wrong alive rolling counter reveiced by the frame FTZM_Information_2_S1 from Fuel Pump Driver Control Module	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	0.5 sec continuous	2 Trips
	U131D	Detects when wrong checksum received by the frame FTZM_Information_2_S1 (Battery Voltage Signal) from Fuel Pump Driver Control Module	Wrong checksum received by the frame FTZM_Information_2_S1 from Fuel Pump Driver Control Module	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	0.5 sec continuous	2 Trips
	U131D	Detects when wrong data length code received by the frame FTZM_Information_2_S1 (Battery Voltage Signal) from Fuel Pump Driver Control Module	Wrong data length code received by the frame FTZM_Information_2_S1 from Fuel Pump Driver Control Module	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	0.5 sec continuous	2 Trips
	U131D	Detects when wrong alive rolling counter received by the frame FTZM_Information_3_S1 (Fuel Level Sensor 1 Signal) from Fuel Pump Driver Control Module	Wrong alive rolling counter reveiced by the frame FTZM_Information_3_S1 from Fuel Pump Driver Control Module	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	0.5 sec continuous	2 Trips
	U131D	Detects when wrong checksum received by the frame FTZM_Information_3_S1 (Fuel Level Sensor 1 Signal) from Fuel Pump Driver Control Module	Wrong checksum received by the frame FTZM_Information_3_S1 from Fuel Pump Driver Control Module	= TRUE -	Ignition is ON	= TRUE -	0.5 sec continuous	2 Trips

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Basic enable conditions met	= see sheet enable tables -		
	U131D	Detects when wrong data length code received by the frame FTZM_Information_3_S1 (Fuel Level Sensor 1 Signal) from Fuel Pump Driver Control Module	Wrong data length code received by the frame FTZM_Information_3_S1 from Fuel Pump Driver Control Module	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	0.5 sec continuous	2 Trips
	U131D	Detects when wrong alive rolling counter received by the frame FTZM_Information_4_S1 (Fuel Level Sensor 2 Signal) from Fuel Pump Driver Control Module	Wrong alive rolling counter reveiced by the frame FTZM_Information_4_S1 from Fuel Pump Driver Control Module	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	0.5 sec continuous	2 Trips
	U131D	Detects when wrong checksum received by the frame FTZM_Information_4_S1 (Fuel Level Sensor 2 Signal) from Fuel Pump Driver Control Module	Wrong checksum received by the frame FTZM_Information_4_S1 from Fuel Pump Driver Control Module	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	0.5 sec continuous	2 Trips
	U131D	Detects when wrong data length code received by the frame FTZM_Information_4_S1 (Fuel Level Sensor 2 Signal) from Fuel Pump Driver Control Module	Wrong data length code received by the frame FTZM_Information_4_S1 from Fuel Pump Driver Control Module	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	0.5 sec continuous	2 Trips
	U131D	Detects when wrong alive rolling counter received by the frame FTZM_Information_5_S1 (Ignition Run/Start Voltage Signal) from Fuel Pump Driver Control Module	Wrong alive rolling counter reveiced by the frame FTZM_Information_5_S1 from Fuel Pump Driver Control Module	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	0.5 sec continuous	2 Trips
	U131D	Detects when wrong checksum received by the frame FTZM_Information_5_S1 (Ignition Run/Start Voltage Signal) from Fuel Pump Driver Control Module	Wrong checksum received by the frame FTZM_Information_5_S1 from Fuel Pump Driver Control Module	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	0.5 sec continuous	2 Trips
	U131D	Detects when wrong data length code received by the frame FTZM_Information_5_S1 (Ignition Run/Start Voltage Signal) from Fuel Pump Driver Control Module	Wrong data length code received by the frame FTZM_Information_5_S1 from Fuel Pump Driver Control Module	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	0.5 sec continuous	2 Trips
	U131D	Detects when wrong alive rolling counter received by the frame FTZM_Information_7_S1 (Fuel Pump Driver Control Module Temperature High Signal) from Fuel Pump Driver Control Module	Wrong alive rolling counter reveiced by the frame FTZM_Information_7_S1 from Fuel Pump Driver Control Module	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	0.5 sec continuous	2 Trips
	U131D	Detects when wrong checksum received by the frame FTZM_Information_7_S1 (Fuel Pump Driver Control Module Temperature High Signal) from Fuel Pump Driver Control Module	Wrong checksum received by the frame FTZM_Information_7_S1 from Fuel Pump Driver Control Module	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	0.5 sec continuous	2 Trips
	U131D	Detects when wrong data length code received by the frame FTZM_Information_7_S1 (Fuel Pump Driver Control Module Temperature High Signal) from Fuel Pump Driver Control Module	Wrong data length code received by the frame FTZM_Information_7_S1 from Fuel Pump Driver Control Module	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	0.5 sec continuous	2 Trips
	U131D	Detects when wrong alive rolling counter received by the frame FTZM_Information_8_S1 (Fuel Pump Control Status Signal) from Fuel Pump Driver Control Module	Wrong alive rolling counter reveiced by the frame FTZM_Information_8_S1 from Fuel Pump Driver Control Module	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	0.5 sec continuous	2 Trips

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
	U131D	Detects when wrong checksum received by the frame FTZM_Information_8_S1 (Fuel Pump Control Status Signal) from Fuel Pump Driver Control Module	Wrong checksum received by the frame FTZM_Information_8_S1 from Fuel Pump Driver Control Module	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	0.5 sec continuous	2 Trips
	U131D	Detects when wrong data length code received by the frame FTZM_Information_8_S1 (Fuel Pump Control Status Signal) from Fuel Pump Driver Control Module	Wrong data length code received by the frame FTZM_Information_8_S1 from Fuel Pump Driver Control Module	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	0.5 sec continuous	2 Trips
	U131D	Detects when wrong alive rolling counter received by the frame FTZM_Information_9_S1 (Fuel Pump Driver Control Module Reset Count) from Fuel Pump Driver Control Module	Wrong alive rolling counter reveiced by the frame FTZM_Information_9_S1 from Fuel Pump Driver Control Module	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	0.5 sec continuous	2 Trips
	U131D	Detects when wrong checksum received by the frame FTZM_Information_9_S1 (Fuel Pump Driver Control Module Reset Count) from Fuel Pump Driver Control Module	Wrong checksum received by the frame FTZM_Information_9_S1 from Fuel Pump Driver Control Module	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	0.5 sec continuous	2 Trips
	U131D	Detects when wrong data length code received by the frame FTZM_Information_9_S1 (Fuel Pump Driver Control Module Reset Count) from Fuel Pump Driver Control Module	Wrong data length code received by the frame FTZM_Information_9_S1 from Fuel Pump Driver Control Module	= TRUE -	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	0.5 sec continuous	2 Trips
LIN Bus 1	U1345	Detects Bus off error at LIN channel 1.	LIN channel 1 indicates bus off error	= TRUE -	Ignition is on No pending or confirmed DTCs Basic enable conditions met	= TRUE - = see sheet inhibit tables - = see sheet enable tables -	10 counts continuous	1 Trip
	U135E	Detects when the time since the last message from the 'Transmission Control Module on Engine Control Module LIN Bus 1 Module' for frame "TCM_Rsp"(0x01) was received via LIN 1 Channel is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the 'Transmission Control Module on Engine Control Module LIN Bus 1 Module' for frame "TCM_Rsp"(0x01) was received via LIN 1 Channel	> 0.05 sec	Ignition is ON Basic enable conditions met	= TRUE - = see sheet enable tables -	3 counts Continuous	2 Trips
	U250D	Validity of the Transmission Control Data Received Via LIN	Mismatch between the transmitted range command received from the Gearshift Co-ordinator module and Echo Range Command from Transmission Control Module through LIN	= TRUE -	Current Range Command value is equal to Previous Range Command Value System is not in PARK mode and system power is used by accessories or system wakeup Ignition ON (Current range of gear lever is in PARK position Initialization of gear selection in progress is active) OR (Current range command is in parking range Current range command is in power mode OFF range) Engine Transmission Range Selection brake command is in deny driver override command Engine Transmission Range Selection brake command is in allow driver override command Manufacturer Enable Counter used to automatically arm Seed & Key LIN diagnostics enabled	= TRUE - = TRUE - = TRUE - = FALSE - = FALSE - = FALSE - = FALSE - = FALSE - = FALSE - = 0 = TRUE -	0.5 sec Continuous	2 Trips

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required			MIL Illum.
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enabling conditions are met	=	see sheet enable tables	-				
LIN Bus 2	U1346	Detects Bus off error at LIN channel 2.	LIN channel 2 indicates bus off error	=	TRUE	-	Ignition is on	=	TRUE	-	10	counts	continuous	1 Trip
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enable conditions met	=	see sheet enable tables	-				
LIN Bus 4	U1348	Detects Bus off error at LIN channel 4.	LIN channel 4 indicates bus off error	=	TRUE	-	Ignition is on	=	TRUE	-	10	counts	continuous	1 Trip
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enable conditions met	=	see sheet enable tables	-				
	U062F	Detects when the time since the last message from the "Charge Air Cooler Water Pump" for frame "CWP_Rsp"(0x25) was received via LIN 4 Channel is greater than the Supervision timeout value for a calibrated period of time	Time since last message from the 'Charge Air Cooler Water Pump' for frame "CWP_Rsp"(0x25) was received via LIN 4 Channel	>	0.25	sec	Ignition is ON	=	TRUE	-	3	counts	Continuous	2 Trips
							Basic enable conditions met	=	see sheet enable tables	-				
	U1378	**Path 1:** Detects when the wrong length code for frame CWP_Rsp(0x25) in LIN4 channel was detected	Wrong length code for frame CWP_Rsp(0x25) in LIN4 channel was detected	=	TRUE	-	Ignition is ON	=	TRUE	-	10	counts	Continuous	2 Trips
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enable conditions met	=	see sheet enable tables	-				
		Path 2: Detects when wrong alive rolling counter received by the frame CWP_Rsp(0x25) in LIN4 channel from the "Charge Air Cooler Water Pump"	Wrong alive rolling counter received by the frame CWP_Rsp(0x25) in LIN4 channel from the "Charge Air Cooler Water Pump"	=	TRUE	-	Ignition is ON	=	TRUE	-	10	counts	Continuous	2 Trips
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enable conditions met	=	see sheet enable tables	-				
LIN Bus 5	U1349	Detects Bus off error at LIN channel 5.	LIN channel 5 indicates bus off error	=	TRUE	-	Ignition is on	=	TRUE	-	10	counts	continuous	1 Trip
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enable conditions met	=	see sheet enable tables	-				
EVAP System Ventilation Valve	P0446	**Path 1** : Monitoring of Canister Ventilation Valve control - offset diagnosis	(				Error message for internal cycle Canister close valve error	=	TRUE	-			continuous	2 Trips
			Tank pressure filtered for offset-diagnosis tank pressure sensor	>=	25	-	No pending or confirmed DTCs	=	see sheet inhibit tables	-				
			Difference between tank pressure filtered for offset and ccv error threshold because cpv can not open because of vacuum	<	0	kPa	Basic enable conditions met	=	see sheet enable tables	-				
			)											
			for time	>=	2	sec								
		Path 2 : Monitoring of Canister Ventilation Valve control - based on environmental pressure	Tank pressure	>=	-900.024	Pa	Diagnosis of canister purge system is active	=	TRUE	-				
							Mass flow through purge control valve for tank leakage diagnosis	<=	0.008355556	g/sec				
							time for miscellaneous measurements	>=	5	sec				
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enable conditions met	=	see sheet enable tables	-				
EVAP System Ventilation Valve	P0449	Diagnosis of EVAP System Vent Valve Control Circuit- Open Load fault	EVAP powerstage reports open load fault through CAN communication message	=	TRUE	-	Ignition is ON	=	TRUE	-	2	sec	continuous	2 Trips
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required			MIL Illum.
							Basic enable conditions met	=	see sheet enable tables	-				
	P0498	Diagnosis of EVAP System Vent Valve Control Circuit- Circuit Low	EVAP powerstage reports short circuit to groud fault through CAN communication message	=	TRUE	-	Ignition is ON	=	TRUE	-	2	sec	continuous	2 Trips
							No pending or confirmed FIDs	=	see sheet inhibit tables	-				
							Basic enable conditions met	=	see sheet enable tables	-				
	P0499	Diagnosis of EVAP System Vent Valve Control Circuit- Circuit High	EVAP powerstage reports short circuit to battery fault through CAN communication message	=	TRUE	-	Ignition is ON	=	TRUE	-	2	sec	continuous	2 Trips
							No pending or confirmed FIDs	=	see sheet inhibit tables	-				
							Basic enable conditions met	=	see sheet enable tables	-				
Low Temperature Loop Coolant Pump (LIN4)	P3196	Detection of the pump speed performance commanded versus actual (return) speed	Filtered Speed of Charge Air Cooler Pump	>	200	rpm	No pending or confirmed DTCs	=	see sheet inhibit tables	-	5	sec	Continuous	2 Trips
			where |A - B|				Basic enable conditions met	=	see sheet enable tables	-				
			A (Filtered requested speed of charge air cooler pump)	=	Graph WtrPmp_CACPmpSpd PT1 I	rpm								
			B (Filtered actual speed of charge air cooler pump)	=	Graph WtrPmp_CACPmpSpd ActPT1 I	rpm								
	P26FA	Detection of the recievd pump speed exceeding the maximum threshold	charge air cooler pump measured speed	>	7500	rpm	No pending or confirmed DTCs	=	see sheet inhibit tables	-	5	sec	Continuous	2 Trips
							Basic enable conditions met	=	see sheet enable tables	-				
	P2BA0	Detection of the receieved pump speed falling below the minimum threshold	charge air cooler pump measured speed	<	0	rpm	No pending or confirmed DTCs		see sheet inhibit tables	-	5	sec	Continuous	2 Trips
							Basic enable conditions met		see sheet inhibit tables	-				
	P2C48	Detection of the pump current to be within the calculated threshold for a given pump speed	Pump current where Threshold = A * B	≥	Threshold	A	No pending or confirmed DTCs	=	see sheet inhibit tables	-	5	sec	Continuous	2 Trips
			A (charge air cooler pump current high limit for a given pump speed)	=	20	A	Basic enable conditions met	=	see sheet inhibit tables	-				
			B (charge air cooler pump factor high limit for a given coolant temperature)	=	1	deg C								
			OR											
			Pump current where Threshold = C * D	<	Threshold	A								
			C (charge air cooler pump current low limit for a given pump speed)	=	0	A								
			D (charge air cooler pump factor low limit for a given coolant temperature)	=	1	deg C								
	P3198	Detection of the current of the pump exceeding the maximum threshold	charge air cooler pump motor measured current	>	18	A	No pending or confirmed DTCs	=	see sheet inhibit tables	-	5	sec	Continuous	2 Trips
							Basic enable conditions met	=	see sheet inhibit tables	-				
	P3199	Detection of the current of the pump falling below the minimum threshold	charge air cooler pump motor measured current	<	0	A	No pending or confirmed DTCs	=	see sheet inhibit tables	-	5	sec	Continuous	2 Trips
							Basic enable conditions met	=	see sheet inhibit tables	-				
MIL Bulb	P263B	Diagnoses the MIL low side driver circuit for circuit high fault	Voltage high during driver on state (indicates short-to-power)	=	Short to power: ≤ 0.5 Ω impedance between signal and controller power	-	ECU is in pre drive state	=	FALSE	-	1	sec	Continuous	2 Trips
							ECU in post drive state	=	FALSE	-				
							Basic enable conditions met	=	see sheet enable tables	-				

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required			MIL Illum.
	P263A	Diagnoses the MIL low side driver circuit for circuit low fault	Voltage low during driver on state (indicates short-to-ground)	=	Short to ground: ≤ 0.5 Ω impedance between signal and controller ground	-	ECU is in pre drive state	=	FALSE	-	1	sec	Continuous	2 Trips
							ECU in post drive state	=	FALSE	-				
							Basic enable conditions met	=	see sheet enable tables	-				
	P0650	Diagnoses the MIL low side driver circuit for open circuit fault	Voltage high during driver off state (indicates open circuit)	=	Open Circuit : ≥ 200 KΩ impedance between ECU pin and load	-	ECU is in pre drive state	=	FALSE	-	1	sec	Continuous	1 Trip
							ECU in post drive state	=	FALSE	-				
							Basic enable conditions met	=	see sheet enable tables	-				
Sensor Supply Relay (FTZM voltage supply)	P16D9	Circuit Check - Short circuit to Battery	Power stage feedback voltage	>	4.5	V	Ignition is ON	=	TRUE	-	20	event	Continuous	2 Trips
							(							
							Battery Voltage	>=	10.9	V				
							Battery Voltage	<=	655.34	V				
							Power stage off−diagnosis enable timer	<	2	sec				
							)							
							Power stage output signal	=	FALSE	-				
							Timeout after which the state machine	<=	1	sec				
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enable conditions met	=	see sheet enable tables	-				
	P16D8	Circuit Check - Short circuit to Ground	Power stage feedback voltage (See Look-Up-Table #P16D8-1)	<	1.95 to 4.5	V	Ignition is ON	=	TRUE	-	5	event	Continuous	2 Trips
							(							
							Battery Voltage	>=	10.9	V				
							Battery Voltage	<=	655.34	V				
							Power stage off−diagnosis enable timer	<	2	sec				
							)							
							Power stage output signal	=	TRUE	-				
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enable conditions met	=	see sheet enable tables	-				
	P16D7	Circuit Check - Open Load	Power stage feedback voltage	>=	1.5	V	Ignition is ON	=	TRUE	-	20	event	Continuous	2 Trips
			Power stage feedback voltage	<=	2	V	(							
							Battery Voltage	>=	10.9	V				
							Battery Voltage	<=	655.34	V				
							Power stage off−diagnosis enable timer	<	2	sec				
							)							
							Power stage output signal	=	FALSE	-				
							Timeout after which the state machine leaves the off−diagnosis state	<=	1	sec				
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enable conditions met	=	see sheet enable tables	-				
Sensor Supply Relay (FTZM voltage supply)	P0629	Digital output stage - Circuit High	Pre Supply Pump output voltage	>	4.7	V	(				0.2	sec	continuous	2 Trips
							ECU is in POSTDRIVE state	=	TRUE	-				
							OR							
							Airbag is activated	=	TRUE	-				
							)							
							OR							
							(							
							Condition of the engine in stop phase	=	TRUE	-				
							Condition to stop the activation of fuel pump during startstop	=	FALSE	-				
							Validity bit of fuel low pressure value	=	TRUE	-				
							Fuel pressure actual value	>	500	kPa				
							)							
							(							
							Fuel pressure actual value	>	600	kPa				
							OR							
							Fuel System Priming Timer is active	=	TRUE	-				

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					)			
					Battery voltage	> 9 V		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
	P0628	Digital output stage - Circuit Low	Pre Supply Pump output voltage (See Look-Up-Table #P0628-1)	< 1.95 to 4.5 V			0.05 sec continuous	2 Trips
					(			
					Engine is in running state	= TRUE -		
					OR			
					Validity bit of fuel low pressure value	= TRUE -		
					Fuel pressure actual value	< 100 kPa		
					)			
					Fuel pressure actual value	< 100 kPa		
					Fuel System Priming Timer is not active	= FALSE -		
					Battery voltage	> 9 V		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
	P0627	Digital output stage - Open	Pre Supply Pump output voltage	<= 2.25 V	(		1 sec continuous	2 Trips
			Pre Supply Pump output voltage	>= 1.25 V	ECU is in POSTDRIVE state	= TRUE -		
					OR			
					Airbag is activated	= TRUE -		
					)			
					OR			
					(			
					Condition of the engine in stop phase	= TRUE -		
					Condition to stop the activation of fuel pump during startstop	= FALSE -		
					Validity bit of fuel low pressure value	= TRUE -		
					Fuel pressure actual value	> 500 kPa		
					)			
					OR	=		
					(			
					Fuel pressure actual value	> 600 kPa		
					OR			
					Fuel System Priming Timer is active	= TRUE -		
					)			
					Battery voltage	> 9 V		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
		Digital output stage - Over Temperature	Pre Supply Pump output voltage	<= 2.25 V	(		1 sec continuous	2 Trips
			Pre Supply Pump output voltage	>= 1.25 V	ECU is in POSTDRIVE state	= TRUE -		
					OR			
					Airbag is activated	= TRUE -		
					)			
					OR			
					(			
					Condition of the engine in stop phase	= TRUE -		
					Condition to stop the activation of fuel pump during startstop	= FALSE -		
					Validity bit of fuel low pressure value	= TRUE -		
					Fuel pressure actual value	> 500 kPa		
					)			
					OR			
					(			
					Fuel pressure actual value	> 600 kPa		
					OR			
					Fuel System Priming Timer is active	= TRUE -		
					)			
					Battery voltage	> 9 V		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
Cylinder 2 Deactivation Solenoid	P3499	Detects "pumping air" error for cylinder 2 during half engine mode for a calibrated period fo time	(		Synchronisation half engine mode and air charge determination of first activated HEM cylinder	= TRUE -	Continuous	2 Trips

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
			"Pumping Air" Error is detected	=	TRUE	-	Diagnose for undesired camshaft switch event active	=	TRUE	-		
			)				(					
			for counts	=	16	counts	Valve lift diagnosis enabled.	=	TRUE	-		
							(					
							(					
							Engine speed	<=	2900	rpm		
							and					
							Engine speed	>=	750	rpm		
							)					
							(					
							Ratio of Intake manifold pressure rawvalue to the Pressure upstream throttle valve raw	<=	0.899994	_		
							Ratio of Intake manifold pressure rawvalue to the Pressure upstream throttle valve raw	>=	0.200012	_		
							)					
							(					
							condition: first pressure upstream throttle	=	TRUE	-		
							)					
							(					
							validity of the pressure value (sensor) of the	=	TRUE	-		
							)					
							(					
							Condition massflow over throttle blade based on throttle angle valid, Bank1	=	TRUE	-		
							)					
							(					
							time counter at first end of start in cycle (16 bit)	>	3	sec		
							)					
							(					
							(					
							Set intake manifold pressure; Bank 1 lesser than Positive load step threshold for set pressure	<=	40	kPa		
							OR					
							diiference of Set intake manifold pressure; Bank 1 and pressure value (best of) of the intake manifold - bank 1 is lesser than caliberated threshld	<=	20	kPa		
							)					
							(					
							Set intake manifold pressure; Bank 1 is greater than Negative load step threshold for differential pressure	>=	-15	kPa		
							OR					
							diiference of Set intake manifold pressure; Bank 1 and pressure value (best of) of the intake manifold - bank 1 is greater than caliberated threshld	>=	150	kPa		
							)					
							)					
							(					
							Condition instationary state during half engine mode switching	=	FALSE	-		
							for time (see Look-Up-Table #P3499-2)	>=	0.6 to 0.85	sec		
							)					
							(					
							Scavenging rate based on scavenged air and drapped air in the cylinder	<=	1	_		
							)					
							(					
							Absolute value of the difference between the currrent value and previous value of the Position of the throttle valve on motor bench one	<=	0.6016	%		
							for time (see Look-Up-Table #P3499-1)	=	0.42 to 0.84	sec		
							)					
							)					
							Valve lift diagnosis of bank 2 enabled.	=	TRUE	-		
							(					
							(					
							Engine speed	<=	2900	rpm		
							Engine speed	>=	750	rpm		
							)					
							(					
							raw manifold pressure - Bank 2 / pressure upstream throttle valve raw (2. bank)	<=	0.200012	_		
							raw manifold pressure - Bank 2 / pressure upstream throttle valve raw (2. bank)	>=	0.899994	_		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					)			
					(			
					condition: second pressure upstream throttle valve measured valid	= TRUE -		
					)			
					(			
					condition, measured intake manifold pressure valid sencond bank			
					)			
					(			
					Condition Mass flow at the DK calculated from the sensor signal of the HFM valid, Bank2	= TRUE -		
					)			
					(			
					Condition massflow over throttle blade based on throttle angle valid, Bank2	= TRUE -		
					)			
					time counter at first end of start in cycle (16 bit)	> 3 sec		
					(			
					(			
					Set intake manifold pressure: Bank 2	<= 40 kPa		
					OR			
					diiference of Set intake manifold pressure; Bank 2 and pressure value (best of) of the intake manifold - bank 2	<= 20 kPa		
					)			
					(			
					Set intake manifold pressure; Bank 2	>= -15 kPa		
					OR			
					diiference of Set intake manifold pressure; Bank 2 and pressure value (best of) of the intake manifold - bank 2	>= 150 kPa		
					)			
					)			
					(			
					Condition instationary state during half engine mode switching	= FALSE -		
					for time (see Look-Up-Table #P3499-2)	>= 0.6 to 0.85 sec		
					)			
					(			
					scavenging rate based on scavenged air and drapped air in the cylinder	<= 1 _		
					)			
					(			
					Absolute value of the difference between the currrent value and previous value of the Position of the throttle valve on motor bench two	<= 0.6016 %		
					for time (see Look-Up-Table #P3499-1)	= 0.42 to 0.84 sec		
					)			
					)			
					)			
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enabling conditions are met	= see sheet enable tables -		
	P318A	Detects no air charge change at the intake for cylinder 2 during full engine mode for a calibrated period of time	(		Synchronisation half engine mode and air charge determination of first activated HEM cylinder	= FALSE -	Continuous	2 Trips
			No air charge change at the intake	= TRUE -	Diagnose for undesired camshaft switch event active	= TRUE -		
			)		(			
			for counts	= 16 counts	Valve lift diagnosis enabled.	= TRUE -		
					(			
					(			
					Engine speed	<= 2900 rpm		
					Engine speed	>= 750 rpm		
					)			
					(			
					Ratio of Intake manifold pressure rawvalue to the Pressure upstream throttle valve raw	<= 0.899994 _		
					Ratio of Intake manifold pressure rawvalue to the Pressure upstream throttle valve raw	>= 0.200012 _		
					)			
					(			
					condition: first pressure upstream throttle valve measured valid	= TRUE -		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					)					
					(					
					validity of the pressure value (sensor) of the intake manifold - bank 1	=	TRUE	-		
					)					
					(					
					Condition massflow over throttle blade based on throttle angle valid, Bank1	=	TRUE	-		
					)					
					(					
					time counter at first end of start in cycle (16 bit)	>	3	sec		
					)					
					(					
					(					
					Set intake manifold pressure; Bank 1 lesser than Positive load step threshold for set pressure	<=	40	kPa		
					OR					
					diiference of Set intake manifold pressure; Bank 1 and pressure value (best of) of the intake manifold - bank 1 is lesser than caliberated threshld	<=	20	kPa		
					)					
					(					
					Set intake manifold pressure; Bank 1 is greater than Negative load step threshold for differential pressure	>=	-15	kPa		
					OR					
					diiference of Set intake manifold pressure; Bank 1 and pressure value (best of) of the intake manifold - bank 1 is greater than caliberated threshld	>=	150	kPa		
					)					
					)					
					(					
					Condition instationary state during half engine mode switching	=	FALSE	-		
					for time (see Look-Up-Table #P3499-2)	>=	0.6 to 0.85	sec		
					)					
					(					
					Scavenging rate based on scavenged air and drapped air in the cylinder	<=	1	_		
					)					
					(					
					Absolute value of the difference between the currrent value and previous value of the Position of the throttle valve on motor bench one	<=	0.6016	%		
					for time (see Look-Up-Table #P3499-1)	=	0.42 to 0.84	sec		
					)					
					)					
					Valve lift diagnosis of bank 2 enabled.	=	TRUE	-		
					(					
					(					
					Engine speed	<=	2900	rpm		
					Engine speed	>=	750	rpm		
					)					
					(					
					raw manifold pressure - Bank 2 / pressure upstream throttle valve raw (2. bank)	<=	0.200012	_		
					raw manifold pressure - Bank 2 / pressure upstream throttle valve raw (2. bank)	>=	0.899994	_		
					)					
					(					
					condition: second pressure upstream throttle valve measured valid	=	TRUE	-		
					)					
					(					
					condition, measured intake manifold pressure valid sencond bank					
					)					
					(					
					Condition Mass flow at the DK calculated from the sensor signal of the HFM valid, Bank2	=	TRUE	-		
					)					
					(					
					Condition massflow over throttle blade based on throttle angle valid, Bank2	=	TRUE	-		
					)					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required			MIL Illum.
					time counter at first end of start in cycle (16 bit)	>	3	sec				
					(							
					(							
					Set intake manifold pressure: Bank 2	<=	40	kPa				
					OR							
					diiference of Set intake manifold pressure; Bank 2 and pressure value (best of) of the intake manifold - bank 2	<=	20	kPa				
					)							
					(							
					Set intake manifold pressure; Bank 2	>=	-15	kPa				
					OR							
					diiference of Set intake manifold pressure; Bank 2 and pressure value (best of) of the intake manifold - bank 2	>=	150	kPa				
					)							
					)							
					(							
					Condition instationary state during half engine mode switching	=	FALSE	-				
					for time (see Look-Up-Table #P3499-2)	>=	0.6 to 0.85	sec				
					)							
					(							
					scavenging rate based on scavenged air and drapped air in the cylinder	<=	1	_				
					)							
					(							
					Absolute value of the difference between the currrent value and previous value of the Position of the throttle valve on motor bench two	<=	0.6016	%				
					for time (see Look-Up-Table #P3499-1)	=	0.42 to 0.84	sec				
					)							
					)							
					)							
					No pending or confirmed DTCs	=	see sheet inhibit tables	-				
					Basic enabling conditions are met	=	see sheet enable tables	-				
	P3412	Diagnosis of cylinder 2 gas exchange valve control for circuit high faults	Voltage high during driver on state (indicates short-to-power)	- Short to power: ≤ 0.5 Ω impedance between signal and controller power -	ECU is in drive state	=	TRUE	-	0.5	sec	continuous	2 Trips
					Engine Speed	>=	80	rpm				
					Battery Voltage	>	10.9	V				
					Battery Voltage	<	25.5	V				
					Engine Speed	<=	255	1/min				
					Gas exchange valve is turned ON and OFF during start off driving cycle to check the working of valve	=	TRUE	-				
					Basic enable conditions met	=	see sheet enable tables	-				
					No pending or confirmed DTCs	=	see sheet inhibit tables	-				
	P3411	Diagnosis of cylinder 2 gas exchange valve control for circuit low faults	Voltage low during driver off state (indicates short-to-ground)	= Short to ground: ≤ 0.5 Ω impedance between signal and controller ground -	ECU is in drive state	=	TRUE	-	0.5	sec	continuous	2 Trips
					Engine Speed	>=	80	rpm				
					Battery Voltage	>	10.9	V				
					Battery Voltage	<	25.5	V				
					Engine Speed	<=	255	1/min				
					Gas exchange valve is turned ON and OFF during start off driving cycle to check the working of valve	=	TRUE	-				
					Basic enable conditions met	=	see sheet enable tables	-				
					No pending or confirmed DTCs	=	see sheet inhibit tables	-				
	P3409	Diagnosis of cylinder 2 gas exchange valve control for open circuit faults	Voltage low during driver off state (indicates open circuit)	= Open Circuit:≥ 200 K Ω impedance between ECU pin and load -	ECU is in drive state	=	TRUE	-	0.5	sec	continuous	2 Trips
					Engine Speed	>=	80	rpm				
					Battery Voltage	>	10.9	V				
					Battery Voltage	<	25.5	V				
					Engine Speed	<=	255	1/min				

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
							Gas exchange valve is turned ON and OFF during start off driving cycle to check the working of valve	=	TRUE	-		
							Basic enable conditions met	=	see sheet enable tables	-		
							No pending or confirmed DTCs	=	see sheet inhibit tables	-		
Cylinder 3 Deactivation Solenoid	P349A	Detects "pumping air" error for cylinder 3 during half engine mode for a calibrated period fo time	(				Synchronisation half engine mode and air charge determination of first activated HEM cylinder	=	TRUE	-	Continuous	2 Trips
			"Pumping Air" Error is detected	=	TRUE	-	Diagnose for undesired camshaft switch event active	=	TRUE	-		
			)				(					
			for counts	=	16	counts	Valve lift diagnosis enabled.	=	TRUE	-		
							(					
							(					
							Engine speed	<=	2900	rpm		
							Engine speed	>=	750	rpm		
							)					
							(					
							Ratio of Intake manifold pressure rawvalue to the Pressure upstream throttle valve raw	<=	0.899994	_		
							Ratio of Intake manifold pressure rawvalue to the Pressure upstream throttle valve raw	>=	0.200012	_		
							)					
							(					
							condition: first pressure upstream throttle valve measured valid	=	TRUE	-		
							)					
							(					
							validity of the pressure value (sensor) of the intake manifold - bank 1	=	TRUE	-		
							)					
							(					
							Condition massflow over throttle blade based on throttle angle valid, Bank1	=	TRUE	-		
							)					
							(					
							time counter at first end of start in cycle (16 bit)	>	3	sec		
							)					
							(					
							(					
							Set intake manifold pressure; Bank 1 lesser than Positive load step threshold for set pressure	<=	40	kPa		
							OR					
							diference of Set intake manifold pressure; Bank 1 and pressure value (best of) of the intake manifold - bank 1 is lesser than caliberated threshld	<=	20	kPa		
							)					
							(					
							Set intake manifold pressure; Bank 1 is greater than Negative load step threshold for differential pressure	>=	-15	kPa		
							OR					
							diference of Set intake manifold pressure; Bank 1 and pressure value (best of) of the intake manifold - bank 1 is greater than caliberated threshld	>=	150	kPa		
							)					
							)					
							(					
							Condition instationary state during half engine mode switching	=	FALSE	-		
							for time (see Look-Up-Table #P3499-2)	>=	0.6 to 0.85	sec		
							)					
							(					
							Scavenging rate based on scavenged air and drapped air in the cylinder	<=	1	_		
							)					
							(					
							Absolute value of the difference between the currrent value and previous value of the Position of the throttle valve on motor bench one	<=	0.6016	%		
							for time (see Look-Up-Table #P3499-1)	=	0.42 to 0.84	sec		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					)			
					)			
					Valve lift diagnosis of bank 2 enabled.	= TRUE -		
					(			
					(			
					Engine speed	<= 2900 rpm		
					Engine speed	>= 750 rpm		
					)			
					(			
					raw manifold pressure - Bank 2 / pressure upstream throttle valve raw (2. bank)	<= 0.200012 _		
					raw manifold pressure - Bank 2 / pressure upstream throttle valve raw (2. bank)	>= 0.899994 _		
					)			
					(			
					condition: second pressure upstream throttle valve measured valid	= TRUE -		
					)			
					(			
					condition, measured intake manifold pressure valid sencond bank			
					)			
					(			
					Condition Mass flow at the DK calculated from the sensor signal of the HFM valid, Bank2	= TRUE -		
					)			
					(			
					Condition massflow over throttle blade based on throttle angle valid, Bank2	= TRUE -		
					)			
					time counter at first end of start in cycle (16 bit)	> 3 sec		
					(			
					(			
					Set intake manifold pressure: Bank 2	<= 40 kPa		
					OR			
					diiference of Set intake manifold pressure; Bank 2 and pressure value (best of) of the intake manifold - bank 2	<= 20 kPa		
					)			
					(			
					Set intake manifold pressure; Bank 2	>= -15 kPa		
					OR			
					diiference of Set intake manifold pressure; Bank 2 and pressure value (best of) of the intake manifold - bank 2	>= 150 kPa		
					)			
					)			
					(			
					Condition instationary state during half engine mode switching	= FALSE -		
					for time (see Look-Up-Table #P3499-2)	>= 0.6 to 0.85 sec		
					)			
					(			
					scavenging rate based on scavenged air and drapped air in the cylinder	<= 1 _		
					)			
					(			
					Absolute value of the difference between the currrent value and previous value of the Position of the throttle valve on motor bench two	<= 0.6016 %		
					for time (see Look-Up-Table #P3499-1)	= 0.42 to 0.84 sec		
					)			
					)			
					)			
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enabling conditions are met	= see sheet enable tables -		
	P318B	Detects no air charge change at the intake for cylinder 3 during full engine mode for a calibrated period of time	(		Synchronisation half engine mode and air charge determination of first activated HEM cylinder	= FALSE -	Continuous	2 Trips
			No air charge change at the intake	= TRUE -	Diagnose for undesired camshaft switch event active	= TRUE -		
			)		(			
			for counts	= 16 counts	Valve lift diagnosis enabled.	= TRUE -		
					(			
					(			
					Engine speed	<= 2900 rpm		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					Engine speed	>=	750	rpm		
					)					
					(					
					Ratio of Intake manifold pressure rawvalue to the Pressure upstream throttle valve raw	<=	0.899994	_		
					Ratio of Intake manifold pressure rawvalue to the Pressure upstream throttle valve raw	>=	0.200012	_		
					)					
					(					
					condition: first pressure upstream throttle valve measured valid	=	TRUE	-		
					)					
					(					
					validity of the pressure value (sensor) of the intake manifold - bank 1	=	TRUE	-		
					)					
					(					
					Condition massflow over throttle blade based on throttle angle valid, Bank1	=	TRUE	-		
					)					
					(					
					time counter at first end of start in cycle (16 bit)	>	3	sec		
					)					
					(					
					(					
					Set intake manifold pressure; Bank 1 lesser than Positive load step threshold for set pressure	<=	40	kPa		
					OR					
					diiference of Set intake manifold pressure; Bank 1 and pressure value (best of) of the intake manifold - bank 1 is lesser than caliberated threshld	<=	20	kPa		
					)					
					(					
					Set intake manifold pressure; Bank 1 is greater than Negative load step threshold for differential pressure	>=	-15	kPa		
					OR					
					diiference of Set intake manifold pressure; Bank 1 and pressure value (best of) of the intake manifold - bank 1 is greater than caliberated threshld	>=	150	kPa		
					)					
					)					
					(					
					Condition instationary state during half engine mode switching	=	FALSE	-		
					for time (see Look-Up-Table #P3499-2)	>=	0.6 to 0.85	sec		
					)					
					(					
					Scavenging rate based on scavenged air and drapped air in the cylinder	<=	1	_		
					)					
					(					
					Absolute value of the difference between the currrent value and previous value of the Position of the throttle valve on motor bench one	<=	0.6016	%		
					for time (see Look-Up-Table #P3499-1)	=	0.42 to 0.84	sec		
					)					
					)					
					Valve lift diagnosis of bank 2 enabled.	=	TRUE	-		
					(					
					(					
					Engine speed	<=	2900	rpm		
					Engine speed	>=	750	rpm		
					)					
					(					
					raw manifold pressure - Bank 2 / pressure upstream throttle valve raw (2. bank)	<=	0.200012	_		
					raw manifold pressure - Bank 2 / pressure upstream throttle valve raw (2. bank)	>=	0.899994	_		
					)					
					(					
					condition: second pressure upstream throttle valve measured valid	=	TRUE	-		
					)					
					(					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					condition, measured intake manifold pressure valid sencond bank			
					)			
					(			
					Condition Mass flow at the DK calculated from the sensor signal of the HFM valid, Bank2	= TRUE -		
					)			
					(			
					Condition massflow over throttle blade based on throttle angle valid, Bank2	= TRUE -		
					)			
					time counter at first end of start in cycle (16 bit)	> 3 sec		
					(			
					(			
					Set intake manifold pressure; Bank 2	<= 40 kPa		
					OR			
					diiference of Set intake manifold pressure; Bank 2 and pressure value (best of) of the intake manifold - bank 2	<= 20 kPa		
					)			
					(			
					Set intake manifold pressure; Bank 2	>= -15 kPa		
					OR			
					diiference of Set intake manifold pressure; Bank 2 and pressure value (best of) of the intake manifold - bank 2	>= 150 kPa		
					)			
					)			
					(			
					Condition instationary state during half engine mode switching	= FALSE -		
					for time (see Look-Up-Table #P3499-2)	>= 0.6 to 0.85 sec		
					)			
					(			
					scavenging rate based on scavenged air and drapped air in the cylinder	<= 1 _		
					)			
					(			
					Absolute value of the difference between the currrent value and previous value of the Position of the throttle valve on motor bench two	<= 0.6016 %		
					for time (see Look-Up-Table #P3499-1)	= 0.42 to 0.84 sec		
					)			
					)			
					)			
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enabling conditions are met	= see sheet enable tables -		
	P3420	Diagnosis of cylinder 3 gas exchange valve control for circuit high faults	Voltage high during driver on state (indicates short-to-power)	- Short to power: ≤ 0.5 Ω impedance between signal and controller power -	ECU is in drive state	= TRUE -	0.5 sec continuous	2 Trips
					Engine Speed	>= 80 rpm		
					Battery Voltage	> 10.9 V		
					Battery Voltage	< 25.5 V		
					Engine Speed	<= 255 1/min		
					Gas exchange valve is turned ON and OFF during start off driving cycle to check the working of valve	= TRUE -		
					Basic enable conditions met	= see sheet enable tables -		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
	P3419	Diagnosis of cylinder 3 gas exchange valve control for circuit low faults	Voltage low during driver off state (indicates short-to-ground)	= Short to ground: ≤ 0.5 Ω impedance between signal and controller ground -	ECU is in drive state	= TRUE -	0.5 sec continuous	2 Trips
					Engine Speed	>= 80 rpm		
					Battery Voltage	> 10.9 V		
					Battery Voltage	< 25.5 V		
					Engine Speed	<= 255 1/min		
					Gas exchange valve is turned ON and OFF during start off driving cycle to check the working of valve	= TRUE -		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Basic enable conditions met	= see sheet enable tables -		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
	P3417	Diagnosis of cylinder 3 gas exchange valve control for open circuit faults	Voltage low during driver off state (indicates open circuit)	= Open Circuit:≥ 200 K Ω impedance between ECU pin and load -	ECU is in drive state	= TRUE -	0.5 sec continuous	2 Trips
					Engine Speed	>= 80 rpm		
					Battery Voltage	> 10.9 V		
					Battery Voltage	< 25.5 V		
					Engine Speed	<= 255 1/min		
					Gas exchange valve is turned ON and OFF during start off driving cycle to check the working of valve	= TRUE -		
					Basic enable conditions met	= see sheet enable tables -		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
Cylinder 5 Deactivation Solenoid	P349C	Detects "pumping air" error for cylinder 5 during half engine mode for a calibrated period fo time	(		Synchronisation half engine mode and air charge determination of first activated HEM cylinder	= TRUE -	Continuous	2 Trips
			"Pumping Air" Error is detected	= TRUE -	Diagnose for undesired camshaft switch event active	= TRUE -		
			)		(			
			for counts	= 16 counts	Valve lift diagnosis enabled.	= TRUE -		
					(			
					(			
					Engine speed	<= 2900 rpm		
					Engine speed	>= 750 rpm		
					)			
					(			
					Ratio of Intake manifold pressure rawvalue to the Pressure upstream throttle valve raw	<= 0.899994 _		
					Ratio of Intake manifold pressure rawvalue to the Pressure upstream throttle valve raw	>= 0.200012 _		
					)			
					(			
					condition: first pressure upstream throttle valve measured valid	= TRUE -		
					)			
					(			
					validity of the pressure value (sensor) of the intake manifold - bank 1	= TRUE -		
					)			
					(			
					Condition massflow over throttle blade based on throttle angle valid, Bank1	= TRUE -		
					)			
					(			
					time counter at first end of start in cycle (16 bit)	> 3 sec		
					)			
					(			
					(			
					Set intake manifold pressure; Bank 1 lesser than Positive load step threshold for set pressure	<= 40 kPa		
					OR			
					diiference of Set intake manifold pressure; Bank 1 and pressure value (best of) of the intake manifold - bank 1 is lesser than caliberated threshld	<= 20 kPa		
					)			
					(			
					Set intake manifold pressure; Bank 1 is greater than Negative load step threshold for differential pressure	>= -15 kPa		
					OR			
					diiference of Set intake manifold pressure; Bank 1 and pressure value (best of) of the intake manifold - bank 1 is greater than caliberated threshld	>= 150 kPa		
					)			
					)			
					(			
					Condition instationary state during half engine mode switching	= FALSE -		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					for time (see Look-Up-Table #P3499-2)	>=	0.6 to 0.85	sec		
					)					
					(					
					Scavenging rate based on scavenged air and drapped air in the cylinder	<=	1	_		
					)					
					(					
					Absolute value of the difference between the currrent value and previous value of the Position of the throttle valve on motor bench one	<=	0.6016	%		
					for time (see Look-Up-Table #P3499-1)	=	0.42 to 0.84	sec		
					)					
					)					
					Valve lift diagnosis of bank 2 enabled.	=	TRUE	-		
					(					
					(					
					Engine speed	<=	2900	rpm		
					Engine speed	>=	750	rpm		
					)					
					(					
					raw manifold pressure - Bank 2 / pressure upstream throttle valve raw (2. bank)	<=	0.200012	_		
					raw manifold pressure - Bank 2 / pressure upstream throttle valve raw (2. bank)	>=	0.899994	_		
					)					
					(					
					condition: second pressure upstream throttle valve measured valid	=	TRUE	-		
					)					
					(					
					condition, measured intake manifold pressure valid sencond bank					
					)					
					(					
					Condition Mass flow at the DK calculated from the sensor signal of the HFM valid, Bank2	=	TRUE	-		
					)					
					(					
					Condition massflow over throttle blade based on throttle angle valid, Bank2	=	TRUE	-		
					)					
					time counter at first end of start in cycle (16 bit)	>	3	sec		
					(					
					(					
					Set intake manifold pressure; Bank 2	<=	40	kPa		
					OR					
					diiference of Set intake manifold pressure; Bank 2 and pressure value (best of) of the intake manifold - bank 2	<=	20	kPa		
					)					
					(					
					Set intake manifold pressure; Bank 2	>=	-15	kPa		
					OR					
					diiference of Set intake manifold pressure; Bank 2 and pressure value (best of) of the intake manifold - bank 2	>=	150	kPa		
					)					
					)					
					(					
					Condition instationary state during half engine mode switching	=	FALSE	-		
					for time (see Look-Up-Table #P3499-2)	>=	0.6 to 0.85	sec		
					)					
					(					
					scavenging rate based on scavenged air and drapped air in the cylinder	<=	1	_		
					)					
					(					
					Absolute value of the difference between the currrent value and previous value of the Position of the throttle valve on motor bench two	<=	0.6016	%		
					for time (see Look-Up-Table #P3499-1)	=	0.42 to 0.84	sec		
					)					
					)					
					)					
					No pending or confirmed DTCs	=	see sheet inhibit tables	-		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Basic enabling conditions are met	= see sheet enable tables -		
	P318D	Detects no air charge change at the intake for cylinder 5 during full engine mode for a calibrated period of time	(		Synchronisation half engine mode and air charge determination of first activated HEM cylinder	= FALSE -	Continuous	2 Trips
			No air charge change at the intake	= TRUE -	Diagnose for undesired camshaft switch event active	= TRUE -		
			)		(			
			for counts	= 16 counts	Valve lift diagnosis enabled.	= TRUE -		
					(			
					(			
					Engine speed	<= 2900 rpm		
					Engine speed	>= 750 rpm		
					)			
					(			
					Ratio of Intake manifold pressure rawvalue to the Pressure upstream throttle valve raw	<= 0.899994 _		
					and			
					Ratio of Intake manifold pressure rawvalue to the Pressure upstream throttle valve raw	>= 0.200012 _		
					)			
					(			
					condition: first pressure upstream throttle valve measured valid	= TRUE -		
					)			
					(			
					validity of the pressure value (sensor) of the intake manifold - bank 1	= TRUE -		
					)			
					(			
					Condition massflow over throttle blade based on throttle angle valid, Bank1	= TRUE -		
					)			
					(			
					time counter at first end of start in cycle (16 bit)	> 3 sec		
					)			
					(			
					(			
					Set intake manifold pressure; Bank 1 lesser than Positive load step threshold for set pressure	<= 40 kPa		
					OR			
					diiference of Set intake manifold pressure; Bank 1 and pressure value (best of) of the intake manifold - bank 1 is lesser than caliberated threshld	<= 20 kPa		
					)			
					(			
					Set intake manifold pressure; Bank 1 is greater than Negative load step threshold for differential pressure	>= -15 kPa		
					OR			
					diiference of Set intake manifold pressure; Bank 1 and pressure value (best of) of the intake manifold - bank 1 is greater than caliberated threshld	>= 150 kPa		
					)			
					)			
					(			
					Condition instationary state during half engine mode switching	= FALSE -		
					for time (see Look-Up-Table #P3499-2)	>= 0.6 to 0.85 sec		
					)			
					(			
					Scavenging rate based on scavenged air and drapped air in the cylinder	<= 1 _		
					)			
					(			
					Absolute value of the difference between the currrent value and previous value of the Position of the throttle valve on motor bench one	<= 0.6016 %		
					for time (see Look-Up-Table #P3499-1)	= 0.42 to 0.84 sec		
					)			
					)			
					Valve lift diagnosis of bank 2 enabled.	= TRUE -		
					(			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					(					
					Engine speed	<=	2900	rpm		
					Engine speed	>=	750	rpm		
					)					
					(					
					raw manifold pressure - Bank 2 / pressure upstream throttle valve raw (2. bank)	<=	0.200012	_		
					raw manifold pressure - Bank 2 / pressure upstream throttle valve raw (2. bank)	>=	0.899994	_		
					)					
					(					
					condition: second pressure upstream throttle valve measured valid	=	TRUE	-		
					)					
					(					
					condition, measured intake manifold pressure valid sencond bank					
					)					
					(					
					Condition Mass flow at the DK calculated from the sensor signal of the HFM valid, Bank2	=	TRUE	-		
					)					
					(					
					Condition massflow over throttle blade based on throttle angle valid, Bank2	=	TRUE	-		
					)					
					time counter at first end of start in cycle (16 bit)	>	3	sec		
					(					
					(					
					Set intake manifold pressure; Bank 2	<=	40	kPa		
					OR					
					diiference of Set intake manifold pressure; Bank 2 and pressure value (best of) of the intake manifold - bank 2	<=	20	kPa		
					)					
					(					
					Set intake manifold pressure; Bank 2	>=	-15	kPa		
					OR					
					diiference of Set intake manifold pressure; Bank 2 and pressure value (best of) of the intake manifold - bank 2	>=	150	kPa		
					)					
					)					
					(					
					Condition instationary state during half engine mode switching	=	FALSE	-		
					for time (see Look-Up-Table #P3499-2)	>=	0.6 to 0.85	sec		
					)					
					(					
					scavenging rate based on scavenged air and drapped air in the cylinder	<=	1	_		
					)					
					(					
					Absolute value of the difference between the currrent value and previous value of the Position of the throttle valve on motor bench two	<=	0.6016	%		
					for time (see Look-Up-Table #P3499-1)	=	0.42 to 0.84	sec		
					)					
					)					
					)					
					No pending or confirmed DTCs	=	see sheet inhibit tables	-		
					Basic enabling conditions are met	=	see sheet enable tables	-		
	P3436	Diagnosis of cylinder 5 gas exchange valve control for circuit high faults	Voltage high during driver on state (indicates short-to-power)	- Short to power: ≤ 0.5 Ω impedance between signal and controller power -	ECU is in drive state	=	TRUE	-	0.5 sec continuous	2 Trips
					Engine Speed	>=	80	rpm		
					Battery Voltage	>	10.9	V		
					Battery Voltage	<	25.5	V		
					Engine Speed	<=	255	1/min		
					Gas exchange valve is turned ON and OFF during start off driving cycle to check the working of valve	=	TRUE	-		
					Basic enable conditions met	=	see sheet enable tables	-		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					No pending or confirmed DTCs	= see sheet inhibit tables -		
	P3435	Diagnosis of cylinder 5 gas exchange valve control for circuit low faults	Voltage low during driver off state (indicates short-to-ground)	= Short to ground: ≤ 0.5 Ω impedance between signal and controller ground -	ECU is in drive state	= TRUE -	0.5 sec continuous	2 Trips
					Engine Speed	>= 80 rpm		
					Battery Voltage	> 10.9 V		
					Battery Voltage	< 25.5 V		
					Engine Speed	<= 255 1/min		
					Gas exchange valve is turned ON and OFF during start off driving cycle to check the working of valve	= TRUE -		
					Basic enable conditions met	= see sheet enable tables -		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
	P3433	Diagnosis of cylinder 5 gas exchange valve control for open circuit faults	Voltage low during driver off state (indicates open circuit)	= Open Circuit:≥ 200 K Ω impedance between ECU pin and load -	ECU is in drive state	= TRUE -	0.5 sec continuous	2 Trips
					Engine Speed	>= 80 rpm		
					Battery Voltage	> 10.9 V		
					Battery Voltage	< 25.5 V		
					Engine Speed	<= 255 1/min		
					Gas exchange valve is turned ON and OFF during start off driving cycle to check the working of valve	= TRUE -		
					Basic enable conditions met	= see sheet enable tables -		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
Cylinder 8 Deactivation Solenoid	P349F	Detects "pumping air" error for cylinder 8 during half engine mode for a calibrated period fo time	(		Synchronisation half engine mode and air charge determination of first activated HEM cylinder	= TRUE -	Continuous	2 Trips
			"Pumping Air" Error is detected	= TRUE -	Diagnose for undesired camshaft switch event active	= TRUE -		
			)		(			
			for counts	= 16 counts	Valve lift diagnosis enabled.	= TRUE -		
					(			
					(			
					Engine speed	<= 2900 rpm		
					Engine speed	>= 750 rpm		
					)			
					(			
					Ratio of Intake manifold pressure rawvalue to the Pressure upstream throttle valve raw	<= 0.899994 _		
					Ratio of Intake manifold pressure rawvalue to the Pressure upstream throttle valve raw	>= 0.200012 _		
					)			
					(			
					condition: first pressure upstream throttle valve measured valid	= TRUE -		
					)			
					(			
					validity of the pressure value (sensor) of the intake manifold - bank 1	= TRUE -		
					)			
					(			
					Condition massflow over throttle blade based on throttle angle valid, Bank1	= TRUE -		
					)			
					(			
					time counter at first end of start in cycle (16 bit)	> 3 sec		
					)			
					(			
					(			
					Set intake manifold pressure; Bank 1 lesser than Positive load step threshold for set pressure	<= 40 kPa		
					OR			
					diiference of Set intake manifold pressure; Bank 1 and pressure value (best of) of the intake manifold - bank 1 is lesser than caliberated threshld	<= 20 kPa		
					)			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					(					
					Set intake manifold pressure; Bank 1 is greater than Negative load step threshold for differential pressure	>=	-15	kPa		
					OR					
					diiference of Set intake manifold pressure; Bank 1 and pressure value (best of) of the intake manifold - bank 1 is greater than caliberated threshld	>=	150	kPa		
					)					
					)					
					(					
					Condition instationary state during half engine mode switching	=	FALSE	-		
					for time (see Look-Up-Table #P3499-2)	>=	0.6 to 0.85	sec		
					)					
					(					
					Scavenging rate based on scavenged air and drapped air in the cylinder	<=	1	_		
					)					
					(					
					Absolute value of the difference between the currrent value and previous value of the Position of the throttle valve on motor bench one	<=	0.6016	%		
					for time (see Look-Up-Table #P3499-1)	=	0.42 to 0.84	sec		
					)					
					)					
					Valve lift diagnosis of bank 2 enabled.	=	TRUE	-		
					(					
					(					
					Engine speed	<=	2900	rpm		
					Engine speed	>=	750	rpm		
					)					
					(					
					raw manifold pressure - Bank 2 / pressure upstream throttle valve raw (2. bank)	<=	0.200012	_		
					raw manifold pressure - Bank 2 / pressure upstream throttle valve raw (2. bank)	>=	0.899994	_		
					)					
					(					
					condition: second pressure upstream throttle valve measured valid	=	TRUE	-		
					)					
					(					
					condition, measured intake manifold pressure valid sencond bank					
					)					
					(					
					Condition Mass flow at the DK calculated from the sensor signal of the HFM valid, Bank2	=	TRUE	-		
					)					
					(					
					Condition massflow over throttle blade based on throttle angle valid, Bank2	=	TRUE	-		
					)					
					time counter at first end of start in cycle (16 bit)	>	3	sec		
					(					
					(					
					Set intake manifold pressure; Bank 2	<=	40	kPa		
					OR					
					diiference of Set intake manifold pressure; Bank 2 and pressure value (best of) of the intake manifold - bank 2	<=	20	kPa		
					)					
					(					
					Set intake manifold pressure; Bank 2	>=	-15	kPa		
					OR					
					diiference of Set intake manifold pressure; Bank 2 and pressure value (best of) of the intake manifold - bank 2	>=	150	kPa		
					)					
					)					
					(					
					Condition instationary state during half engine mode switching	=	FALSE	-		
					for time (see Look-Up-Table #P3499-2)	>=	0.6 to 0.85	sec		
					)					
					(					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					scavenging rate based on scavenged air and drapped air in the cylinder	<= 1 _		
					)			
					(			
					Absolute value of the difference between the currrent value and previous value of the Position of the throttle valve on motor bench two	<= 0.6016 %		
					for time (see Look-Up-Table #P3499-1)	= 0.42 to 0.84 sec		
					)			
					)			
					)			
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enabling conditions are met	= see sheet enable tables -		
	P3190	Detects no air charge change at the intake for cylinder 8 during full engine mode for a calibrated period of time	(		Synchronisation half engine mode and air charge determination of first activated HEM cylinder	= FALSE -	Continuous	2 Trips
			No air charge change at the intake	= TRUE -	Diagnose for undesired camshaft switch event active	= TRUE -		
			)		(			
			for counts	= 16 counts	Valve lift diagnosis enabled.	= TRUE -		
					(			
					(			
					Engine speed	<= 2900 rpm		
					Engine speed	>= 750 rpm		
					)			
					(			
					Ratio of Intake manifold pressure rawvalue to the Pressure upstream throttle valve raw	<= 0.899994 _		
					and			
					Ratio of Intake manifold pressure rawvalue to the Pressure upstream throttle valve raw	>= 0.200012 _		
					)			
					(			
					condition: first pressure upstream throttle valve measured valid	= TRUE -		
					)			
					(			
					validity of the pressure value (sensor) of the intake manifold - bank 1	= TRUE -		
					)			
					(			
					Condition massflow over throttle blade based on throttle angle valid, Bank1	= TRUE -		
					)			
					(			
					time counter at first end of start in cycle (16 bit)	> 3 sec		
					)			
					(			
					(			
					Set intake manifold pressure; Bank 1 lesser than Positive load step threshold for set pressure	<= 40 kPa		
					OR			
					diiference of Set intake manifold pressure; Bank 1 and pressure value (best of) of the intake manifold - bank 1 is lesser than caliberated threshld	<= 20 kPa		
					)			
					(			
					Set intake manifold pressure; Bank 1 is greater than Negative load step threshold for differential pressure	>= -15 kPa		
					OR			
					diiference of Set intake manifold pressure; Bank 1 and pressure value (best of) of the intake manifold - bank 1 is greater than caliberated threshld	>= 150 kPa		
					)			
					)			
					(			
					Condition instationary state during half engine mode switching	= FALSE -		
					for time (see Look-Up-Table #P3499-2)	>= 0.6 to 0.85 sec		
					)			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					(					
					Scavenging rate based on scavenged air and drapped air in the cylinder	<=	1	_		
					)					
					(					
					Absolute value of the difference between the currrent value and previous value of the Position of the throttle valve on motor bench one	<=	0.6016	%		
					for time (see Look-Up-Table #P3499-1)	=	0.42 to 0.84	sec		
					)					
					)					
					Valve lift diagnosis of bank 2 enabled.	=	TRUE	-		
					(					
					(					
					Engine speed	<=	2900	rpm		
					Engine speed	>=	750	rpm		
					)					
					(					
					raw manifold pressure - Bank 2 / pressure upstream throttle valve raw (2. bank)	<=	0.200012	_		
					raw manifold pressure - Bank 2 / pressure upstream throttle valve raw (2. bank)	>=	0.899994	_		
					)					
					(					
					condition: second pressure upstream throttle valve measured valid	=	TRUE	-		
					)					
					(					
					condition, measured intake manifold pressure valid sencond bank					
					)					
					(					
					Condition Mass flow at the DK calculated from the sensor signal of the HFM valid, Bank2	=	TRUE	-		
					)					
					(					
					Condition massflow over throttle blade based on throttle angle valid, Bank2	=	TRUE	-		
					)					
					time counter at first end of start in cycle (16 bit)	>	3	sec		
					(					
					(					
					Set intake manifold pressure; Bank 2	<=	40	kPa		
					OR					
					diference of Set intake manifold pressure; Bank 2 and pressure value (best of) of the intake manifold - bank 2	<=	20	kPa		
					)					
					(					
					Set intake manifold pressure; Bank 2	>=	-15	kPa		
					OR					
					diference of Set intake manifold pressure; Bank 2 and pressure value (best of) of the intake manifold - bank 2	>=	150	kPa		
					)					
					)					
					(					
					Condition instationary state during half engine mode switching	=	FALSE	-		
					for time (see Look-Up-Table #P3499-2)	>=	0.6 to 0.85	sec		
					)					
					(					
					scavenging rate based on scavenged air and drapped air in the cylinder	<=	1	_		
					)					
					(					
					Absolute value of the difference between the currrent value and previous value of the Position of the throttle valve on motor bench two	<=	0.6016	%		
					for time (see Look-Up-Table #P3499-1)	=	0.42 to 0.84	sec		
					)					
					)					
					)					
					No pending or confirmed DTCs	=	see sheet inhibit tables	-		
					Basic enabling conditions are met	=	see sheet enable tables	-		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required			MIL Illum.
	P3460	Diagnosis of cylinder 8 gas exchange valve control for circuit high faults	Voltage high during driver on state (indicates short-to-power)	-	Short to power: ≤ 0.5 Ω impedance between signal and controller power	-	ECU is in drive state	=	TRUE	-	0.5	sec	continuous	2 Trips
							Engine Speed	>=	80	rpm				
							Battery Voltage	>	10.9	V				
							Battery Voltage	<	25.5	V				
							Engine Speed	<=	255	1/min				
							Gas exchange valve is turned ON and OFF during start off driving cycle to check the working of valve	=	TRUE	-				
							Basic enable conditions met	=	see sheet enable tables	-				
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
	P3459	Diagnosis of cylinder 8 gas exchange valve control for circuit low faults	Voltage low during driver off state (indicates short-to-ground)	=	Short to ground: ≤ 0.5 Ω impedance between signal and controller ground	-	ECU is in drive state	=	TRUE	-	0.5	sec	continuous	2 Trips
							Engine Speed	>=	80	rpm				
							Battery Voltage	>	10.9	V				
							Battery Voltage	<	25.5	V				
							Engine Speed	<=	255	1/min				
							Gas exchange valve is turned ON and OFF during start off driving cycle to check the working of valve	=	TRUE	-				
							Basic enable conditions met	=	see sheet enable tables	-				
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
	P3457	Diagnosis of cylinder 8 gas exchange valve control for open circuit faults	Voltage low during driver off state (indicates open circuit)	=	Open Circuit:≥ 200 K Ω impedance between ECU pin and load	-	ECU is in drive state	=	TRUE	-	0.5	sec	continuous	2 Trips
							Engine Speed	>=	80	rpm				
							Battery Voltage	>	10.9	V				
							Battery Voltage	<	25.5	V				
							Engine Speed	<=	255	1/min				
							Gas exchange valve is turned ON and OFF during start off driving cycle to check the working of valve	=	TRUE	-				
							Basic enable conditions met	=	see sheet enable tables	-				
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
Ignition Coils	P2301	Diagnoses the Ignition Coil "A" Primary low side driver circuit for circuit high faults.	Voltage high during driver on state (indicates short-to-power)	=	Short to power: ≤ 0.5 Ω impedance between signal and controller power	-	Battery voltage	>	10.9	V	0,4	sec	continuous	2 Trips
							Battery voltage	<	655.34	V				
							Ignition synchronized	=	TRUE	-				
							Engine speed	>	1400	rpm				
							Difference between new and old ignition counter ensuring that all cylinder were fired at least once	>	9	counts				
							Basic enable conditions met	=	see sheet enable tables	-				
	P2300	Diagnoses the Ignition Coil "A" Primary low side driver circuit for circuit low faults.	Voltage low during driver off state (indicates short-to-ground)	=	Short to ground: ≤ 0.5 Ω impedance between signal and controller ground	-	Battery voltage	>	10.9	V	0,4	sec	continuous	2 Trips
							Battery voltage	<	655.34	V				
							Ignition synchronized	=	TRUE	-				
							Engine speed	>	1400	rpm				
							Difference between new and old ignition counter ensuring that all cylinder were fired at least once	>	9	counts				
							Basic enable conditions met	=	see sheet enable tables	-				
	P0351	Diagnoses the Ignition Coil "A" Primary low side driver circuit for open circuit faults.	Voltage low during driver off state (indicates open circuit)	=	Open Circuit : ≥ 200 KΩ impedance between ECU pin and load	-	Battery voltage	>	10.9	V	0,4	sec	continuous	2 Trips
							Battery voltage	<	655.34	V				

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Ignition synchronized Engine speed Difference between new and old ignition counter ensuring that all cylinder were fired at least once Basic enable conditions met	= TRUE - > 1400 rpm > 9 counts = see sheet enable tables -		
	P2304	Diagnoses the Ignition Coil "H" low side driver circuit for circuit high faults.	Voltage high during driver on state (indicates short-to-power)	= Short to power: ≤ 0.5 Ω impedance between signal and controller power -	Battery voltage Battery voltage Ignition synchronized Engine speed Difference between new and old ignition counter ensuring that all cylinder were fired at least once Basic enable conditions met	> 10.9 V < 655.34 V = TRUE - > 1400 rpm > 9 counts = see sheet enable tables -	0,4 sec continuous	2 Trips
	P2303	Diagnoses the Ignition Coil "H" Primary low side driver circuit for circuit low faults.	Voltage low during driver off state (indicates short-to-ground)	= Short to ground: ≤ 0.5 Ω impedance between signal and controller ground -	Battery voltage Battery voltage Ignition synchronized Engine speed Difference between new and old ignition counter ensuring that all cylinder were fired at least once Basic enable conditions met	> 10.9 V < 655.34 V = TRUE - > 1400 rpm > 9 counts = see sheet enable tables -	0,4 sec continuous	2 Trips
	P0352	Diagnoses the Ignition Coil "H" Primary low side driver circuit for open circuit faults.	Voltage low during driver off state (indicates open circuit)	= Open Circuit : ≥ 200 KΩ impedance between ECU pin and load -	Battery voltage Battery voltage Ignition synchronized Engine speed Difference between new and old ignition counter ensuring that all cylinder were fired at least once Basic enable conditions met	> 10.9 V < 655.34 V = TRUE - > 1400 rpm > 9 counts = see sheet enable tables -	0,4 sec continuous	2 Trips
	P2307	Diagnoses the Ignition Coil "D" low side driver circuit for circuit high faults.	Voltage high during driver on state (indicates short-to-power)	= Short to power: ≤ 0.5 Ω impedance between signal and controller power -	Battery voltage Battery voltage Ignition synchronized Engine speed Difference between new and old ignition counter ensuring that all cylinder were fired at least once Basic enable conditions met	> 10.9 V < 655.34 V = TRUE - > 1400 rpm > 9 counts = see sheet enable tables -	0,4 sec continuous	2 Trips
	P2306	Diagnoses the Ignition Coil "D" low side driver circuit for circuit low faults.	Voltage low during driver off state (indicates short-to-ground)	= Short to ground: ≤ 0.5 Ω impedance between signal and controller ground -	Battery voltage Battery voltage Ignition synchronized Engine speed Difference between new and old ignition counter ensuring that all cylinder were fired at least once Basic enable conditions met	> 10.9 V < 655.34 V = TRUE - > 1400 rpm > 9 counts = see sheet enable tables -	0,4 sec continuous	2 Trips

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required			MIL Illum.
	P0353	Diagnoses the Ignition Coil "D" Primary low side driver circuit for open circuit faults.	Voltage low during driver off state (indicates open circuit)	=	Open Circuit : ≥ 200 KΩ impedance between ECU pin and load	-	Battery voltage	>	10.9	V	0,4	sec	continuous	2 Trips
							Battery voltage	<	655.34	V				
							Ignition synchronized	=	TRUE	-				
							Engine speed	>	1400	rpm				
							Difference between new and old ignition counter ensuring that all cylinder were fired at least once	>	9	counts				
							Basic enable conditions met	=	see sheet enable tables	-				
	P2310	Diagnoses the Ignition Coil "C" low side driver circuit for circuit high faults.	Voltage high during driver on state (indicates short-to-power)	=	Short to power: ≤ 0.5 Ω impedance between signal and controller power	-	Battery voltage	>	10.9	V	0,4	sec	continuous	2 Trips
							Battery voltage	<	655.34	V				
							Ignition synchronized	=	TRUE	-				
							Engine speed	>	1400	rpm				
							Difference between new and old ignition counter ensuring that all cylinder were fired at least once	>	9	counts				
							Basic enable conditions met	=	see sheet enable tables	-				
	P2309	Diagnoses the Ignition Coil "C" low side driver circuit for circuit low faults.	Voltage low during driver off state (indicates short-to-ground)	=	Short to ground: ≤ 0.5 Ω impedance between signal and controller ground	-	Battery voltage	>	10.9	V	0,4	sec	continuous	2 Trips
							Battery voltage	<	655.34	V				
							Ignition synchronized	=	TRUE	-				
							Engine speed	>	1400	rpm				
							Difference between new and old ignition counter ensuring that all cylinder were fired at least once	>	9	counts				
							Basic enable conditions met	=	see sheet enable tables	-				
	P0354	Diagnoses the Ignition Coil "C" Primary low side driver circuit for open circuit faults.	Voltage low during driver off state (indicates open circuit)	=	Open Circuit : ≥ 200 KΩ impedance between ECU pin and load	-	Battery voltage	>	10.9	V	0,4	sec	continuous	2 Trips
							Battery voltage	<	655.34	V				
							Ignition synchronized	=	TRUE	-				
							Engine speed	>	1400	rpm				
							Difference between new and old ignition counter ensuring that all cylinder were fired at least once	>	9	counts				
							Basic enable conditions met	=	see sheet enable tables	-				
	P2313	Diagnoses the Ignition Coil "B" Primary low side driver circuit for circuit high faults.	Voltage high during driver on state (indicates short-to-power)	=	Short to power: ≤ 0,5 Ω impedance between signal and controller power	-	Battery voltage	>	10.9	V	0,4	sec	continuous	2 Trips
							Battery voltage	<	655.34	V				
							Ignition synchronized	=	TRUE	-				
							Engine speed	>	1400	rpm				
							Difference between new and old ignition counter ensuring that all cylinder were fired at least once	>	9	counts				
							Basic enable conditions met	=	see sheet enable tables	-				
	P2312	Diagnoses the Ignition Coil "B" Primary low side driver circuit for circuit low faults.	Voltage low during driver off state (indicates short-to-ground)	=	Short to ground: ≤ 0.5 Ω impedance between signal and controller ground	-	Battery voltage	>	10.9	V	0,4	sec	continuous	2 Trips
							Battery voltage	<	655.34	V				
							Ignition synchronized	=	TRUE	-				
							Engine speed	>	1400	rpm				
							Difference between new and old ignition counter ensuring that all cylinder were fired at least once	>	9	counts				
							Basic enable conditions met	=	see sheet enable tables	-				

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
	P0355	Diagnoses the Ignition Coil "B" Primary low side driver circuit for open circuit faults.	Voltage low during driver off state (indicates open circuit)	= Open Circuit : ≥ 200 KΩ impedance between ECU pin and load -	Battery voltage Battery voltage Ignition synchronized Engine speed Difference between new and old ignition counter ensuring that all cylinder were fired at least once Basic enable conditions met	> 10.9 V < 655.34 V = TRUE - > 1400 rpm > 9 counts = see sheet enable tables -	0,4 sec continuous	2 Trips
	P2316	Diagnoses the Ignition Coil "E" low side driver circuit for circuit high faults.	Voltage high during driver on state (indicates short-to-power)	= Short to power: ≤ 0.5 Ω impedance between signal and controller power -	Battery voltage Battery voltage Ignition synchronized Engine speed Difference between new and old ignition counter ensuring that all cylinder were fired at least once Basic enable conditions met	> 10.9 V < 655.34 V = TRUE - > 1400 rpm > 9 counts = see sheet enable tables -	0,4 sec continuous	2 Trips
	P2315	Diagnoses the Ignition Coil "E" low side driver circuit for circuit low faults.	Voltage low during driver off state (indicates short-to-ground)	= Short to ground: ≤ 0.5 Ω impedance between signal and controller ground -	Battery voltage Battery voltage Ignition synchronized Engine speed Difference between new and old ignition counter ensuring that all cylinder were fired at least once Basic enable conditions met	> 10.9 V < 655.34 V = TRUE - > 1400 rpm > 9 counts = see sheet enable tables -	0,4 sec continuous	2 Trips
	P0356	Diagnoses the Ignition Coil "E" Primary low side driver circuit for open circuit faults.	Voltage low during driver off state (indicates open circuit)	= Open Circuit : ≥ 200 KΩ impedance between ECU pin and load -	Battery voltage Battery voltage Ignition synchronized Engine speed Difference between new and old ignition counter ensuring that all cylinder were fired at least once Basic enable conditions met	> 10.9 V < 655.34 V = TRUE - > 1400 rpm > 9 counts = see sheet enable tables -	0,4 sec continuous	2 Trips
	P2319	Diagnoses the Ignition Coil "G" low side driver circuit for circuit high faults.	Voltage high during driver on state (indicates short-to-power)	= Short to power: ≤ 0.5 Ω impedance between signal and controller power -	Battery voltage Battery voltage Ignition synchronized Engine speed Difference between new and old ignition counter ensuring that all cylinder were fired at least once Basic enable conditions met	> 10.9 V < 655.34 V = TRUE - > 1400 rpm > 9 counts = see sheet enable tables -	0,4 sec continuous	2 Trips
	P2318	Diagnoses the Ignition Coil "G" Primary low side driver circuit for circuit low faults.	Voltage low during driver off state (indicates short-to-ground)	= Short to ground: ≤ 0.5 Ω impedance between signal and controller ground -	Battery voltage Battery voltage Ignition synchronized Engine speed Difference between new and old ignition counter ensuring that all cylinder were fired at least once	> 10.9 V < 655.34 V = TRUE - > 1400 rpm > 9 counts	0,4 sec continuous	2 Trips

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 TEST GROUP: KGMXV04.2088 EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required			MIL Illum.
							Basic enable conditions met	=	see sheet enable tables	-				
	P0357	Diagnoses the Ignition Coil "G" Primary low side driver circuit for open circuit faults.	Voltage low during driver off state (indicates open circuit)	=	Open Circuit : ≥ 200 KΩ impedance between ECU pin and load	-	Battery voltage	>	10.9	V	0,4	sec	continuous	2 Trips
							Battery voltage	<	655.34	V				
							Ignition synchronized	=	TRUE	-				
							Engine speed	>	1400	rpm				
							Difference between new and old ignition counter ensuring that all cylinder were fired at least once	>	9	counts				
							Basic enable conditions met	=	see sheet enable tables	-				
	P2322	Diagnoses the Ignition Coil "F" low side driver circuit for circuit high faults.	Voltage high during driver on state (indicates short-to-power)	=	Short to power: ≤ 0.5 Ω impedance between signal and controller power	-	Battery voltage	>	10.9	V	0,4	sec	continuous	no MIL
							Battery voltage	<	655.34	V				
							Ignition synchronized	=	TRUE	-				
							Engine speed	>	1400	rpm				
							Difference between new and old ignition counter ensuring that all cylinder were fired at least once	>	9	counts				
							Basic enable conditions met	=	see sheet enable tables	-				
	P2321	Diagnoses the Ignition Coil "F" low side driver circuit for circuit low faults.	Voltage low during driver off state (indicates short-to-ground)	=	Short to ground: ≤ 0.5 Ω impedance between signal and controller ground	-	Battery voltage	>	10.9	V	0,4	sec	continuous	2 Trips
							Battery voltage	<	655.34	V				
							Ignition synchronized	=	TRUE	-				
							Engine speed	>	1400	rpm				
							Difference between new and old ignition counter ensuring that all cylinder were fired at least once	>	9	counts				
							Basic enable conditions met	=	see sheet enable tables	-				
	P0358	Diagnoses the Ignition Coil "F" Primary low side driver circuit for open circuit faults.	Voltage low during driver off state (indicates open circuit)	=	Open Circuit : ≥ 200 KΩ impedance between ECU pin and load	-	Battery voltage	>	10.9	V	0,4	sec	continuous	2 Trips
							Battery voltage	<	655.34	V				
							Ignition synchronized	=	TRUE	-				
							Engine speed	>	1400	rpm				
							Difference between new and old ignition counter ensuring that all cylinder were fired at least once	>	9	counts				
							Basic enable conditions met	=	see sheet enable tables	-				
Fuel Injection Valve - Low Side - Cylinder 1	P1248	Diagnoses the Cylinder 1 Injector "A" for short circuit fault between high side and low side of driver circuit	Voltage high during driver ON state (indicates short circuit to battery)	=	Short to power: ≤ 0.5 Ω impedance between ECU pin and injector supply voltage	-	Battery Voltage	>=	10.9	V	2	events	continuous	2 Trips
							Battery Voltage	<=	6553.5	V				
							Basic enable conditions met	=	see sheet enable tables	-				
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
	P029D	Detects mechanical failure open high pressure injection valve 1	Number of misfire counter for cylinder 4	>	100	-	Diagnosis inhibited by statistical function	=	FALSE	-	5	sec	continuous	2 Trips
			Rail pressure control minimum error is set	=	TRUE	-	Engine speed	<	6000	rpm				
							Engine speed	>	1520	rpm				
							relative air charge	<	100.008	%				
							Half engine mode active	=	FALSE	-				
							for time	>=	0.5	sec				
							Electrical failure with high pressure injectors	=	FALSE	-				
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Basic enable conditions met	= see sheet enable tables -		
	P0201	Diagnoses the Cylinder 1 Injector "A" low side of driver circuit for open circuit faults	Voltage low during driver OFF state (indicates open circuit)	= Open Circuit: ≥ 200 K Ω impedance between ECU pin and load -	Battery Voltage Battery Voltage Basic enable conditions met No pending or confirmed DTCs	>= 10.9 V <= 6553.5 V = see sheet enable tables - = see sheet inhibit tables -	2 events continuous	2 Trips
		Diagnoses the Cylinder 1 Injector "A" low side of driver circuit for short circuit faults (short circuit to battery or short circuit to ground)	Voltage low during driver OFF state (indicates short circuit to ground) OR Voltage high during driver ON state (indicates short circuit to battery)	= Short to ground: ≤ 0.5 Ω impedance between ECU pin and ground - = Short to power: ≤ 0.5 Ω impedance between ECU pin and injector supply voltage -	Battery Voltage Battery Voltage Basic enable conditions met No pending or confirmed DTCs	>= 10.9 V <= 6553.5 V = see sheet enable tables - = see sheet inhibit tables -	2 events continuous	2 Trips
Fuel Injection Valve - Low Side - Cylinder 2	P1249	Diagnoses the Cylinder 2 Injector "A" for short circuit fault between high side and low side of driver circuit	Voltage high during driver ON state (indicates short circuit to battery)	= Short to power: ≤ 0.5 Ω impedance between ECU pin and injector supply voltage -	Battery Voltage Battery Voltage Basic enable conditions met No pending or confirmed DTCs	>= 10.9 V <= 6553.5 V = see sheet enable tables - = see sheet inhibit tables -	2 events continuous	2 Trips
	P02A1	Detects mechanical failure open high pressure injection valve 8	Number of misfire counter for cylinder 2 Rail pressure control minimum error is set	> 100 - = TRUE -	Diagnosis inhibited by statistical function Engine speed Engine speed relative air charge Half engine mode active for time Electrical failure with high pressure injectors No pending or confirmed DTCs Basic enable conditions met	= FALSE - < 6000 rpm > 1520 rpm < 100.008 % = FALSE - >= 0.5 sec = FALSE - = see sheet inhibit tables - = see sheet enable tables -	5 sec continuous	2 Trips
	P0202	Diagnoses the Cylinder 2 Injector "A" low side of driver circuit for open circuit faults	Voltage low during driver OFF state (indicates open circuit)	= Open Circuit: ≥ 200 K Ω impedance between ECU pin and load -	Battery Voltage Battery Voltage Basic enable conditions met No pending or confirmed DTCs	>= 10.9 V <= 6553.5 V = see sheet enable tables - = see sheet inhibit tables -	2 events continuous	2 Trips
		Diagnoses the Cylinder 2 Injector "A" low side of driver circuit for short circuit faults (short circuit to battery or short circuit to ground)	Voltage low during driver OFF state (indicates short circuit to ground) OR Voltage high during driver ON state (indicates short circuit to battery)	= Short to ground: ≤ 0.5 Ω impedance between ECU pin and ground - = Short to power: ≤ 0.5 Ω impedance between ECU pin and injector supply voltage -	Battery Voltage Battery Voltage Basic enable conditions met No pending or confirmed DTCs	>= 10.9 V <= 6553.5 V = see sheet enable tables - = see sheet inhibit tables -	2 events continuous	2 Trips
Fuel Injection Valve - Low Side - Cylinder 3	P124A	Diagnoses the Cylinder 3 Injector "A" for short circuit fault between high side and low side of driver circuit	Voltage high during driver ON state (indicates short circuit to battery)	= Short to power: ≤ 0.5 Ω impedance between ECU pin and injector supply voltage -	Battery Voltage Battery Voltage Basic enable conditions met	>= 10.9 V <= 6553.5 V = see sheet enable tables -	2 events continuous	2 Trips

DIAGNOSTIC SUMMARY TABLES -- ECM OBD GROUP: KGMXOBDG07 — TEST GROUP: KGMXV04.2088 — EMISSIONS STDS: CAL--ULEV125, FED--BIN125								
Component / System	**Fault Code**	**Monitor Strategy Description**	**Malfunction Criteria**	**Threshold Value**	**Secondary Parameters**	**Enable Conditions**	**Time Required**	**MIL Illum.**
					No pending or confirmed DTCs	= see sheet inhibit tables -		
	P02A5	Detects mechanical failure open high pressure injection valve 4	Number of misfire counter for cylinder 3 Rail pressure control minimum error is set	> 100 - = TRUE -	Diagnosis inhibited by statistical function Engine speed Engine speed relative air charge Half engine mode active for time Electrical failure with high pressure injectors No pending or confirmed DTCs Basic enable conditions met	= FALSE - < 6000 rpm > 1520 rpm < 100.008 % = FALSE - >= 0.5 sec = FALSE - = see sheet inhibit tables - = see sheet enable tables -	5 sec continuous	2 Trips
	P0203	Diagnoses the Cylinder 3 Injector "A" low side of driver circuit for open circuit faults	Voltage low during driver OFF state (indicates open circuit)	= Open Circuit: ≥ 200 K Ω impedance between ECU pin and load -	Battery Voltage Battery Voltage Basic enable conditions met No pending or confirmed DTCs	>= 10.9 V <= 6553.5 V = see sheet enable tables - = see sheet inhibit tables -	2 events continuous	2 Trips
		Diagnoses the Cylinder 3 Injector "A" low side of driver circuit for short circuit faults (short circuit to battery or short circuit to ground)	Voltage low during driver OFF state (indicates short circuit to ground) OR Voltage high during driver ON state (indicates short circuit to battery)	= Short to ground: ≤ 0.5 Ω impedance between ECU pin and ground - = Short to power: ≤ 0.5 Ω impedance between ECU pin and injector supply voltage -	Battery Voltage Battery Voltage Basic enable conditions met No pending or confirmed DTCs	>= 10.9 V <= 6553.5 V = see sheet enable tables - = see sheet inhibit tables -	2 events continuous	2 Trips
Fuel Injection Valve - Low Side - Cylinder 4	P124B	Diagnoses the Cylinder 4 Injector "A" for short circuit fault between high side and low side of driver circuit	Voltage high during driver ON state (indicates short circuit to battery)	= Short to power: ≤ 0.5 Ω impedance between ECU pin and injector supply voltage -	Battery Voltage Battery Voltage Basic enable conditions met No pending or confirmed DTCs	>= 10.9 V <= 6553.5 V = see sheet enable tables - = see sheet inhibit tables -	2 events continuous	2 Trips
	P02A9	Detects mechanical failure open high pressure injection valve 3	Number of misfire counter for cylinder 4 Rail pressure control minimum error is set	> 100 - = TRUE -	Diagnosis inhibited by statistical function Engine speed Engine speed relative air charge Half engine mode active for time Electrical failure with high pressure injectors No pending or confirmed DTCs Basic enable conditions met	= FALSE - < 6000 rpm > 1520 rpm < 100.008 % = FALSE - >= 0.5 sec = FALSE - = see sheet inhibit tables - = see sheet enable tables -	5 sec continuous	2 Trips
	P0204	Diagnoses the Cylinder 4 Injector "A" low side of driver circuit for open circuit faults	Voltage low during driver OFF state (indicates open circuit)	= Open Circuit: ≥ 200 K Ω impedance between ECU pin and load -	Battery Voltage Battery Voltage Basic enable conditions met No pending or confirmed DTCs	>= 10.9 V <= 6553.5 V = see sheet enable tables - = see sheet inhibit tables -	2 events continuous	2 Trips
		Diagnoses the Cylinder 4 Injector "A" low side of driver circuit for short circuit faults (short circuit to battery or short circuit to ground)	Voltage low during driver OFF state (indicates short circuit to ground) OR	= Short to ground: ≤ 0.5 Ω impedance between ECU pin and ground -	Battery Voltage Battery Voltage	>= 10.9 V <= 6553.5 V	2 events continuous	2 Trips

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
			Voltage high during driver ON state (indicates short circuit to battery)	= Short to power: ≤ 0.5 Ω impedance between ECU pin and injector supply voltage -	Basic enable conditions met No pending or confirmed DTCs	= see sheet enable tables - = see sheet inhibit tables -		
Fuel Injection Valve - Low Side - Cylinder 5	P124C	Diagnoses the Cylinder 5 Injector "A" for short circuit fault between high side and low side of driver circuit	Voltage high during driver ON state (indicates short circuit to battery)	= Short to power: ≤ 0.5 Ω impedance between ECU pin and injector supply voltage -	Battery Voltage and Battery Voltage and Basic enable conditions met and No pending or confirmed DTCs	>= 10.9 V <= 6553.5 V = see sheet enable tables - = see sheet inhibit tables -	2 events continuous	2 Trips
	P02AD	Detects mechanical failure open high pressure injection valve 2	Number of misfire counter for cylinder 5 Rail pressure control minimum error is set	> 100 - = TRUE -	Diagnosis inhibited by statistical function Engine speed Engine speed relative air charge Half engine mode active for time Electrical failure with high pressure injectors No pending or confirmed DTCs Basic enable conditions met	= FALSE - < 6000 rpm > 1520 rpm < 100.008 % = FALSE - >= 0.5 sec = FALSE - = see sheet inhibit tables - = see sheet enable tables -	5 sec continuous	2 Trips
	P0205	Diagnoses the Cylinder 5 Injector "A" low side of driver circuit for open circuit faults.	Voltage low during driver OFF state (indicates open circuit)	= Open Circuit: ≥ 200 K Ω impedance between ECU pin and load -	Battery Voltage Battery Voltage Basic enable conditions met No pending or confirmed DTCs	>= 10.9 V <= 6553.5 V = see sheet enable tables - = see sheet inhibit tables -	2 events continuous	2 Trips
		Diagnoses the Cylinder 5 Injector "A" low side of driver circuit for short circuit faults (short circuit to battery or short circuit to ground)	Voltage low during driver OFF state (indicates short circuit to ground) OR Voltage high during driver ON state (indicates short circuit to battery)	= Short to ground: ≤ 0.5 Ω impedance between ECU pin and ground - = Short to power: ≤ 0.5 Ω impedance between ECU pin and injector supply voltage -	Battery Voltage Battery Voltage Basic enable conditions met No pending or confirmed DTCs	>= 10.9 V <= 6553.5 V = see sheet enable tables - = see sheet inhibit tables -	2 events continuous	2 Trips
Fuel Injection Valve - Low Side - Cylinder 6	P124D	Diagnoses the Cylinder 6 Injector "A" for short circuit fault between high side and low side of driver circuit	Voltage high during driver ON state (indicates short circuit to battery)	= Short to power: ≤ 0.5 Ω impedance between ECU pin and injector supply voltage -	Battery Voltage Battery Voltage Basic enable conditions met No pending or confirmed DTCs	>= 10.9 V <= 6553.5 V = see sheet enable tables - = see sheet inhibit tables -	2 events continuous	2 Trips
	P02B1	Detects mechanical failure open high pressure injection valve 5	Number of misfire counter for cylinder 6 Rail pressure control minimum error is set	> 100 - = TRUE -	Diagnosis inhibited by statistical function Engine speed Engine speed relative air charge Half engine mode active for time Electrical failure with high pressure injectors No pending or confirmed DTCs Basic enable conditions met	= FALSE - < 6000 rpm > 1520 rpm < 100.008 % = FALSE - >= 0.5 sec = FALSE - = see sheet inhibit tables - = see sheet enable tables -	5 sec continuous	2 Trips

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
	P0206	Diagnoses the Cylinder 6 Injector "A" low side of driver circuit for open circuit faults	Voltage low during driver OFF state (indicates open circuit)	= Open Circuit: ≥ 200 K Ω impedance between ECU pin and load -	Battery Voltage Battery Voltage Basic enable conditions met No pending or confirmed DTCs	>= 10.9 V <= 6553.5 V = see sheet enable tables - = see sheet inhibit tables -	2 events continuous	2 Trips
		Diagnoses the Cylinder 6 Injector "A" low side of driver circuit for short circuit faults (short circuit to battery or short circuit to ground)	Voltage low during driver OFF state (indicates short circuit to ground) OR Voltage high during driver ON state (indicates short circuit to battery)	= Short to ground: ≤ 0.5 Ω impedance between ECU pin and ground - = Short to power: ≤ 0.5 Ω impedance between ECU pin and injector supply voltage -	Battery Voltage Battery Voltage Basic enable conditions met No pending or confirmed DTCs	>= 10.9 V <= 6553.5 V = see sheet enable tables - = see sheet inhibit tables -	2 events continuous	2 Trips
Fuel Injection Valve - Low Side - Cylinder 7	P124E	Diagnoses the Cylinder 7 Injector "A" for short circuit fault between high side and low side of driver circuit	Voltage high during driver ON state (indicates short circuit to battery)	= Short to power: ≤ 0.5 Ω impedance between ECU pin and injector supply voltage -	Battery Voltage Battery Voltage Basic enable conditions met No pending or confirmed DTCs	>= 10.9 V <= 6553.5 V = see sheet enable tables - = see sheet inhibit tables -	2 events continuous	2 Trips
	P02B5	Detects mechanical failure open high pressure injection valve 7	Number of misfire counter for cylinder 7 Rail pressure control minimum error is set	> 100 - = TRUE -	Diagnosis inhibited by statistical function Engine speed Engine speed relative air charge Half engine mode active for time Electrical failure with high pressure injectors No pending or confirmed DTCs Basic enable conditions met	= FALSE - < 6000 rpm > 1520 rpm < 100.008 % = FALSE - >= 0.5 sec = FALSE - = see sheet inhibit tables - = see sheet enable tables -	5 sec continuous	2 Trips
	P0207	Diagnoses the Cylinder 7 Injector "A" low side of driver circuit for open circuit faults	Voltage low during driver OFF state (indicates open circuit)	= Open Circuit: ≥ 200 K Ω impedance between ECU pin and load -	Battery Voltage Battery Voltage Basic enable conditions met No pending or confirmed DTCs	>= 10.9 V <= 6553.5 V = see sheet enable tables - = see sheet inhibit tables -	2 events continuous	2 Trips
		Diagnoses the Cylinder 7 Injector "A" low side of driver circuit for short circuit faults (short circuit to battery or short circuit to ground)	Voltage low during driver OFF state (indicates short circuit to ground) OR Voltage high during driver ON state (indicates short circuit to battery)	= Short to ground: ≤ 0.5 Ω impedance between ECU pin and ground - = Short to power: ≤ 0.5 Ω impedance between ECU pin and injector supply voltage -	Battery Voltage Battery Voltage Basic enable conditions met No pending or confirmed DTCs	>= 10.9 V <= 6553.5 V = see sheet enable tables - = see sheet inhibit tables -	2 events continuous	2 Trips
Fuel Injection Valve - Low Side - Cylinder 8	P124F	Diagnoses the Cylinder 8 Injector "A" for short circuit fault between high side and low side of driver circuit	Voltage high during driver ON state (indicates short circuit to battery)	= Short to power: ≤ 0.5 Ω impedance between ECU pin and injector supply voltage -	Battery Voltage Battery Voltage Basic enable conditions met No pending or confirmed DTCs	>= 10.9 V <= 6553.5 V = see sheet enable tables - = see sheet inhibit tables -	2 events continuous	2 Trips

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
	P02B9	Detects mechanical failure open high pressure injection valve 6	Number of misfire counter for cylinder 8 Rail pressure control minimum error is set	> 100 - = TRUE -	Diagnosis inhibited by statistical function Engine speed Engine speed relative air charge Half engine mode active for time Electrical failure with high pressure injectors No pending or confirmed DTCs Basic enable conditions met	= FALSE - < 6000 rpm > 1520 rpm < 100.008 % = FALSE - >= 0.5 sec = FALSE - = see sheet inhibit tables - = see sheet enable tables -	5 sec continuous	2 Trips
	P0208	Diagnoses the Cylinder 8 Injector "A" low side of driver circuit for open circuit faults	Voltage low during driver OFF state (indicates open circuit)	= Open Circuit: ≥ 200 K Ω impedance between ECU pin and load -	Battery Voltage Battery Voltage Basic enable conditions met No pending or confirmed DTCs	>= 10.9 V <= 6553.5 V = see sheet enable tables - = see sheet inhibit tables -	2 events continuous	2 Trips
		Diagnoses the Cylinder 8 Injector "A" low side of driver circuit for short circuit faults (short circuit to battery or short circuit to ground)	Voltage low during driver OFF state (indicates short circuit to ground) OR Voltage high during driver ON state (indicates short circuit to battery)	= Short to ground: ≤ 0.5 Ω impedance between ECU pin and ground - = Short to power: ≤ 0.5 Ω impedance between ECU pin and injector supply voltage -	Battery Voltage Battery Voltage Basic enable conditions met No pending or confirmed DTCs	>= 10.9 V <= 6553.5 V = see sheet enable tables - = see sheet inhibit tables -	2 events continuous	2 Trips
Fuel Injection Valve - High Side - Cylinder 1	P2146	Diagnoses the Cylinder 1 Injector "A" for short circuit (short circuit to battery or short circuit to ground) at high side of the driver circuit	Voltage low during driver OFF state (indicates short circuit to ground) OR Voltage high during driver ON state (indicates short circuit to battery)	= Short to ground: ≤ 0.5 Ω impedance between ECU pin and ground - = Short to power: ≤ 0.5 Ω impedance between ECU pin and injector supply voltage -	Battery Voltage Battery Voltage Basic enable conditions met No pending or confirmed DTCs	>= 10.9 V <= 6553.5 V = see sheet enable tables - = see sheet inhibit tables -	2 events continuous	2 Trips
Fuel Injection Valve - High Side - Cylinder 2	P2149	Diagnoses the Cylinder 2 Injector "B" for short circuit (short circuit to battery or short circuit to ground) at high side of the driver circuit	Voltage low during driver OFF state (indicates short circuit to ground) OR Voltage high during driver ON state (indicates short circuit to battery)	= Short to ground: ≤ 0.5 Ω impedance between ECU pin and ground - = Short to power: ≤ 0.5 Ω impedance between ECU pin and injector supply voltage -	Battery Voltage Battery Voltage Basic enable conditions met No pending or confirmed DTCs	>= 10.9 V <= 6553.5 V = see sheet enable tables - = see sheet inhibit tables -	2 events continuous	2 Trips
Fuel Injection Valve - High Side - Cylinder 3	P2152	Diagnoses the Cylinder 3 Injector "C" for short circuit (short circuit to battery or short circuit to ground) at high side of the driver circuit	Voltage low during driver OFF state (indicates short circuit to ground) OR Voltage high during driver ON state (indicates short circuit to battery)	= Short to ground: ≤ 0.5 Ω impedance between ECU pin and ground - = Short to power: ≤ 0.5 Ω impedance between ECU pin and injector supply voltage -	Battery Voltage Battery Voltage Basic enable conditions met No pending or confirmed DTCs	>= 10.9 V <= 6553.5 V = see sheet enable tables - = see sheet inhibit tables -	2 events continuous	2 Trips
Fuel Injection Valve - High Side - Cylinder 4	P2155	Diagnoses the Cylinder 4 Injector "D" for short circuit (short circuit to battery or short circuit to ground) at high side of the driver circuit	Voltage low during driver OFF state (indicates short circuit to ground) OR	= Short to ground: ≤ 0.5 Ω impedance between ECU pin and ground -	Battery Voltage Battery Voltage	>= 10.9 V <= 6553.5 V	2 events continuous	2 Trips

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
			Voltage high during driver ON state (indicates short circuit to battery)	= Short to power: ≤ 0.5 Ω impedance between ECU pin and injector supply voltage -	Basic enable conditions met	= see sheet enable tables -		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
Fuel Injection Valve - High Side - Cylinder 5	P216A	Diagnoses the Cylinder 5 Injector "E" for short circuit (short circuit to battery or short circuit to ground) at high side of the driver circuit	Voltage low during driver OFF state (indicates short circuit to ground)	= Short to ground: ≤ 0.5 Ω impedance between ECU pin and ground -	Battery Voltage	>= 10.9 V	2 events continuous	2 Trips
			OR		Battery Voltage	<= 6553.5 V		
			Voltage high during driver ON state (indicates short circuit to battery)	= Short to power: ≤ 0.5 Ω impedance between ECU pin and injector supply voltage -	Basic enable conditions met	= see sheet enable tables -		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
Fuel Injection Valve - High Side - Cylinder 6	P216D	Diagnoses the Cylinder 6 Injector "F" for short circuit (short circuit to battery or short circuit to ground) at high side of the driver circuit	Voltage low during driver OFF state (indicates short circuit to ground)	= Short to ground: ≤ 0.5 Ω impedance between ECU pin and ground -	Battery Voltage	>= 10.9 V	2 events continuous	2 Trips
			OR		Battery Voltage	<= 6553.5 V		
			Voltage high during driver ON state (indicates short circuit to battery)	= Short to power: ≤ 0.5 Ω impedance between ECU pin and injector supply voltage -	Basic enable conditions met	= see sheet enable tables -		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
Fuel Injection Valve - High Side - Cylinder 7	P217A	Diagnoses the Cylinder 7 Injector "G" for short circuit (short circuit to battery or short circuit to ground) at high side of the driver circuit	Voltage low during driver OFF state (indicates short circuit to ground)	= Short to ground: ≤ 0.5 Ω impedance between ECU pin and ground -	Battery Voltage	>= 10.9 V	2 events continuous	2 Trips
			OR		Battery Voltage	<= 6553.5 V		
			Voltage high during driver ON state (indicates short circuit to battery)	= Short to power: ≤ 0.5 Ω impedance between ECU pin and injector supply voltage -	Basic enable conditions met	= see sheet enable tables -		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
Fuel Injection Valve - High Side - Cylinder 8	P217D	Diagnoses the Cylinder 8 Injector "H" for short circuit (short circuit to battery or short circuit to ground) at high side of the driver circuit	Voltage low during driver OFF state (indicates short circuit to ground)	= Short to ground: ≤ 0.5 Ω impedance between ECU pin and ground -	Battery Voltage	>= 10.9 V	2 events continuous	2 Trips
			OR		Battery Voltage	<= 6553.5 V		
			Voltage high during driver ON state (indicates short circuit to battery)	= Short to power: ≤ 0.5 Ω impedance between ECU pin and injector supply voltage -	Basic enable conditions met	= see sheet enable tables -		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
Fuel Pressure Regulator Control Circuit - High Side - B1	P0089	**Path 1a:** Plausibility check of High Pressure fuel system where controller output is compared with maximum threshold for calibrated period of time	Filtered value of the High pressure controller output	> 5.75 MPa	**Common Conditions**		10 sec continuous	2 Trips
					Conditions for Plausibility check of Fuel supply system			
					(			
					Airbag is activated	= FALSE -		
					Rail pressure sensor voltage is not plausible	= FALSE -		
					Battery voltage	<= 655.34 V		
					Mean value of effective relative volumetric injected fuel mass	>= 7.734 %		
					Mean value of effective relative volumetric injected fuel mass	<= 3071.953 %		
					Initial fueling mode is active	= FALSE -		
					)			
					Time counter at end of start	>= 7 sec		
					Conditions for reset of high-pressure regulation	= FALSE -		
					(			
					(			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 TEST GROUP: KGMXV04.2088 EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					(			
					(			
					Actual number of cylinders with injection cut-off	< 8 -		
					Desired number of cylinders with injection cut-off	< 8 -		
					)			
					OR			
					End of start is reached	= FALSE -		
					)			
					OR			
					Difference between the actual rail pressure and filtered rail pressure setpoint (A+B) where in:	> (A+B) MPa		
					(A) rail pressure offset during fuel cutoff for activation demand control	= 1 MPa		
					(B) maximum difference between actual rail pressure and set rail pressure for deactivation of MSV if fuel cutt off is active	= 0 MPa		
					)			
					(			
					(			
					High pressure pump is active	= TRUE -		
					(			
					Engine is in running state	= TRUE -		
					OR			
					Crankshaft signal is detected	= TRUE -		
					)			
					for time	= 0.04 sec		
					)			
					OR			
					High pressure pump is not active	= FALSE -		
					End of start is reached	= TRUE -		
					)			
					(			
					Start of injection enabled	= TRUE -		
					(			
					Engine start is in pre-injection mode	= TRUE -		
					Injection counter (A+B) where in:	>= (A+B) -		
					(A) Number of injections for enabling high-pressure controller	= 2 -		
					(B) Number of cylinders	= 8 -		
					OR			
					Engine start is not in pre-injection mode	= FALSE -		
					Injection counter	>= 2 -		
					)			
					)			
					(			
					Engine state of synchronisation for rail pressure control activation	>= 30 -		
					(			
					Engine is in running state	= TRUE -		
					OR			
					Crankshaft signal is detected	= TRUE -		
					)			
					for time	= 0.04 sec		
					)			
					)			
					for time	= 7 sec		
					No pending or confirmed DTCs	= see sheet inhibit table -		
					Basic enable conditions met	= see sheet enable table -		
		Path 1b: Plausibility check of High Pressure fuel system where controller output is compared with maximum threshold for calibrated period of time	Filtered value of the High pressure controller output pressure	> 5.75 MPa	**Common Conditions**		6 sec continuous	2 Trips
					Fuel tank is empty or reserve	= TRUE -		
		Path 2: Plausibility check of High Pressure fuel system where controller output is compared with minimum threshold for calibrated period of time	Filtered value of the High pressure controller output pressure	< -5.75 MPa	Conditions for Plausibility check of Fuel supply system		10 sec continuous	2 Trips
					(			
					Airbag is activated	= FALSE -		
					Rail pressure sensor voltage is not plausible	= FALSE -		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Battery voltage	<= 655.34 V		
					Mean value of effective relative volumetric injected fuel mass	>= 7.734 %		
					Mean value of effective relative volumetric injected fuel mass	<= 3071.953 %		
					Initial fueling mode is active	= FALSE -		
					)			
					Time counter at end of start	>= 7 sec		
					Conditions for reset of high-pressure regulation	= FALSE -		
					(			
					(			
					(			
					(			
					Actual number of cylinders with injection cut-off	< 8 -		
					Desired number of cylinders with injection cut-off	< 8 -		
					)			
					OR			
					End of start is reached	= FALSE -		
					)			
					OR			
					Difference between the actual rail pressure and filtered rail pressure setpoint (A+B) where in:	> (A+B) MPa		
					(A) rail pressure offset during fuel cutoff for activation demand control	= 1 MPa		
					(B) maximum difference between actual rail pressure and set rail pressure for deactivation of MSV if fuel cutt off is active	= 0 MPa		
					)			
					(			
					(			
					High pressure pump is active	= TRUE -		
					(			
					Engine is in running state	= TRUE -		
					OR			
					Crankshaft signal detected	= TRUE -		
					)			
					for time	= 0.04 sec		
					)			
					OR			
					High pressure pump not active	= FALSE -		
					End of start is reached	= TRUE -		
					)			
					(			
					Start of injection is enabled	= TRUE -		
					(			
					Engine start is in pre-injection mode	= TRUE -		
					Injection counter (A+B) where in:	>= (A+B) -		
					(A) Number of injections for enabling high-pressure controller	= 2 -		
					(B) Number of cylinders	= 8 -		
					OR			
					Engine start is not in pre-injection mode	= FALSE -		
					Injection counter	>= 2 -		
					)			
					)			
					(			
					Engine state of synchronisation for rail pressure control activation	>= 30 -		
					(			
					Engine is in running state	= TRUE -		
					OR			
					Crankshaft signal is detected	= TRUE -		
					)			
					for time	= 0.04 sec		
					)			
					)			
					for time	= 7 sec		
					No pending or confirmed DTCs	= see sheet inhibit table -		
					Basic enable conditions met	= see sheet enable table -		
Fuel Pressure Regulator Control Circuit - High Side - B1	P228D	Detects if High Pressure fuel system control deviation of rail pressure is lesser than maximum threshold for calibrated period of time	Filtered value of rail pressure control deviation	< -3 MPa	Conditions for Plausibility check of Fuel supply system	= TRUE -	7 sec	2 Trips
					(			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					Airbag is activated	=	FALSE	-		
					Rail pressure sensor voltage is not plausible	=	FALSE	-		
					Battery voltage	<=	655.34	V		
					Mean value of effective relative volumetric injected fuel mass	>=	7.734	%		
					Mean value of effective relative volumetric injected fuel mass	<=	3071.953	%		
					Initial fueling mode is active	=	FALSE	-		
					)					
					Time counter at end of start	>=	7	sec		
					Conditions for reset of high-pressure regulation	=	FALSE	-		
					(					
					(					
					(					
					(					
					Actual number of cylinders with injection cut-off	<	8	-		
					Desired number of cylinders with injection cut-off	<	8	-		
					)					
					OR					
					End of start is reached	=	FALSE	-		
					)					
					OR					
					Difference between the actual rail pressure and filtered rail pressure setpoint (A+B) where in:	>	(A+B)	MPa		
						=	1	MPa		
					(A) rail pressure offset during fuel cutoff for activation demand control					
					(B) maximum difference between actual rail pressure and set rail pressure for deactivation of MSV if fuel cutt off is active	=	0	MPa		
					)					
					(					
					(					
					High pressure pump is active	=	TRUE	-		
					(					
					Engine is in running state	=	TRUE	-		
					OR					
					Crankshaft signal is detected	=	TRUE	-		
					)					
					for time	=	0.04	sec		
					)					
					OR					
					High pressure pump is not active	=	FALSE	-		
					End of start is reached	=	TRUE	-		
					)					
					(					
					Start of injection enabled	=	TRUE	-		
					(					
					(					
					Engine start is in pre-injection mode	=	TRUE	-		
					Injection counter	>=	(A+B)	-		
					(A+B) where in:					
						=	2	-		
					(A) Number of injections for enabling high-pressure controller					
					(B) Number of cylinders	=	8	-		
					)					
					OR					
					(					
					Engine start is not in pre-injection mode	=	FALSE	-		
					Injection counter	>=	2	-		
					)					
					)					
					)					
					(					
					Engine state of synchronisation for rail pressure control activation	>=	30	-		
					(					
					Engine is in running state	=	TRUE	-		
					OR					
					Crankshaft signal is detected	=	TRUE	-		
					)					
					for time	=	0.04	sec		
					)					
					)					
					for time	=	7	sec		
					High pressure diagnosis disabled due to CSERS diagnosis	=	FALSE	-		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					(			
					Catalyst heating activated	= FALSE -		
					OR			
					Catalyst heating request by cold engine	= FALSE -		
					OR			
					Time counter at end of start	< 2 sec		
					OR			
					Plausibility check fuel supply system active	= FALSE -		
					OR			
					(			
					Rail pressure setpoint	>= 36 MPa		
					OR			
					Rail pressure setpoint	<= 6 MPa		
					OR			
					Absolute of difference between rail pressure set point and its filtered value	>= 15 MPa		
					OR			
					Engine speed	<= 0 rpm		
					Coolant temperature at engine output	<= -3549.94 deg C		
					)			
					OR			
					High pressure regulation is reset	= TRUE -		
					)			
					No pending or confirmed DTCs	= see sheet inhibit table -		
					Basic enable conditions met	= see sheet enable table -		
	P228C	**Path 1:** Detects if High Pressure fuel system control deviation of rail pressure is greater than minimum threshold for calibrated period of time	Filtered value of rail pressure control deviation	> 3 MPa	**Common conditions**		5 sec	2 Trips
					Conditions for Plausibility check of Fuel supply system	= TRUE -		
					(			
					Airbag is activated	= FALSE -		
					Rail pressure sensor voltage is not plausible	= FALSE -		
					Battery voltage	<= 655.34 V		
					Mean value of effective relative volumetric injected fuel mass	>= 7.734 %		
					Mean value of effective relative volumetric injected fuel mass	<= 3071.953 %		
					Initial fueling mode is active	= FALSE -		
					)			
					Time counter at end of start	>= 7 sec		
					Conditions for reset of high-pressure regulation	= FALSE -		
					(			
					(			
					(			
					(			
					Actual number of cylinders with injection cut-off	< 8 -		
					Desired number of cylinders with injection cut-off	< 8 -		
					)			
					OR			
					End of start is reached	= FALSE -		
					)			
					OR			
					Difference between the actual rail pressure and filtered rail pressure setpoint (A+B) where in:	> (A+B) MPa		
					(A) rail pressure offset during fuel cutoff for activation demand control	= 1 MPa		
					(B) maximum difference between actual rail pressure and set rail pressure for deactivation of MSV if fuel cutt off is active	= 0 MPa		
					)			
					(			
					(			
					High pressure pump is active	= TRUE -		
					(			
					Engine is in running state	= TRUE -		
					OR			
					Crankshaft signal is detected	= TRUE -		
					)			
					for time	= 0.04 sec		
					)			
					OR			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required		MIL Illum.
							High pressure pump is not active	=	FALSE	-			
							End of start is reached	=	TRUE	-			
							)						
							(						
							Start of injection enabled	=	TRUE	-			
							(						
							(						
							Engine start is in pre-injection mode	=	TRUE	-			
							Injection counter	>=	(A+B)	-			
							(A+B) where in:						
							(A) Number of injections for enabling high-pressure controller	=	2	-			
							(B) Number of cylinders	=	8	-			
							)						
							OR						
							(						
							Engine start is not in pre-injection mode	=	FALSE	-			
							Injection counter	>=	2	-			
							)						
							)						
							)						
							(						
							Engine state of synchronisation for rail pressure control activation	>=	30	-			
							(						
							Engine is in running state	=	TRUE	-			
							OR						
							Crankshaft signal is detected	=	TRUE	-			
							)						
							for time	=	0.04	sec			
							)						
							)						
							for time	=	7	sec			
							High pressure diagnosis disabled due to CSERS diagnosis	=	FALSE	-			
							(						
							Catalyst heating activated	=	FALSE	-			
							OR						
							Catalyst heating request by cold engine	=	FALSE	-			
							OR						
							Time counter at end of start	<	2	sec			
							OR						
							Plausibility check fuel supply system active	=	FALSE	-			
							OR						
							(						
							Rail pressure setpoint	>=	36	MPa			
							OR						
							Rail pressure setpoint	<=	6	MPa			
							OR						
							Absolute of difference between rail pressure set point and its filtered value	>=	15	MPa			
							OR						
							Engine speed	<=	0	rpm			
							Coolant temperature at engine output	<=	-3549.94	deg C			
							)						
							OR						
							High pressure regulation is reset	=	TRUE	-			
							)						
							Fuel tank is empty or reserve	=	FALSE	-			
							No pending or confirmed DTCs	=	see sheet inhibit table	-			
							Basic enable conditions met	=	see sheet enable table	-			
	P228C	**Path 2:** Detects if High Pressure fuel system control deviation of rail pressure is greater than minimum threshold for calibrated period of time during fuel tank is empty or reserve state	Filtered value of rail pressure control deviation	>	3	MPa	**Common conditions**				5	sec	2 Trips
							Fuel tank is empty or reserve	=	TRUE	-			
	P00C6	Fuel Rail Pressure Too Low - Engine Cranking Bank 1	High pressure start	=	FALSE	-	Engine is in standby state	=	TRUE	-		once per driving cycle	2 Trips
			(				Condition calucation of diagnosis high pressure start is stopped	=	FALSE	-			
			Fuel rail pressure (see Look-Up-Table #P00C6-1)	<	7 to 12	MPa	Engine temperature for diagnosis start with high fuel pressure	<=	142.96	deg C			
			for number of synchronous counts (see Look-Up-Table #P00C6-2)	=	16 to 48	counts	Engine temperature for diagnosis start with high fuel pressure	>	-42.54	deg C			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
			OR				Release condition for all high pressure starts	=	TRUE	-		
			(				(					
			(				(					
			Fuel rail pressure (see Look-Up-Table #P00C6-1)	<	7 to 12	MPa	Engine is in ready state	=	TRUE	-		
			OR				OR					
			Filtered rail pressure	<	1.5	MPa	Engine is in auto stopping state	=	TRUE	-		
			)				OR					
			Engine is running	=	TRUE	-	Injection is not released	=	TRUE	-		
			)									
			for time (see Look-Up-Table #P00C6-3)	=	2 to 6	sec	)					
			OR				Temperature for upper threshold high pressure start	<	142.96	deg C		
			(				Temperature for lowe threshold high pressure start	>=	-42.54	deg C		
			Fuel rail pressure (see Look-Up-Table #P00C6-1)	>=	7 to 12	MPa	Condition disable flow of high pressure pump	=	FALSE	-		
			and				(					
			Filtered rail pressure	<	1.5	MPa	Voltage rail pressure sensor not plausible	=	FALSE	-		
			)				Airbag activated	=	FALSE	-		
			)				and					
							Battery voltage	<=	655.34	V		
							)					
							)					
							Condition hot start	=	FALSE	-		
							(					
							Engine temperature	<	89.96	deg C		
							OR					
							Integrated air mass flow from engine start to maximum value	>	550	g		
							)					
							(					
							(					
							Condition end of start for activation of md structure	=	TRUE	-		
							Condition enable start injection	=	TRUE	-		
							)					
							OR					
							Engine is in ready state	=	TRUE	-		
							)					
							(	=	TRUE	-		
							High pressure start request					
							(					
							Start type from the start coordinator indicates no start	=	TRUE	-		
							OR					
							(					
							Start type from the start coordinator indicates low pressure start	=	FALSE	-		
							Start type from the start coordinator indicates preijections with low pressure start	=	FALSE	-		
							)					
							)					
							)					
							No pending or confirmed DTCs	=	see sheet inhibit tables	-		
							Basic enable conditions met	=	see sheet enable tables	-		
		Monitoring of preinjection with low pressure	Preinjection with low pressure is active	=	FALSE	-	Engine is in standby state	=	TRUE	-		
			(				Condition calcuation of diagnosis high pressure start is stopped	=	FALSE	-		
			Start temperature for the start co-ordinator	>=	-10.54	deg C	Engine temperature for diagnosis start with high fuel pressure	<=	142.96	deg C		
			OR				Engine temperature for diagnosis start with high fuel pressure	>	-42.54	deg C		
			Injection counter	>=	A * B	counts	Release condition for all high pressure starts	=	TRUE	-		
			where	=	0 to 1	cycle	(					
			A: Number of working cycle during preinjection (see Look-Up-Table #P00C6-4)									
			B: Number of cylinder				(					
			OR				Engine is in ready state	=	TRUE	-		
			State of EPM operation mode is in Backup camshaft mode	=	TRUE	-	OR					
			OR				Engine is in auto stopping state	=	TRUE	-		
			Repeated cold start	=	TRUE	-	OR					
			)				Injection is not released	=	TRUE	-		
							)					
							Temperature for upper threshold high pressure start	<	142.96	deg C		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required			MIL Illum.
					Temperature for lowe threshold high pressure start	>=	-42.54	deg C				
					Condition disable flow of high pressure pump	=	FALSE	-				
					(							
					Voltage rail pressure sensor not plausible	=	FALSE	-				
					Airbag activated	=	FALSE	-				
					Battery voltage	<=	655.34	V				
					)							
					)							
					Condition hot start	=	FALSE	-				
					(							
					Engine temperature	<	89.96	deg C				
					OR							
					Integrated air mass flow from engine start to maximum value	>	550	g				
					)							
					(							
					(							
					Condition end of start for activation of md structure	=	TRUE	-				
					Condition enable start injection	=	TRUE	-				
					)							
					OR							
					Engine is in ready state	=	TRUE	-				
					)							
					(	=	TRUE	-				
					High pressure start request							
					(							
					Start type from the start coordinator indicates low pressure start	=	TRUE	-				
					)							
					)							
					No pending or confirmed DTCs	=	see sheet inhibit tables	-				
					Basic enable conditions met	=	see sheet enable tables	-				
Fuel Pressure Regulator Control Circuit - High Side - B1	P10E8	Diagnoses the fuel quantity control valve for short circuit fault between the high side and low side of the driver circuit	Voltage low during driver OFF state (indicates short circuit to ground)	= Short to ground: ≤ 0.5 Ω impedance between ECU pin and ground -	Battery voltage	>=	10.9	V	20	sec	continuous	1 Trip
			OR		Battery voltage	<	655.34	V				
			Voltage high during driver ON state (indicates short circuit to battery)	= Short to power: ≤ 0.5 Ω impedance between ECU pin and injector supply voltage -	Engine speed	>=	80	rpm				
					Basic enable conditions met	=	see sheet enable tables	-				
					No pending or confirmed DTCs	=	see sheet inhibit tables	-				
	P00CA	Diagnoses the fuel quantity control valve for short circuit to battery fault at the high side of the driver circuit	Voltage high during driver ON state (indicates short circuit to battery)	= Short to power: ≤ 0.5 Ω impedance between ECU pin and injector supply voltage -	Battery voltage	>=	10.9	V	20	sec	continuous	1 Trip
					Battery voltage	<	655.34	V				
					Engine speed	>=	80	rpm				
					Basic enable conditions met	=	see sheet enable tables	-				
					No pending or confirmed DTCs	=	see sheet inhibit tables	-				
	P00C9	Diagnoses the fuel quantity control valve for short circuit to ground fault at the high side of the driver circuit	Voltage low during driver OFF state (indicates short circuit to ground)	= Short to ground: ≤ 0.5 Ω impedance between ECU pin and ground -	Battery voltage	>=	10.9	V	20	sec	continuous	1 Trip
					Battery voltage	<	655.34	V				
					Engine speed	>=	80	rpm				
					Basic enable conditions met	=	see sheet enable tables	-				
					No pending or confirmed DTCs	=	see sheet inhibit tables	-				
	P0090	Detects open circuit error of fuel quantity control valve when there is high current flowing through the driver circuit	Voltage low during driver OFF state (indicates open circuit)	= Open Circuit: ≥ 200 K Ω impedance between ECU pin and load -	Battery voltage	>=	10.9	V	20	sec	continuous	no MIL
					Battery voltage	<	655.34	V				
					Engine speed	>=	80	rpm				

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Basic enable conditions met No pending or confirmed DTCs	= see sheet enable tables - = see sheet inhibit tables -		
Fuel Pressure Regulator Control Circuit - Low Side - B1	P0092	Diagnoses the fuel quantity control valve for short circuit to battery fault at the low side of the driver circuit	Voltage high during driver ON state (indicates short circuit to battery)	= Short to power: ≤ 0.5 Ω impedance between ECU pin and injector supply voltage -	Battery voltage Battery voltage Engine speed Basic enable conditions met No pending or confirmed DTCs	>= 10.9 V < 655.34 V >= 80 rpm = see sheet enable tables - = see sheet inhibit tables -	20 sec continuous	1 Trip
	P0091	Diagnoses the fuel quantity control valve for short circuit to ground fault at the low side of the driver circuit	Voltage low during driver OFF state (indicates short circuit to ground)	= Short to ground: ≤ 0.5 Ω impedance between ECU pin and ground -	Battery voltage Battery voltage Engine speed Basic enable conditions met No pending or confirmed DTCs	>= 10.9 V < 655.34 V >= 80 rpm = see sheet enable tables - = see sheet inhibit tables -	20 sec continuous	1 Trip
Fuel Pressure Regulator Control Circuit - High Side - B2	P313A	Diagnoses the fuel quantity control valve for short circuit fault between the high side and low side of the driver circuit	Voltage low during driver OFF state (indicates short circuit to ground) OR Voltage high during driver ON state (indicates short circuit to battery)	= Short to ground: ≤ 0.5 Ω impedance between ECU pin and ground - = Short to power: ≤ 0.5 Ω impedance between ECU pin and injector supply voltage -	Battery voltage Battery voltage Engine speed Basic enable conditions met No pending or confirmed DTCs	>= 10.9 V < 655.34 V >= 80 rpm = see sheet enable tables - = see sheet inhibit tables -	20 sec continuous	1 Trip
	P3139	Diagnoses the fuel quantity control valve for short circuit to battery fault at the high side of the driver circuit	Voltage high during driver ON state (indicates short circuit to battery)	= Short to power: ≤ 0.5 Ω impedance between ECU pin and injector supply voltage -	Battery voltage Battery voltage Engine speed Basic enable conditions met No pending or confirmed DTCs	>= 10.9 V < 655.34 V >= 80 rpm = see sheet enable tables - = see sheet inhibit tables -	20 sec continuous	1 Trip
	P3138	Diagnoses the fuel quantity control valve for short circuit to ground fault at the high side of the driver circuit	Voltage low during driver OFF state (indicates short circuit to ground)	= Short to ground: ≤ 0.5 Ω impedance between ECU pin and ground -	Battery voltage Battery voltage Engine speed Basic enable conditions met No pending or confirmed DTCs	>= 10.9 V < 655.34 V >= 80 rpm = see sheet enable tables - = see sheet inhibit tables -	20 sec continuous	1 Trip
	P2C02	Detects open circuit error of fuel quantity control valve when there is high current flowing through the driver circuit	Voltage low during driver OFF state (indicates open circuit)	= Open Circuit: ≥ 200 K Ω impedance between ECU pin and load -	Battery voltage Battery voltage Engine speed Basic enable conditions met No pending or confirmed DTCs	>= 10.9 V < 655.34 V >= 80 rpm = see sheet enable tables - = see sheet inhibit tables -	20 sec continuous	no MIL

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required			MIL Illum.
Fuel Pressure Regulator Control Circuit - Low Side - B1	P2C04	Diagnoses the fuel quantity control valve for short circuit to battery fault at the low side of the driver circuit	Voltage high during driver ON state (indicates short circuit to battery)	=	Short to power: ≤ 0.5 Ω impedance between ECU pin and injector supply voltage	-	Battery voltage	>=	10.9	V	20	sec	continuous	1 Trip
							Battery voltage	<	655.34	V				
							Engine speed	>=	80	rpm				
							Basic enable conditions met	=	see sheet enable tables	-				
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
	P2C03	Diagnoses the fuel quantity control valve for short circuit to ground fault at the low side of the driver circuit	Voltage low during driver OFF state (indicates short circuit to ground)	=	Short to ground: ≤ 0.5 Ω impedance between ECU pin and ground	-	Battery voltage	>=	10.9	V	20	sec	continuous	1 Trip
							Battery voltage	<	655.34	V				
							Engine speed	>=	80	rpm				
							Basic enable conditions met	=	see sheet enable tables	-				
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
Fuel Pump - FTZM	P12A6	ECM command state for pump does not match feedback value from FTZM_Information_2_S1 signal FTZMSnsdFuelCtlEnblAtv "Fuel Tank Zone Module Sensed Fuel Control Enable Active"	Status of Pre supply pump is not plausible with the status received from the Communication module	=	TRUE	-	Rationality check for Pre-Supply pump diagnosis is active	=	TRUE	-	2	sec	continuous	1 Trip
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enable conditions met	=	see sheet enable tables	-				
	P129F	Commanded pump speed in ECM does not match feedback value from FTZM_Information_8_S1 signal FTZMBrshFPmpSnsdSpd "Fuel Tank Zone Module Brushless Fuel Pump Sensed Speed" - feedback speed too high	Difference between actual Pre Supply Pump speed and Pre Supply Pump speed converted from PWM value	>	200	rpm	Rationality check for Pre-Supply pump diagnosis is active	=	TRUE	-	3	sec	continuous	2 Trips
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enable conditions met	=	see sheet enable tables	-				
		Commanded pump speed in ECM does not match feedback value from FTZM_Information_8_S1 signal FTZMBrshFPmpSnsdSpd "Fuel Tank Zone Module Brushless Fuel Pump Sensed Speed" - feedback speed too low	Difference between Pre Supply Pump speed converted from PWM value and actual Pre Supply Pump speed	>	200	rpm	Rationality check for Pre-Supply pump diagnosis is active	=	TRUE	-	3	sec	continuous	2 Trips
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enable conditions met	=	see sheet enable tables	-				
Fuel Pump - FTZM	P2635	Filtered fuel pressure deviation in the low pressure fuel system is lesser than calibrated threshold for calibrated period of time	Filtered fuel pressure deviation in the low pressure system	<	-50	kPa	Electrical fuel pump operational mode is in closed loop control	=	TRUE	-	15	sec	continuous	2 Trips
							(							
							Fuel flow demand of electrical fuel pump	>=	0.1	l/h				
							Engine is running state	=	TRUE	-				
							Pre-Supply pump is ON	=	TRUE	-				
							)							
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enable conditions met	=	see sheet enable tables	-				
	P2635	Filtered fuel pressure deviation in the low pressure fuel system is greater than calibrated threshold for calibrated period of time	Filtered fuel pressure deviation in the low pressure system	>	50	kPa	Electrical fuel pump operational mode is in closed loop control	=	TRUE	-	15	sec	continuous	2 Trips
							(							
							Fuel flow demand of electrical fuel pump	>=	0.1	l/h				
							Engine is running state	=	TRUE	-				
							Pre-Supply pump is ON	=	TRUE	-				
							)							
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enable conditions met	=	see sheet enable tables	-				

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
	P102B	Monitoring of FTZM fuel pump output for circuits high fault	Fuel Tank Zone Module(FTZM) fuel pump output is shorted to battery	= TRUE -	Ignition ON No pending or confirmed DTCs Basic enabling conditions are met	= TRUE - = see sheet inhibit tables - = see sheet enable tables -	0.5 sec Continuous	2 Trips
	P102A	Monitoring of FTZM fuel pump output for circuits low fault	Fuel Tank Zone Module(FTZM) fuel pump output is shorted to ground	= TRUE -	Ignition ON No pending or confirmed DTCs Basic enabling conditions are met	= TRUE - = see sheet inhibit tables - = see sheet enable tables -	0.5 sec Continuous	2 Trips
	P1029	Monitoring of FTZM fuel pump output for circuits open fault	Fuel Tank Zone Module(FTZM) fuel pump output circuit is opened	= TRUE -	Ignition ON No pending or confirmed DTCs Basic enabling conditions are met	= TRUE - = see sheet inhibit tables - = see sheet enable tables -	0.5 sec Continuous	2 Trips
Camshaft Position Actuator - Intake B1	P2089	Diagnoses the "A" Camshaft Position Actuator Bank 1 low side driver circuit for short circuit to battery faults.	Voltage high during driver on state (indicates short-to-power)	= Short to power: ≤ 0.5 Ω impedance between signal and controller power -	Ignition is ON ECU is in drive state Engine Speed Battery Voltage Battery Voltage No pending or confirmed DTCs Basic enable conditions met	= TRUE - = TRUE - >= 80 rpm > 10.9 V < 25.5 V = see sheet inhibit tables - = see sheet enable tables -	1 sec Continuous	2 Trips
	P2088	Diagnoses the "A" Camshaft Position Actuator Bank 1 low side driver circuit for short circuit to ground faults.	Voltage low during driver off state (indicates short-to-ground)	= Short to ground: ≤ 0.5 Ω impedance between signal and controller ground -	Ignition is ON ECU is in drive state Engine Speed Battery Voltage Battery Voltage No pending or confirmed DTCs Basic enable conditions met	= TRUE - = TRUE - >= 80 rpm > 10.9 V < 25.5 V = see sheet inhibit tables - = see sheet enable tables -	0.2 sec Continuous	2 Trips
	P0010	Diagnoses the "A" Camshaft Position Actuator Bank 1 low side driver circuit for open circuit faults	Voltage low during driver off state (indicates open circuit)	= Open Circuit : ≥ 200 KΩ impedance between ECU pin and load -	Ignition is ON ECU is in drive state Engine Speed Battery Voltage Battery Voltage No pending or confirmed DTCs Basic enable conditions met	= TRUE - = TRUE - >= 80 rpm > 10.9 V < 25.5 V = see sheet inhibit tables - = see sheet enable tables -	1 sec Continuous	2 Trips
Camshaft Position Actuator - Intake B2	P2093	Diagnoses the "A" Camshaft Position Actuator Bank 2 low side driver circuit for short circuit to battery faults.	Voltage high during driver on state (indicates short-to-power)	= Short to power: ≤ 0.5 Ω impedance between signal and controller power -	Ignition is ON ECU is in drive state Engine Speed Battery Voltage Battery Voltage No pending or confirmed DTCs	= TRUE - = TRUE - >= 80 rpm > 10.9 V < 25.5 V = see sheet inhibit tables -	1 sec Continuous	2 Trips

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Basic enable conditions met	= see sheet enable tables -		
	P2092	Diagnoses the "A" Camshaft Position Actuator Bank 2 low side driver circuit for short circuit to ground faults.	Voltage low during driver off state (indicates short-to-ground)	= Short to ground: ≤ 0.5 Ω impedance between signal and controller ground -	Ignition is ON	= TRUE -	0.2 sec Continuous	2 Trips
					ECU is in drive state	= TRUE -		
					Engine Speed	>= 80 rpm		
					Battery Voltage	> 10.9 V		
					Battery Voltage	< 25.5 V		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
	P0020	Diagnoses the "A" Camshaft Position Actuator Bank 2 low side driver circuit for open circuit faults	Voltage low during driver off state (indicates open circuit)	= Open Circuit : ≥ 200 KΩ impedance between ECU pin and load -	Ignition is ON	= TRUE -	1 sec Continuous	2 Trips
					ECU is in drive state	= TRUE -		
					Engine Speed	>= 80 rpm		
					Battery Voltage	> 10.9 V		
					Battery Voltage	< 25.5 V		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
Camshaft Position Actuator - Exhaust B1	P2091	Diagnoses the "B" Camshaft Position Actuator Bank 1 low side driver circuit for short circuit to battery faults.	Voltage high during driver on state (indicates short-to-power)	= Short to power: ≤ 0.5 Ω impedance between signal and controller power -	Ignition is ON	= TRUE -	1 sec Continuous	2 Trips
					ECU is in drive state	= TRUE -		
					Engine Speed	>= 80 rpm		
					Battery Voltage	> 10.9 V		
					Battery Voltage	< 25.5 V		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
	P2090	Diagnoses the "B" Camshaft Position Actuator Bank 1 low side driver circuit for short circuit to ground faults.	Voltage low during driver off state (indicates short-to-ground)	= Short to ground: ≤ 0.5 Ω impedance between signal and controller ground -	Ignition is ON	= TRUE -	0.2 sec Continuous	2 Trips
					ECU is in drive state	= TRUE -		
					Engine Speed	>= 80 rpm		
					Battery Voltage	> 10.9 V		
					Battery Voltage	< 25.5 V		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
	P0013	Diagnoses the "B" Camshaft Position Actuator Bank 1 low side driver circuit for open circuit faults	Voltage low during driver off state (indicates open circuit)	= Open Circuit : ≥ 200 KΩ impedance between ECU pin and load -	Ignition is ON	= TRUE -	1 sec Continuous	2 Trips
					ECU is in drive state	= TRUE -		
					Engine Speed	>= 80 rpm		
					Battery Voltage	> 10.9 V		
					Battery Voltage	< 25.5 V		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
Camshaft Position Actuator - Exhaust B2	P2095	Diagnoses the "B" Camshaft Position Actuator Bank 2 low side driver circuit for short circuit to battery faults.	Voltage high during driver on state (indicates short-to-power)	= Short to power: ≤ 0.5 Ω impedance between signal and controller power -	Ignition is ON	= TRUE -	1 sec Continuous	2 Trips
					ECU is in drive state	= TRUE -		
					Engine Speed	>= 80 rpm		
					Battery Voltage	> 10.9 V		
					Battery Voltage	< 25.5 V		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					No pending or confirmed DTCs Basic enable conditions met	= see sheet inhibit tables - = see sheet enable tables -		
	P2094	Diagnoses the "B" Camshaft Position Actuator Bank 2 low side driver circuit for short circuit to ground faults.	Voltage low during driver off state (indicates short-to-ground)	= Short to ground: ≤ 0.5 Ω impedance between signal and controller ground -	Ignition is ON ECU is in drive state Engine Speed Battery Voltage Battery Voltage No pending or confirmed DTCs Basic enable conditions met	= TRUE - = TRUE - >= 80 rpm > 10.9 V < 25.5 V = see sheet inhibit tables - = see sheet enable tables -	0.2 sec Continuous	2 Trips
	P0023	Diagnoses the "B" Camshaft Position Actuator Bank 2 low side driver circuit for open circuit faults	Voltage low during driver off state (indicates open circuit)	= Open Circuit : ≥ 200 KΩ impedance between ECU pin and load -	Ignition is ON ECU is in drive state Engine Speed Battery Voltage Battery Voltage No pending or confirmed DTCs Basic enable conditions met	= TRUE - = TRUE - >= 80 rpm > 10.9 V < 25.5 V = see sheet inhibit tables - = see sheet enable tables -	1 sec Continuous	2 Trips
Camshaft Position Actuator Park Lock - Intake B1 (Electronic Actuator)	P1011	Inlet camshaft Bank 1 locking position offset check	Absolute angle difference between the actual position and the locking position of inlet camshaft bank1 for number of times	>= 8 degrees > 2 -	Engine is cranking e.g. end of startup has not reached or has reached for time Engine OFF time before cranking was long enough to allow camshaft actuator return in locking position, which is the following condition: Ignition off time (Automatic start is active No of automatic start) Engine speed Difference between desired position phase actuator and locking position of inlet camshaft bank1 Inlet camshaft adaption is performed No pending or confirmed DTCs Basic enable conditions met	<= 1 sec = TRUE - >= 1 sec = TRUE - <= 1 count >= 120 rpm <= 4 degrees = TRUE - = see sheet inhibit tables - = see sheet enable tables -	Once per driving cycle	2 Trips
Camshaft Position Actuator Park Lock - Intake B1 (Electronic Actuator)	P25CC	Diagnoses the Camshaft Lock Pin Actuator Bank 1 low side driver circuit for short circuit to battery faults.	Voltage high during driver on state (indicates short-to-power)	= Short to power: ≤ 0.5 Ω impedance between signal and controller power -	ECU is in drive state Engine Speed Battery Voltage Battery Voltage Basic enable conditions met No pending or confirmed DTCs	= TRUE - >= 80 rpm > 10.9 V < 25.5 V = see sheet enable tables - = see sheet inhibit tables -	1 sec continuous	2 Trips
	P25CB	Diagnoses the Camshaft Lock Pin Actuator Bank 1 low side driver circuit for short circuit to ground faults.	Voltage low during driver off state (indicates short-to-ground)	= Short to ground: ≤ 0.5 Ω impedance between signal and controller -	ECU is in drive state Engine Speed Battery Voltage Battery Voltage Basic enable conditions met No pending or confirmed DTCs	= TRUE - >= 80 rpm > 10.9 V < 25.5 V = see sheet enable tables - = see sheet inhibit tables -	1 sec continuous	2 Trips

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required			MIL Illum.
	P25CA	Diagnoses the Camshaft Lock Pin Actuator Bank 1 low side driver circuit for open circuit faults	Voltage low during driver off state (indicates open circuit)	=	Open Circuit : ≥ 200 KΩ impedance between ECU pin and load	-	ECU is in drive state	=	TRUE	-	1	sec	continuous	2 Trips
							Engine Speed	>=	80	rpm				
							Battery Voltage	>	10.9	V				
							Battery Voltage	<	25.5	V				
							Basic enable conditions met	=	see sheet enable tables	-				
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
Camshaft Position Actuator Park Lock - Intake B2 (Electronic Actuator)	P1013	Inlet camshaft Bank 2 locking position offset check	The angle difference between the actual position and the locking position of inlet camshaft bank2	>=	8	degrees	Engine is cranking e.g. end of startup has not reached or has reached for time	<=	1	sec			Once per driving cycle	2 Trips
			for number of times	>	2	-	Engine OFF time before cranking was long enough to allow camshaft actuator return in locking position, which is the following condition:	=	TRUE	-				
							Ignition off time	>=	1	sec				
							(	=	TRUE	-				
							Automatic start is active							
							No of automatic start	<=	1	count				
							)							
							Engine speed	>=	120	rpm				
							Difference between desired position phase actuator and locking position of inlet camshaft bank1	<=	4	degrees				
							Inlet camshaft adaption is performed	=	TRUE	-				
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enable conditions met	=	see sheet enable tables	-				
Camshaft Position Actuator Park Lock - Intake B2 (Electronic Actuator)	P25CF	Diagnoses the Camshaft Lock Pin Actuator Bank 2 low side driver circuit for short circuit to battery faults.	Voltage high during driver on state (indicates short-to-power)	=	Short to power: ≤ 0.5 Ω impedance between signal and controller power	-	ECU is in drive state	=	TRUE	-	1	sec	continuous	2 Trips
							Engine Speed	>=	80	rpm				
							Battery Voltage	>	10.9	V				
							Battery Voltage	<	25.5	V				
							Basic enable conditions met	=	see sheet enable tables	-				
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
	P25CE	Diagnoses the Camshaft Lock Pin Actuator Bank 2 low side driver circuit for short circuit to ground faults.	Voltage low during driver off state (indicates short-to-ground)	=	Short to ground: ≤ 0.5 Ω impedance between signal and controller	-	ECU is in drive state	=	TRUE	-	1	sec	continuous	2 Trips
							Engine Speed	>=	80	rpm				
							Battery Voltage	>	10.9	V				
							Battery Voltage	<	25.5	V				
							Basic enable conditions met	=	see sheet enable tables	-				
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
	P25CD	Diagnoses the Camshaft Lock Pin Actuator Bank 2 low side driver circuit for open circuit faults	Voltage low during driver off state (indicates open circuit)	=	Open Circuit : ≥ 200 KΩ impedance between ECU pin and load	-	ECU is in drive state	=	TRUE	-	1	sec	continuous	2 Trips
							Engine Speed	>=	80	rpm				
							Battery Voltage	>	10.9	V				
							Battery Voltage	<	25.5	V				
							Basic enable conditions met	=	see sheet enable tables	-				
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enable conditions met	=	see sheet enable tables	-				
Engine Oil Pressure Control Actuator	P0524	Oil pressure - Low	Relative engine oil pressure (see Look-Up Table #P0524-1)	<	-70 to 182	kPa	(Absolute value of transversal acceleration	<=	5	g	0	sec		1 Trip
			for time (see Look-Up Table #P0524-2)		2.2 to 15	sec	for time	>=	0	sec				
							for hold time after condition becomes false)	<=	0	sec				

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					No pending or confirmed DTCs Basic enable conditions met	= see sheet inhibit tables - = see sheet enable tables -		
	P06DD	Measured oil pressure compared to setpoint - High	Difference between measured engine oil pressure and oil pressure surface set point (see Look-Up Table #P06DD-1) for time constant filter	> 100 to 800 kPa > 1.9998779 sec	Short trip test active (Absolute value of transversal acceleration for time for hold time after condition becomes false) Oil temperature Oil pump high side switch commanded on Backup duty cycle for oil pressure is in use In electric drive mode No pending or confirmed DTCs Basic enable conditions met	= FALSE - >= 5 g >= 0 sec <= 0 sec > -50.04 deg C = TRUE - = FALSE - = FALSE - = see sheet inhibit tables - = see sheet enable tables -	1 sec	2 Trip
	P06DD	Measured oil pressure compared to setpoint - Low	Engine oil pressure minus oil pressure set point (see Look-Up Table #P06DD-2)	< -800 to -40 kPa	Short trip test active (Absolute value of transversal acceleration for time for hold time after condition becomes false) Oil temperature Oil pump high side switch commanded on Backup duty cycle for oil pressure is in use In electric drive mode No pending or confirmed DTCs Basic enable conditions met	= FALSE - >= 5 g >= 0 sec <= 0 sec > -50.04 deg C = TRUE - = FALSE - = FALSE - = see sheet inhibit tables - = see sheet enable tables -	1 sec	2 Trip
	P06DC	Diagnoses oil pump low side driver circuit for circuit high fault	Oil pump actuator driver has posted a high circuit failure	= TRUE - Short to power: ≤ 0.5 Ω impedance between signal and controller power -	Actuator power stage is enabled Battery voltage for time No pending or confirmed DTCs Basic enable conditions met	= TRUE - > 10.9 V >= 0 sec = see sheet inhibit tables - = see sheet enable tables -	0.05 sec	2 Trips
	P06DB	Diagnoses oil pump low side driver circuit for circuit low fault	Oil pump actuator driver has posted a low circuit failure	= TRUE - Short to ground: ≤ 0.5 Ω impedance between signal and controller ground -	Actuator power stage is enabled Battery voltage for time No pending or confirmed DTCs Basic enable conditions met	= FALSE - > 10.9 V >= 0 sec = see sheet inhibit tables - = see sheet enable tables -	0.05 sec	2 Trips
	P06DA	Diagnoses oil pump low side driver circuit for open circuit fault	Oil pump actuator driver has posted an open circuit failure	= TRUE - Open Circuit: ≥ 200 K Ω impedance between ECU pin and load -	Actuator power stage is enabled Battery voltage for time No pending or confirmed DTCs Basic enable conditions met	= TRUE - > 10.9 V >= 0 sec = see sheet inhibit tables - = see sheet enable tables -	1 sec	2 Trips
	P06DA	Diagnoses oil pump low side driver circuit for over temperature circuit fault	Oil pump actuator driver has posted an over temperature circuit failure	= TRUE -	Actuator power stage is enabled	= TRUE -	1 sec	2 Trips

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
				Over Temperature: -	Battery voltage for time No pending or confirmed DTCs Basic enable conditions met	> 10.9 V >= 0 sec = see sheet inhibit tables - = see sheet enable tables -		
Engine Starter Motor Actuator	P06E9	Detects no engine movement in spite of requested active power stage (mechanical blocked engine, relay malfunction) for a calibrated time.	(Difference between camshaft edge counter and stored camshaft edge counter everytime when starter diagnosis was activated OR Difference between camshaft edge counter and stored camshaft edge counter everytime when starter diagnosis was activated Difference between camshaft edge counter and stored camshaft edge counter everytime when starter diagnosis was activated) Engine speed	< 3 - < 0 - < -32765 - = 0 rpm	Battery voltage Battery voltage ECU is in drive state Starter release from monitoring is active (Starter relay is active for time OR Starter relay is active for time Starter relay is active for time) No pending or confirmed DTCs Basic enable conditions met	>= 8 V <= 655.34 V = TRUE - = TRUE - = TRUE - > 0.026 sec = TRUE - > 0.02 sec = TRUE - <= 0.021 sec = see sheet inhibit tables - = see sheet enable tables -	1.5 sec continuous	no MIL
Engine Starter Motor Actuator	P0617	Starter motor relay circuit feedback voltage is greater than a calibrated threshold for a calibrated period of time.	Power stage 1 feedback voltage	> 4.5 V	Battery voltage Battery voltage ECU is in drive state Starter relay powestage 1 is active Basic enable conditions met No pending or confirmed DTCs	>= 8 V <= 655.34 V = TRUE - = FALSE - = see sheet enable tables - = see sheet inhibit tables -	1 sec continuous	no MIL
	P0616	Starter motor relay circuit feedback voltage is less than a calibrated threshold for a calibrated period of time.	Power stage 1 feedback voltage (see Look-Up-Table #P0616-1)	< 1.95 to 4.5 V	Battery voltage Battery voltage ECU is in drive state Starter relay powestage 1 is active Basic enable conditions met No pending or confirmed DTCs	>= 8 V <= 655.34 V = TRUE - = FALSE - = see sheet enable tables - = see sheet inhibit tables -	0.05 sec continuous	no MIL
	P0615	Starter motor relay circuit feedback voltage is within a calibrated threshold range for a calibrated period of time.	Power stage 1 feedback voltage Power stage 1 feedback voltage	>= 1.2 V <= 2.8 V	Battery voltage Battery voltage ECU is in drive state Starter relay powestage 1 is active Basic enable conditions met No pending or confirmed DTCs	>= 8 V <= 655.34 V = TRUE - = FALSE - = see sheet enable tables - = see sheet inhibit tables -	1 sec continuous	no MIL
Engine Starter Pinion Actuator	P26E6	Starter motor relay "B" circuit feedback voltage is greather than a calibrated threshold for a calibrated period of time.	Power stage 2 feedback voltage	> 4.5 V	Battery voltage Battery voltage ECU is in drive state Starter relay powestage 1 is active Basic enable conditions met No pending or confirmed DTCs	>= 8 V <= 655.34 V = TRUE - = FALSE - = see sheet enable tables - = see sheet inhibit tables -	1 sec continuous	no MIL
	P26E5	Starter motor relay "B" circuit feedback voltage is less than a calibrated threshold for a calibrated period of time.	Power stage 2 feedback voltage (see Look-Up-Table #P0616-1)	< 1.95 to 4.5 V	Battery voltage	>= 8 V	0.05 sec continuous	no MIL

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required			MIL Illum.
							Battery voltage	<=	655.34	V				
							ECU is in drive state	=	TRUE	-				
							Starter relay powestage 1 is active	=	FALSE	-				
							Basic enable conditions met	=	see sheet enable tables	-				
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
	P26E4	Starter motor relay "B" circuit feedback voltage is within a calibrated threshold range for a calibrated period of time.	Power stage 2 feedback voltage	>=	1.2	V	Battery voltage	>=	8	V	1	sec	continuous	no MIL
			Power stage 2 feedback voltage	<=	2.8	V	Battery voltage	<=	655.34	V				
							ECU is in drive state	=	TRUE	-				
							Starter relay powestage 1 is active	=	FALSE	-				
							Basic enable conditions met	=	see sheet enable tables	-				
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
Turbocharger Bypass Valve - B1	P2261	Plausibility check of HFM Sensor : Error Dump valve	Pressure downstream compressor	>	5	kPa	(						Continuous	2 Trips
			for counts	>	5	-	Bit dump valve diagnosis enabled (cross effects)	=	TRUE	-				
							Condition air mass flow upstream intercooler at bank1 valid	=	TRUE	-				
							Delta mass flow through volume between compressor and DK through Delta pressure is valid for bank1	=	TRUE	-				
							Condition for pressure sensor signal upstream throttle valve valid	=	TRUE	-				
							Condition boost pressure 1st bank plausible	=	TRUE	-				
							Condition Mass flow at the DK calculated from the sensor signal of the DSS valid, Bank1	=	TRUE	-				
							Validity of the pressure value (sensor) of the intake manifold - bank 1	=	TRUE	-				
							Difference between maximum and minimum manifold pressure from sensor signal wobble check	>=	10	kPa				
							Condition modelled manifold pressure independent of massflow over throttle blade valid, bank1	=	TRUE	-				
							Condition defect cylinder in full engine mode without gas exchange for bank 1	=	FALSE	-				
							(							
							Condition defect cylinder in half engine mode with Permanently gas exchange bank 1.	=	FALSE	-				
							OR							
							Synchronisation half engine mode and air charge determination of first activated HEM cylinder for bank 1	=	FALSE	-				
							)							
							ambient pressure valid	=	TRUE	-				
							Temperature downstream inlet valve valid (bank 1)	=	TRUE	-				
							Bit physical condition for dump valve diagnosis present	=	TRUE	-				
							Intake air temperature before intake throttle (Bank-1)	>	4.960	deg C				
							Enabling condition for driving the output stage of the dump valve	=	TRUE	-				
							Battery voltage	<	655.34	V				
							(							
							(							
							Condition for openening the dump valve (turn off delayed:	=	TRUE	-				
							Condition for openening the dump valve	=	TRUE	-				
							(							
							Ratio pressure downstream to upstream compressor (See Look-up-Table #P2261-1)	>	1.069946 to 3.445923					
							OR							
							Ratio pressure downstream to upstream compressor (bank 2) (See Look-up-Table #P2261-2)	>	1.069946 to 3.407959	-				

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					)			
					Set intake manifold pressure (See Look-up-Table #P2261-3)	>= 0 to 35 kPa		
					)			
					for time	> 0.1 sec		
					)			
					OR			
					Condition for openening the dump valve must be true for time	> 0.5 sec		
					for time	> 0.1 sec		
					)			
					for time	> 0.7 sec		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
	P0035	Diagnosis of turbocharger bypass valve for short circuit to battery faults	Voltage high during driver ON state (indicates short circuit to battery)	= Short to power: ≤ 0.5 Ω impedance between ECU pin and injector supply voltage -		= TRUE -	0.5 sec continuous	2 Trips
					Conditions for enabling the powerstage diagnosis:			
					(			
					ECU is in drive state	= TRUE -		
					engine speed with low resolution	>= 80 rpm		
					Battery voltage	> 10.9 V		
					Battery voltage	< 25.5 V		
					)			
					Basic enable conditions met	= see sheet enable tables -		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
	P0034	Diagnosis of turbocharger bypass valve for short circuit to ground faults	Voltage low during driver OFF state (indicates short circuit to ground)	= Short to ground: ≤ 0.5 Ω impedance between ECU pin and ground -			0.5 sec continuous	2 Trips
					Conditions for enabling the powerstage diagnosis:			
					(			
					ECU is in drive state	= TRUE -		
					engine speed with low resolution	>= 80 rpm		
					Battery voltage	> 10.9 V		
					Battery voltage	< 25.5 V		
					)			
					Basic enable conditions met	= see sheet enable tables -		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
	P0033	Diagnosis of turbocharger bypass valve for open circuit faults	Voltage low during driver OFF state (indicates open circuit)	= Open Circuit: ≥ 200 K Ω impedance between ECU pin and load -		= TRUE -	0.5 sec continuous	2 Trips
					Conditions for enabling the powerstage diagnosis:			
					(			
					ECU is in drive state	= TRUE -		
					engine speed with low resolution	>= 80 rpm		
					Battery voltage	> 10.9 V		
					Battery voltage	< 25.5 V		
					)			
					Basic enable conditions met	= see sheet enable tables -		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
Turbocharger Bypass Valve - B2	P00C4	Plausibility check of HFM Sensor : Error Dump valve for bank 2	Pressure downstream compressor for bank 2	> 5 kPa	(		Continuous	2 Trips
			for counts	> 5 -	Bit dump valve diagnosis enabled (cross effects)	= TRUE -		
					Condition air mass flow upstream intercooler at bank2 valid	= TRUE -		
					Delta mass flow through volume between compressor and DK through Delta pressure is valid for bank2	= TRUE -		
					Condition for pressure sensor signal upstream throttle valve valid for bank 2	= TRUE -		
					Condition boost pressure 1st bank plausible	= TRUE -		
					Condition Mass flow at the DK calculated from the sensor signal of the DSS valid, bank2	= TRUE -		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 TEST GROUP: KGMXV04.2088 EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Validity of the pressure value (sensor) of the intake manifold - bank 2	= TRUE -		
					Difference between maximum and minimum manifold pressure from sensor signal wobble check	>= 10 kPa		
					Condition modelled manifold pressure independent of massflow over throttle blade valid, bank2	= TRUE -		
					Condition defect cylinder in full engine mode without gas exchange for bank 2	= FALSE -		
					(			
					Condition defect cylinder in half engine mode with Permanently gas exchange bank 2.	= FALSE -		
					OR			
					Synchronisation half engine mode and air charge determination of first activated HEM cylinder for bank 2	= FALSE -		
					)			
					ambient pressure valid	= TRUE -		
					Temperature downstream inlet valve valid (Bank 2)	= TRUE -		
					Bit physical condition for dump valve diagnosis present	= TRUE -		
					Intake air temperature before intake throttle (Bank 2)	> 4.96 deg C		
					Enabling condition for driving the output stage of the dump valve	= TRUE -		
					Battery voltage	< 655.34 V		
					(			
					(			
					Condition for openening the dump valve (turn off delayed)	= TRUE -		
					Condition for openening the dump valve	= TRUE -		
					(			
					Ratio pressure downstream to upstream compressor (See Look-up-Table #P2261-1)	> 1.069946 to 3.445923		
					OR			
					Ratio pressure downstream to upstream compressor (bank 2) (See Look-up-Table #P2261-2)	> 1.069946 to 3.407959 -		
					)			
					Set intake manifold pressure (See Look-up-Table #P2261-3)	>= 0 to 35 kPa		
					)			
					for time	> 0.1 sec		
					)			
					OR			
					Condition for openening the dump valve must be true for time	> 0.5 sec		
					for time	> 0.1 sec		
					)			
					for time	> 0.7 sec		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
	P00C2	Diagnosis of turbocharger bypass valve for short circuit to battery faults	Voltage high during driver ON state (indicates short circuit to battery)	= Short to power: ≤ 0.5 Ω impedance between ECU pin and injector supply voltage -	Conditions for enabling the powerstage diagnosis:	= TRUE -	0.5 sec continuous	2 Trips
					(			
					ECU is in drive state	= TRUE -		
					engine speed with low resolution	>= 80 rpm		
					Battery voltage	> 10.9 V		
					Battery voltage	< 25.5 V		
					)			
					Basic enable conditions met	= see sheet enable tables -		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
	P00C1	Diagnosis of turbocharger bypass valve for short circuit to ground faults	Voltage low during driver OFF state (indicates short circuit to ground)	= Short to ground: ≤ 0.5 Ω impedance between ECU pin and ground -	Conditions for enabling the powerstage diagnosis:	= TRUE -	0.5 sec continuous	2 Trips
					(			
					ECU is in drive state	= TRUE -		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					engine speed with low resolution Battery voltage Battery voltage) Basic enable conditions met No pending or confirmed DTCs	>= 80 rpm > 10.9 V < 25.5 V = see sheet enable tables - = see sheet inhibit tables -		
	P00C0	Diagnosis of turbocharger bypass valve for open circuit faults	Voltage low during driver OFF state (indicates open circuit)	= Open Circuit: ≥ 200 K Ω impedance between ECU pin and load -	Conditions for enabling the powerstage diagnosis: (ECU is in drive state engine speed with low resolution Battery voltage Battery voltage) Basic enable conditions met No pending or confirmed DTCs	= TRUE - = TRUE - >= 80 rpm > 10.9 V < 25.5 V = see sheet enable tables - = see sheet inhibit tables -	0.5 sec continuous	2 Trips
EVAP Purge Valve - B1	P0459	Diagnoses the EVAP System Purge Control Valve low side driver circuit for circuit high faults.	Output (driver) current	>= 5.6 A	Battery voltage Battery voltage Power stage (driver) is switched on Basic enable conditions met No pending or confirmed DTCs	>= 10 V <= 17 V = TRUE - = see sheet enable tables - = see sheet inhibit tables -	1 sec continuous	2 Trips
	P0458	Diagnoses the EVAP System Purge Control Valve low side driver circuit for circuit low faults.	Output (driver) voltage	<= 2.74 V	Battery voltage Battery voltage Power stage (driver) is switched off Basic enable conditions met No pending or confirmed DTCs	>= 10 V <= 17 V = TRUE - = see sheet enable tables - = see sheet inhibit tables -	1 sec continuous	2 Trips
	P0443	Diagnoses the EVAP System Purge Control Valve low side driver circuit for open circuit faults.	Output (driver) voltage Output (driver) voltage	> 3.26 V <= 4.7 V	Battery voltage Battery voltage Power stage (driver) is switched off Basic enable conditions met No pending or confirmed DTCs	>= 10 V <= 17 V = TRUE - = see sheet enable tables - = see sheet inhibit tables -	1 sec continuous	2 Trips
EVAP Purge Valve - B2	P04AD	Diagnoses the EVAP System Purge Control Valve low side driver circuit for circuit high faults.	Output (driver) current	>= 5.6 A	Battery voltage Battery voltage Power stage (driver) is switched on Basic enable conditions met No pending or confirmed DTCs	>= 10 V <= 17 V = TRUE - = see sheet enable tables - = see sheet inhibit tables -	1 sec continuous	2 Trips
	P04AC	Diagnoses the EVAP System Purge Control Valve low side driver circuit for circuit low faults.	Output (driver) voltage	<= 2.74 V	Battery voltage Battery voltage Power stage (driver) is switched off Basic enable conditions met No pending or confirmed DTCs	>= 10 V <= 17 V = TRUE - = see sheet enable tables - = see sheet inhibit tables -	1 sec continuous	2 Trips
	P04AB	Diagnoses the EVAP System Purge Control Valve low side driver circuit for open circuit faults.	Output (driver) voltage Output (driver) voltage	> 3.26 V <= 4.7 V	Battery voltage Battery voltage Power stage (driver) is switched off Basic enable conditions met No pending or confirmed DTCs	>= 10 V <= 17 V = TRUE - = see sheet enable tables - = see sheet inhibit tables -	1 sec continuous	2 Trips

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
Throttle Actuator - B1	P2176	Throttle actuator Bank1 first initialization - lower mechanical stop learning fail	(				(Offset learning aborted	=	FALSE	-	Once per driving cycle	1 Trip
			Initial learning of the closed throttle valve position has started	=	TRUE	-	OR					
			Aborted due to one of the enable conditions no longer being fulfilled (see secondary parameters))	=	TRUE	-	Offset learning successful)	=	FALSE	-		
			OR				Offset check at cold temperature conditions active	=	FALSE	-		
			(				((					
		First learning of closed mechanical stop: Throttle position at lower mechanical stop	**Step 1** (Learning of the closed throttle valve position)**:** Lower mechanical stop offset learning aborted at step 1 (moving throttle valve to the closed position) due to the following reason (closed position has not reached):				(Return spring check aborted OR	=	TRUE	-		
			(				Return spring check successful)	=	TRUE	-		
			(				Return spring check fault is set	=	FALSE	-		
			Difference between actual throttle position sensor1 at lower mechanical stop and desired value for adaptation (based on max. allowed for lower mechanical stop voltage)	>	1.5	%	OR					
			)				Device type)	>	0	-		
			for time	>=	1	sec	(					
			)				Offset learning will be enabled during ECU is in drive state when below conditions are satisfied for time (	>	29	sec		
			)				((					
			OR (				Offset learning active OR (	=	TRUE	-		
		First learning of closed mechanical stop: Duty cycle at lower mechanical stop and resulting change in sensor voltage	**Step 2** (If no fault in step 1 then ramp to closed position with duty cylce in a defined range and check sensor voltages)**:** Lower mechanical stop offset learning aborted at step 2 (pressing throttle valve to the low mechanical stop with certain force) due to the				Offset learning active	=	FALSE	-		
			(Calculated duty cycle ratio	<=	60	%	(The powerstage of the throttle actuator is commanded on	=	TRUE	-		
			)				Battery voltage	>	7.5	V		
			for time	>=	1	sec	))) OR					
			) OR				Power save is active)	=	TRUE	-		
			(				Limp home driving mode requested	=	FALSE	-		
		Range check of learned sensor voltage at low mechanical stop	**Step 3** (If no fault in step 2 then check range of learned sensor voltages at lower mechanical stop)**:** Lower mechanical stop offset learning aborted at step 3 (sensor offset learning at low mechanical stop) due to one of the the following conditions:				Safety fuel cut off requested	=	FALSE	-		
							Torque limitation requested)	=	FALSE	-		
			(				(Long term and short term adaptation chosen OR	=	FALSE	-		
			Lower mechanical stop voltage sensor 1 OR	>	0.69458	V						
							(Long term and short term adaptation chosen	=	TRUE	-		
			Lower mechanical stop voltage sensor 1 OR	<	0.37964	V	Long term and short term is released)) OR (	=	TRUE	-		
			Lower mechanical stop voltage sensor 2 OR	>	4.61426	V						
			Lower mechanical stop voltage sensor 2)	<	4.36157	V						
			)				(First learning performed OR	=	FALSE	-		
							Limp air position is not plausible OR	=	TRUE	-		
							External trigger to start offset learning)	=	TRUE	-		
							(ECU is in drive state	=	TRUE	-		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required			MIL Illum.
							OR							
							ECU is in post drive state for time	>	5	sec				
							)							
							)							
							OR							
							ECU is in post drive state for time	>	5	sec				
							)							
							Offset learning will be enabled when below conditions are satisfied	=	TRUE	-				
							(							
							(							
							(							
							Offset learning active	=	TRUE	-				
							OR							
							(							
							Offset learning active	=	FALSE	-				
							(							
							The powerstage of the throttle actuator is commanded on	=	TRUE	-				
							Battery voltage	>	7.5	V				
							)							
							)							
							)							
							OR							
							Power save is active	=	TRUE	-				
							)							
							Limp home driving mode requested	=	FALSE	-				
							Safety fuel cut off requested	=	FALSE	-				
							Torque limitation requested	=	FALSE	-				
							)							
							Vehicle speed	<=	0.62150404	mph				
							Engine speed	<=	300	rpm				
							Battery voltage	<=	655.34	V				
							Battery voltage	>=	10	V				
							Intake air temperature before throttle valve	<=	143.26	deg C				
							Intake air temperature before throttle valve	>=	5.26	deg C				
							Engine coolant temperature	<=	100.46	deg C				
							Engine coolant temperature	>=	5.26	deg C				
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enable conditions met	=	see sheet enable tables	-				
		Throttle actuator Bank1 - lower mechanical stop learning fail	Lower mechanical stop offset learning aborted at step 2 (pressing throttle valve to the low mechanical stop with certain force) due to the following reason (duty cycle ratio has not reached threshold):				(Offset learning aborted	=	FALSE	-	1	sec	Once per driving cycle	1 Trip
			(				OR							
			Calculated duty cycle ratio	<=	60	%	Offset learning successful	=	FALSE	-				
							)							
			for time	>=	1	sec	Offset check at cold temperature conditions active	=	FALSE	-				
			)				(							
							(							
			OR				(Return spring check aborted	=	TRUE	-				
			Lower mechanical stop offset learning aborted at step 3 (sensor offset learning at low mechanical stop) due to one of the the following conditions:				OR							
			(				Return spring check successful	=	TRUE	-				
							)							
			Lower mechanical stop voltage sensor 1	>	0.69458	V	Return spring check fault is set	=	FALSE	-				
							)							
			OR				OR							
			Lower mechanical stop voltage sensor 1	<	0.37964	V	Device type	>	0	-				
							)							
			OR				(							
			Lower mechanical stop voltage sensor 2	>	4.61426	V	Offset learning will be enabled during ECU is in drive state when below conditions are satisfied for time	>	29	sec				
							(							
			OR				(							
							(							
			Lower mechanical stop voltage sensor 2	<	4.36157	V	Offset learning active	=	TRUE	-				
			)				OR							
							(							
							Offset learning active	=	FALSE	-				
							(							

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					The powerstage of the throttle actuator is commanded on	=	TRUE	-		
					Battery voltage	>	7.5	V		
					)					
					)					
					)					
					OR					
					Power save is active	=	TRUE	-		
					)					
					Limp home driving mode requested	=	FALSE	-		
					Safety fuel cut off requested	=	FALSE	-		
					Torque limitation requested	=	FALSE	-		
					)					
					(	=	FALSE	-		
					Long term and short term adaptation chosen					
					OR					
					(	=	TRUE	-		
					Long term and short term adaptation chosen					
					Long term and short term is released	=	TRUE	-		
					)					
					)					
					OR					
					(					
					(					
					First learning performed	=	FALSE	-		
					OR					
					Limp air position is not plausible	=	TRUE	-		
					OR					
					External trigger to start offset learning	=	TRUE	-		
					)					
					(	=	TRUE	-		
					ECU is in drive state					
					OR					
					ECU is in post drive state for time	>	5	sec		
					)					
					)					
					OR					
					ECU is in post drive state for time	>	5	sec		
					)					
					Offset learning will be enabled when below conditions are satisfied	=	TRUE	-		
					(					
					(					
					(					
					Offset learning active	=	TRUE	-		
					OR					
					(					
					Offset learning active	=	FALSE	-		
					(					
					The powerstage of the throttle actuator is commanded on	=	TRUE	-		
					Battery voltage	>	7.5	V		
					)					
					)					
					)					
					OR					
					Power save is active	=	TRUE	-		
					)					
					Limp home driving mode requested	=	FALSE	-		
					Safety fuel cut off requested	=	FALSE	-		
					Torque limitation requested	=	FALSE	-		
					)					
					Vehicle speed	<=	0.62150404	mph		
					Engine speed	<=	300	rpm		
					Battery voltage	<=	655.34	V		
					Battery voltage	>=	10	V		
					Intake air temperature before throttle valve	<=	143.26	deg C		
					Intake air temperature before throttle valve	>=	5.26	deg C		
					Engine coolant temperature	<=	100.46	deg C		
					Engine coolant temperature	>=	5.26	deg C		
					No pending or confirmed DTCs	=	see sheet inhibit tables	-		
					Basic enable conditions met	=	see sheet enable tables	-		
	P30E3	**Path 1:** Throttle position at lower mechanical stop exceeded maximum limit for Throttle Position Sensor Bank 1	**Step 1 (**Learning of the closed throttle valve position)**:**		(	=	FALSE	-	1 sec once per driving cycle	1 Trip
					Offset learning aborted					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
			Actuator throttle position	>	(Vmax - V) * Tgrad + Offset	%	OR					
			Where:				Offset learning successful	=	FALSE	-		
							)					
			Vmax (Maximum voltage value allowed at mechanical stop, position sensor 1)	=	0.69458	V	Offset check at cold temperature conditions active	=	FALSE	-		
			V (Actual learned sensor voltage of sensor 1 at the lower mechanical stop)	=	sensed voltage	V	(					
							(					
			Tgrad (Gradient of the throttle valve angle versus sensor 1 voltage)	=	calculated value	% / V	(Return spring check aborted	=	TRUE	-		
			Offset (Offset to Desired position value to start ramping into mechanical stop)	=	1.5	%	OR					
							Return spring check successful	=	TRUE	-		
		Path 2: Range check of learned sensor voltage at lower mechanical stop for Throttle Position Sensor Bank 1 : Maximum learning limit exceeded	Low mechanical stop first learning has been performed	=	TRUE	-	Return spring check fault is set	=	FALSE	-		
							)					
			and				OR					
			Step 3 (If no fault in step 1 then check range of learned sensor voltages at lower mechanical stop)**:**				Device type	>	0	-		
							)					
			Actual learned sensor voltage of sensor 1 at the mechanical stop	>	0.69458	V	(					
			OR				Offset learning will be enabled during ECU is in drive state when below conditions are satisfied for time	>	29	sec		
							(					
			Actual learned sensor voltage of sensor 2 at the mechanical stop	>	4.61426	V	(					
							(					
							Offset learning active	=	TRUE	-		
							OR					
							(					
							Offset learning active	=	FALSE	-		
							(					
							The powerstage of the throttle actuator is commanded on	=	TRUE	-		
							Battery voltage	>	7.5	V		
							)					
							)					
							)					
							OR					
							Power save is active	=	TRUE	-		
							)					
							Limp home driving mode requested	=	FALSE	-		
							Safety fuel cut off requested	=	FALSE	-		
							Torque limitation requested	=	FALSE	-		
							)					
							(Long term and short term adaptation chosen	=	FALSE	-		
							OR					
							(Long term and short term adaptation chosen	=	TRUE	-		
							Long term and short term is released	=	TRUE	-		
							)					
							)					
							OR					
							(					
							(					
							First learning performed	=	FALSE	-		
							OR					
							Limp air position is not plausible	=	TRUE	-		
							OR					
							External trigger to start offset learning	=	TRUE	-		
							)					
							(ECU is in drive state	=	TRUE	-		
							OR					
							ECU is in post drive state for time	>	5	sec		
							)					
							)					
							OR					
							ECU is in post drive state for time	>	5	sec		
							)					
							Offset learning will be enabled when below conditions are satisfied	=	TRUE	-		
							(					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					(			
					(			
					Offset learning active	= TRUE -		
					OR			
					(			
					Offset learning active	= FALSE -		
					(			
					The powerstage of the throttle actuator is commanded on	= TRUE -		
					Battery voltage	> 7.5 V		
					)			
					)			
					)			
					OR			
					Power save is active	= TRUE -		
					)			
					Limp home driving mode requested	= FALSE -		
					Safety fuel cut off requested	= FALSE -		
					Torque limitation requested	= FALSE -		
					)			
					Vehicle speed	<= 0.62150404 mph		
					Engine speed	<= 300 rpm		
					Battery voltage	<= 655.34 V		
					Battery voltage	>= 10 V		
					Intake air temperature before throttle valve	<= 143.26 deg C		
					Intake air temperature before throttle valve	>= 5.26 deg C		
					Engine coolant temperature	<= 100.46 deg C		
					Engine coolant temperature	>= 5.26 deg C		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
	P30E4	Range check of learned sensor voltage at lower mechanical stop for Throttle Position Sensor Bank 1: Minimum learning limit exceeded	Low mechanical stop first learning has been performed	= TRUE -	(Offset learning aborted	= FALSE -	1 sec once per driving cycle	1 Trip
			and		OR			
			Step 3 (If no fault in step 2 then check range of learned sensor voltages at lower mechanical stop)**:**		Offset learning successful	= FALSE -		
					)			
			Actual learned sensor voltage of sensor 1 at the mechanical stop	<= 0.69458 V	Offset check at cold temperature conditions active	= FALSE -		
			Actual learned sensor voltage of sensor 2 at the mechanical stop	<= 4.61426 V	(			
					(			
			(		(	= TRUE -		
					Return spring check aborted			
			Actual learned sensor voltage of sensor 1 at the mechanical stop	< 0.37964 V	OR			
			OR		Return spring check successful	= TRUE -		
					)			
			Actual learned sensor voltage of sensor 2 at the mechanical stop	< 4.36157 V	Return spring check fault is set	= FALSE -		
			)		)			
					OR			
					Device type	> 0 -		
					)			
					(			
					Offset learning will be enabled during ECU is in drive state when below conditions are satisfied for time	> 29 sec		
					(			
					(			
					(			
					Offset learning active	= TRUE -		
					OR			
					(			
					Offset learning active	= FALSE -		
					(			
					The powerstage of the throttle actuator is commanded on	= TRUE -		
					Battery voltage	> 7.5 V		
					)			
					)			
					)			
					OR			
					Power save is active	= TRUE -		
					)			
					Limp home driving mode requested	= FALSE -		
					Safety fuel cut off requested	= FALSE -		
					Torque limitation requested	= FALSE -		
					)			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					(Long term and short term adaptation chosen	= FALSE -		
					OR			
					(Long term and short term adaptation chosen	= TRUE -		
					Long term and short term is released	= TRUE -		
					)			
					)			
					OR			
					(			
					(			
					First learning performed	= FALSE -		
					OR			
					Limp air position is not plausible	= TRUE -		
					OR			
					External trigger to start offset learning	= TRUE -		
					)			
					(ECU is in drive state	= TRUE -		
					OR			
					ECU is in post drive state for time	> 5 sec		
					)			
					)			
					OR			
					ECU is in post drive state for time	> 5 sec		
					)			
					Offset learning will be enabled when below conditions are satisfied	= TRUE -		
					(			
					(			
					(			
					Offset learning active	= TRUE -		
					OR			
					(			
					Offset learning active	= FALSE -		
					(			
					The powerstage of the throttle actuator is commanded on	= TRUE -		
					Battery voltage	> 7.5 V		
					)			
					)			
					)			
					OR			
					Power save is active	= TRUE -		
					)			
					Limp home driving mode requested	= FALSE -		
					Safety fuel cut off requested	= FALSE -		
					Torque limitation requested	= FALSE -		
					)			
					Vehicle speed	<= 0.62150404 mph		
					Engine speed	<= 300 rpm		
					Battery voltage	<= 655.34 V		
					Battery voltage	>= 10 V		
					Intake air temperature before throttle valve	<= 143.26 deg C		
					Intake air temperature before throttle valve	>= 5.26 deg C		
					Engine coolant temperature	<= 100.46 deg C		
					Engine coolant temperature	>= 5.26 deg C		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
	P2101	Rationality check of throttle actuator control Bank 1 deviation - Actual actuator position is continuously monitored against commanded value	(		(ECU is in DRIVE state	= TRUE -	0.5 sec continuous	1 Trip
			Difference between actual actuator position and its commanded value	> A * B + C %	OR			
			OR		ECU is in POSTDRIVE state	= TRUE -		
					)			
			Difference between commanded value and actual actuator position	> (A * B + C) %	(Powerstage switched off by diagnosis	= TRUE -		
			)		)			
			Where:		for time	>= 0.799805 sec		
			(A) Rate of change of the commanded value	= calculated value % / s	The powerstage of the actuator is switched on, following conditions:	= TRUE -		
			(B) Factor for allowed control deviation	= 0.02 -	(			
			(C) Allowed control deviation in steady state	= 5 %	State of the thottle valve powerstage bank 1	> 0 -		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					)			
					Release of adaptation	= FALSE -		
					Actual position is valid	= TRUE -		
					Request safety fuel cut off SKA bank 1, following condition:	= FALSE -		
					(			
					Request reversible safety fuel cut off SKA bank 1, which has following condition:	= FALSE -		
					(			
					Battery voltage for throttle valve operation sufficient bank 1	> 7.5 V		
					OR			
					Engine speed	> 1000 rpm		
					)			
					Limp home position not reached bank 1	= FALSE -		
					)			
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
	P0638	Range check of Throttle Actuator Control duty cycle Bank 1	Absolute value of Throttle valve duty cycle ratio bank 1	> Minimum(A, (B*C)) %	(ECU is in DRIVE state	= TRUE -	0.6001 sec continuous	1 Trip
			Where:		OR			
			A - Upper threshold for Throttle Actuator Control duty cycle Bank 1 diagnosis in case of low battery voltage	95 %	ECU is in POSTDRIVE state	= TRUE -		
					)			
			B - Upper threshold for Throttle Actuator Control duty cycle bank1 diagnosis	80 %	Absolute value of position controller of the throttle valve bank 1 of motor bench one / gradient of the filtered desired value	< 78.1 %/s		
			C - Factor for battery voltage compensation bank 1	13.5V / measured battery voltage [V] -	The powerstage of the actuator is switched on, following conditions:	= TRUE -		
					(			
					State of the thottle valve powerstage bank 1	> 0 -		
					)			
					Release of adaptation	= FALSE -		
					Actual position is valid	= TRUE -		
					Request safety fuel cut off SKA bank 1, following condition:	= FALSE -		
					(			
					Request reversible safety fuel cut off SKA bank 1, which has following condition:	= FALSE -		
					(			
					Battery voltage for throttle valve operation sufficient bank 1	= TRUE -		
					OR			
					Engine speed	> 1000 rpm		
					)			
					Limp home position not reached bank 1	= FALSE -		
					)			
					Battery voltage for throttle valve operation sufficient for bank 1	= TRUE -		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
	P1551	**Path 1:** Drift check of limp air position Bank 1 - comparison of actual learned value with first learned limp air position	Absolute difference between actual learned sensor voltage of sensor 1 at limp air position after mean value calculation and first learned sensor voltage of sensor 1 at limp air position	>= 1.40015 V	(Offset learning aborted	= FALSE -	Once per driving cycle	1 Trip
			OR		OR			
			Absolute difference between first learned sensor voltage of sensor 2 at limp air position and actual learned sensor voltage of sensor 2 at limp air position after mean value calculation	>= 1.40015 V	Offset learning successful	= FALSE -		
					)			
					Offset check at cold temperature conditions active	= FALSE -		
					(			
					(			
					(Return spring check aborted	= TRUE -		
					OR			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					Return spring check successful	=	TRUE	-		
					)					
					Return spring check fault is set	=	FALSE	-		
					)					
					OR					
					Device type	>	0	-		
					)					
					(					
					Offset learning will be enabled during ECU is in drive state when below conditions are satisfied for time	>	29	sec		
					(					
					(					
					(					
					Offset learning active	=	TRUE	-		
					OR					
					(					
					Offset learning active	=	FALSE	-		
					(					
					The powerstage of the throttle actuator is commanded on	=	TRUE	-		
					Battery voltage	>	7.5	V		
					)					
					)					
					)					
					OR					
					Power save is active	=	TRUE	-		
					)					
					Limp home driving mode requested	=	FALSE	-		
					Safety fuel cut off requested	=	FALSE	-		
					Torque limitation requested	=	FALSE	-		
					)					
					(	=	FALSE	-		
					Long term and short term adaptation chosen					
					OR					
					(	=	TRUE	-		
					Long term and short term adaptation chosen					
					Long term and short term is released	=	TRUE	-		
					)					
					)					
					OR					
					(					
					(					
					First learning performed	=	FALSE	-		
					OR					
					Limp air position is not plausible	=	TRUE	-		
					OR					
					External trigger to start offset learning	=	TRUE	-		
					)					
					(	=	TRUE	-		
					ECU is in drive state					
					OR					
					ECU is in post drive state for time	>	5	sec		
					)					
					)					
					OR					
					ECU is in post drive state for time	>	5	sec		
					)					
					Offset learning will be enabled when below conditions are satisfied	=	TRUE	-		
					(					
					(					
					(					
					Offset learning active	=	TRUE	-		
					OR					
					(					
					Offset learning active	=	FALSE	-		
					(					
					The powerstage of the throttle actuator is commanded on	=	TRUE	-		
					Battery voltage	>	7.5	V		
					)					
					)					
					)					
					OR					
					Power save is active	=	TRUE	-		
					)					
					Limp home driving mode requested	=	FALSE	-		
					Safety fuel cut off requested	=	FALSE	-		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
							Torque limitation requested	=	FALSE	-		
							)					
							Vehicle speed	<=	0.62150404	mph		
							Engine speed	<=	300	rpm		
							Battery voltage	<=	655.34	V		
							Battery voltage	>=	10	V		
							Intake air temperature before throttle valve	<=	143.26	deg C		
							Intake air temperature before throttle valve	>=	5.26	deg C		
							Engine coolant temperature	<=	100.46	deg C		
							Engine coolant temperature	>=	5.26	deg C		
							No pending or confirmed DTCs	=	see sheet inhibit tables	-		
							Basic enable conditions met	=	see sheet enable tables	-		
		Path 2: Range check of limp air position for Bank 1 - high	Difference between actual learned sensor voltage of sensor 1 at limp air position after mean value calculation and actual learned sensor voltage of sensor 1 at the lower mechanical stop	>	1.39771	V	(Offset learning aborted	=	FALSE	-	Once per driving cycle	1 Trip
			OR				OR					
			Difference between actual learned sensor voltage of sensor 2 at the lower mechanical stop and actual learned sensor voltage of sensor 2 at limp air position after mean value calculation	>	1.39771	V	Offset learning successful)	=	FALSE	-		
							Offset check at cold temperature conditions active	=	FALSE	-		
							(((Return spring check aborted	=	TRUE	-		
							OR					
							Return spring check successful)	=	TRUE	-		
							Return spring check fault is set)	=	FALSE	-		
							OR					
							Device type)	>	0	-		
							(Offset learning will be enabled during ECU is in drive state when below conditions are satisfied for time	>	29	sec		
							(((Offset learning active	=	TRUE	-		
							OR					
							(Offset learning active	=	FALSE	-		
							(The powerstage of the throttle actuator is commanded on	=	TRUE	-		
							Battery voltage)))	>	7.5	V		
							OR					
							Power save is active)	=	TRUE	-		
							Limp home driving mode requested	=	FALSE	-		
							Safety fuel cut off requested	=	FALSE	-		
							Torque limitation requested)	=	FALSE	-		
							(Long term and short term adaptation chosen	=	FALSE	-		
							OR					
							(Long term and short term adaptation chosen	=	TRUE	-		
							Long term and short term is released))	=	TRUE	-		
							OR					
							((First learning performed	=	FALSE	-		
							OR					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					Limp air position is not plausible	=	TRUE	-		
					OR					
					External trigger to start offset learning	=	TRUE	-		
					)					
					(	=	TRUE	-		
					ECU is in drive state					
					OR					
					ECU is in post drive state for time	>	5	sec		
					)					
					)					
					OR					
					ECU is in post drive state for time	>	5	sec		
					)					
					Offset learning will be enabled when below conditions are satisfied	=	TRUE	-		
					(					
					(					
					(					
					Offset learning active	=	TRUE	-		
					OR					
					(					
					Offset learning active	=	FALSE	-		
					(					
					The powerstage of the throttle actuator is commanded on	=	TRUE	-		
					Battery voltage	>	7.5	V		
					)					
					)					
					)					
					OR					
					Power save is active	=	TRUE	-		
					)					
					Limp home driving mode requested	=	FALSE	-		
					Safety fuel cut off requested	=	FALSE	-		
					Torque limitation requested	=	FALSE	-		
					)					
					Vehicle speed	<=	0.62150404	mph		
					Engine speed	<=	300	rpm		
					Battery voltage	<=	655.34	V		
					Battery voltage	>=	10	V		
					Intake air temperature before throttle valve	<=	143.26	deg C		
					Intake air temperature before throttle valve	>=	5.26	deg C		
					Engine coolant temperature	<=	100.46	deg C		
					Engine coolant temperature	>=	5.26	deg C		
					No pending or confirmed DTCs	=	see sheet inhibit tables	-		
					Basic enable conditions met	=	see sheet enable tables	-		
		Path 3: Range check of limp air position for Bank 1 - low	Difference between actual learned sensor voltage of sensor 1 at limp air position after mean value calculation and actual learned sensor voltage of sensor 1 at the lower mechanical stop	< 0.77026 V	(Offset learning aborted	=	FALSE	-	Once per driving cycle	1 Trip
			OR		OR					
			Difference between actual learned sensor voltage of sensor 2 at the lower mechanical stop and actual learned sensor voltage of sensor 2 at limp air position after mean value calculation	< 0.77026 V	Offset learning successful	=	FALSE	-		
					)					
					Offset check at cold temperature conditions active	=	FALSE	-		
					(					
					(					
					(	=	TRUE	-		
					Return spring check aborted					
					OR					
					Return spring check successful	=	TRUE	-		
					)					
					Return spring check fault is set	=	FALSE	-		
					)					
					OR					
					Device type	>	0	-		
					)					
					(					
					Offset learning will be enabled during ECU is in drive state when below conditions are satisfied for time	>	29	sec		
					(					
					(					
					(					
					Offset learning active	=	TRUE	-		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					OR					
					(					
					Offset learning active	=	FALSE	-		
					(					
					The powerstage of the throttle actuator is commanded on	=	TRUE	-		
					Battery voltage	>	7.5	V		
					)					
					)					
					)					
					OR					
					Power save is active	=	TRUE	-		
					)					
					Limp home driving mode requested	=	FALSE	-		
					Safety fuel cut off requested	=	FALSE	-		
					Torque limitation requested	=	FALSE	-		
					)					
					(	=	FALSE	-		
					Long term and short term adaptation chosen					
					OR					
					(	=	TRUE	-		
					Long term and short term adaptation chosen					
					Long term and short term is released	=	TRUE	-		
					)					
					)					
					OR					
					(					
					(					
					First learning performed	=	FALSE	-		
					OR					
					Limp air position is not plausible	=	TRUE	-		
					OR					
					External trigger to start offset learning	=	TRUE	-		
					)					
					(	=	TRUE	-		
					ECU is in drive state					
					OR					
					ECU is in post drive state for time	>	5	sec		
					)					
					)					
					OR					
					ECU is in post drive state for time	>	5	sec		
					)					
					Offset learning will be enabled when below conditions are satisfied	=	TRUE	-		
					(					
					(					
					(					
					Offset learning active	=	TRUE	-		
					OR					
					(					
					Offset learning active	=	FALSE	-		
					(					
					The powerstage of the throttle actuator is commanded on	=	TRUE	-		
					Battery voltage	>	7.5	V		
					)					
					)					
					)					
					OR					
					Power save is active	=	TRUE	-		
					)					
					Limp home driving mode requested	=	FALSE	-		
					Safety fuel cut off requested	=	FALSE	-		
					Torque limitation requested	=	FALSE	-		
					)					
					Vehicle speed	<=	0.62150404	mph		
					Engine speed	<=	300	rpm		
					Battery voltage	<=	655.34	V		
					Battery voltage	>=	10	V		
					Intake air temperature before throttle valve	<=	143.26	deg C		
					Intake air temperature before throttle valve	>=	5.26	deg C		
					Engine coolant temperature	<=	100.46	deg C		
					Engine coolant temperature	>=	5.26	deg C		
					No pending or confirmed DTCs	=	see sheet inhibit tables	-		
					Basic enable conditions met	=	see sheet enable tables	-		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
		Path 4: Limp air position drift Bank 1 - comparison with lower mechanical stop sensor voltage	(				(	=	FALSE	-	Once per driving cycle	1 Trip
							Offset learning aborted					
			Actual offset learning step	=	4	-	OR					
			and				Offset learning successful	=	FALSE	-		
							)					
			(|A - B|) Absolute value of the actual learned value minus last stored value	>	0.15503	V	Offset check at cold temperature conditions active	=	FALSE	-		
			Where:				(					
							(					
			A	=	(A1 + A2) / 2	V	(	=	TRUE	-		
							Return spring check aborted					
			B	=	(B1 + B2) / 2	V	OR					
			A1	=	A11 - A12	V	Return spring check successful	=	TRUE	-		
							)					
			A2	=	A22 - A21	V	Return spring check fault is set	=	FALSE	-		
							)					
			B1	=	B11 - B12	V	OR					
			B2	=	B22 - B21	V	Device type	>	0	-		
							)					
			(A11) Learned sensor voltage of sensor 1 at limp air position				(					
			(A12) Learned reference sensor voltage of sensor 1 at the lower mechanical stop				Offset learning will be enabled during ECU is in drive state when below conditions are satisfied for time	>	29	sec		
							(					
			(A22) Learned reference sensor voltage of sensor 2 at the lower mechanical stop				(					
							(					
			(A21) Learned sensor voltage of sensor 2 at limp air position				Offset learning active	=	TRUE	-		
			(B11) Actual learned sensor voltage of sensor 1 at limp air position after mean value calculation				OR					
			(B12) Learned reference sensor voltage of sensor 1 at the lower mechanical stop				(					
			(B22) Learned reference sensor voltage of sensor 2 at the lower mechanical stop				Offset learning active	=	FALSE	-		
			(B21) Actual learned sensor voltage of sensor 2 at limp air position after mean value calculation				(					
			)				The powerstage of the throttle actuator is commanded on	=	TRUE	-		
							and					
							Battery voltage	>	7.5	V		
							)					
							)					
							)					
							OR					
							Power save is active	=	TRUE	-		
							)					
							Limp home driving mode requested	=	FALSE	-		
							Safety fuel cut off requested	=	FALSE	-		
							Torque limitation requested	=	FALSE	-		
							)					
							(	=	FALSE	-		
							Long term and short term adaptation chosen					
							OR					
							(	=	TRUE	-		
							Long term and short term adaptation chosen					
							Long term and short term is released	=	TRUE	-		
							)					
							)					
							OR					
							(					
							(					
							First learning performed	=	FALSE	-		
							OR					
							Limp air position is not plausible	=	TRUE	-		
							OR					
							External trigger to start offset learning	=	TRUE	-		
							)					
							(	=	TRUE	-		
							ECU is in drive state					
							OR					
							ECU is in post drive state for time	>	5	sec		
							)					
							)					
							OR					
							ECU is in post drive state for time	>	5	sec		
							)					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
							Offset learning will be enabled when below conditions are satisfied	=	TRUE	-		
							(					
							(					
							(					
							Offset learning active	=	TRUE	-		
							OR					
							(					
							Offset learning active	=	FALSE	-		
							(					
							The powerstage of the throttle actuator is commanded on	=	TRUE	-		
							Battery voltage	>	7.5	V		
							)					
							)					
							)					
							OR					
							Power save is active	=	TRUE	-		
							)					
							Limp home driving mode requested	=	FALSE	-		
							Safety fuel cut off requested	=	FALSE	-		
							Torque limitation requested	=	FALSE	-		
							)					
							Vehicle speed	<=	0.62150404	mph		
							Engine speed	<=	300	rpm		
							Battery voltage	<=	655.34	V		
							Battery voltage	>=	10	V		
							Intake air temperature before throttle valve	<=	143.26	deg C		
							Intake air temperature before throttle valve	>=	5.26	deg C		
							Engine coolant temperature	<=	100.46	deg C		
							Engine coolant temperature	>=	5.26	deg C		
							No pending or confirmed DTCs	=	see sheet inhibit tables	-		
							Basic enable conditions met	=	see sheet enable tables	-		
	P2119	**Path 1:** Throttle valve opening spring check - opening failure for Bank 1	Here it is checked whether opening spring can be returned by mechanical force only to the defined limp home position in the defined time				(Offset learning aborted	=	FALSE	-	0.26 sec once per driving cycle	1 Trip
			(									
			Actual offset learning step	=	4	-	OR					
			(				Offset learning successful	=	FALSE	-		
			(				)					
			Limp air position is implausible	=	TRUE	-	Offset check at cold temperature conditions active	=	FALSE	-		
			OR				(					
							(					
			First learning performed	=	FALSE	-	(	=	TRUE	-		
							Return spring check aborted					
			)				OR					
			Position of the throttle valve	<=	A * C1	%	Return spring check successful	=	TRUE	-		
							)					
							Return spring check fault is set	=	FALSE	-		
							)					
			for time	>=	0.26	sec	OR					
			)				Device type	>	0	-		
							)					
			OR				(					
			(				Offset learning will be enabled during ECU is in drive state when below conditions are satisfied for time	>	29	sec		
							(					
			Limp air position is implausible	=	FALSE	-	(					
							(					
			First learning performed	=	TRUE	-	Offset learning active	=	TRUE	-		
			Position of the throttle valve	<=	Limp home position of throttle valve - 3%	%	OR					
			Limp air position is implausible when:				(					
			Absolute difference of the deviation of limp air position sensor voltage at ECU start from lower mechanical stop position sensor voltage and the deviation of actual learned limp air position sensor voltage from lower mechanical stop position sensor voltage	>	0.15503	V	Offset learning active	=	FALSE	-		
			for time	>=	0.26	sec	(					
			)				The powerstage of the throttle actuator is commanded on	=	TRUE	-		
			)									
			Where:				Battery voltage	>	7.5	V		
			(A) Gradient of the throttle valve angle	=	100% / ((V12 - V11) + (V21 - V22)) * 0.5	%/V	)					
							)					
							)					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
			(C1) Threshold for minimum absolute limp air position allowed	= 0.77026 V	OR			
			(V12) Actual learned sensor voltage of sensor 1 at the upper mechanical stop		Power save is active	= TRUE -		
					)			
			(V11) Actual learned sensor voltage of sensor 1 at the lower mechanical stop		Limp home driving mode requested	= FALSE -		
			(V21) Actual learned sensor voltage of sensor 2 at the lower mechanical stop		Safety fuel cut off requested	= FALSE -		
			(V22) Actual learned sensor voltage of sensor 2 at the upper mechanical stop		Torque limitation requested	= FALSE -		
					)			
					(Long term and short term adaptation chosen	= FALSE -		
					OR			
					(Long term and short term adaptation chosen	= TRUE -		
					Long term and short term is released	= TRUE -		
					)			
					)			
					OR			
					(			
					(			
					First learning performed	= FALSE -		
					OR			
					Limp air position is not plausible	= TRUE -		
					OR			
					External trigger to start offset learning	= TRUE -		
					)			
					(ECU is in drive state	= TRUE -		
					OR			
					ECU is in post drive state for time	> 5 sec		
					)			
					)			
					OR			
					ECU is in post drive state for time	> 5 sec		
					)			
					Offset learning will be enabled when below conditions are satisfied	= TRUE -		
					(			
					(			
					(			
					Offset learning active	= TRUE -		
					OR			
					(			
					Offset learning active	= FALSE -		
					(			
					The powerstage of the throttle actuator is commanded on	= TRUE -		
					Battery voltage	> 7.5 V		
					)			
					)			
					)			
					OR			
					Power save is active	= TRUE -		
					)			
					Limp home driving mode requested	= FALSE -		
					Safety fuel cut off requested	= FALSE -		
					Torque limitation requested	= FALSE -		
					)			
					Vehicle speed	<= 0.62150404 mph		
					Engine speed	<= 300 rpm		
					Battery voltage	<= 655.34 V		
					Battery voltage	>= 10 V		
					Intake air temperature before throttle valve	<= 143.26 deg C		
					Intake air temperature before throttle valve	>= 5.26 deg C		
					Engine coolant temperature	<= 100.46 deg C		
					Engine coolant temperature	>= 5.26 deg C		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
		Path 2: Throttle valve opening spring failure while spreading the opening spring for Bank 1	Position of the throttle valve	> 1 + B1 + B2 %	(Offset learning aborted	= FALSE -	0.3 sec once per driving cycle	1 Trip
			Where:		OR			
			(B1) Offset for the lower mechanical stop because of dirt	= Calculated parameter %	Offset learning successful	= FALSE -		
					)			
			(B2) Range for actual position (offset to desired value) to check whether open spring spread position is reached	= 1 %	Offset check at cold temperature conditions active	= FALSE -		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					(			
					(			
					(	= TRUE -		
					Return spring check aborted			
					OR			
					Return spring check successful	= TRUE -		
					)			
					Return spring check fault is set	= FALSE -		
					)			
					OR			
					Device type	> 0 -		
					)			
					(			
					Offset learning will be enabled during ECU is in drive state when below conditions are satisfied for time	> 29 sec		
					(			
					(			
					(			
					Offset learning active	= TRUE -		
					OR			
					(			
					Offset learning active	= FALSE -		
					(			
					The powerstage of the throttle actuator is commanded on	= TRUE -		
					Battery voltage	> 7.5 V		
					)			
					)			
					)			
					OR			
					Power save is active	= TRUE -		
					)			
					Limp home driving mode requested	= FALSE -		
					Safety fuel cut off requested	= FALSE -		
					Torque limitation requested	= FALSE -		
					)			
					(	= FALSE -		
					Long term and short term adaptation chosen			
					OR			
					(	= TRUE -		
					Long term and short term adaptation chosen			
					Long term and short term is released	= TRUE -		
					)			
					)			
					OR			
					(			
					(			
					First learning performed	= FALSE -		
					OR			
					Limp air position is not plausible	= TRUE -		
					OR			
					External trigger to start offset learning	= TRUE -		
					)			
					(	= TRUE -		
					ECU is in drive state			
					OR			
					ECU is in post drive state for time	> 5 sec		
					)			
					)			
					OR			
					ECU is in post drive state for time	> 5 sec		
					)			
					Offset learning will be enabled when below conditions are satisfied	= TRUE -		
					(			
					(			
					(			
					Offset learning active	= TRUE -		
					OR			
					(			
					Offset learning active	= FALSE -		
					(			
					The powerstage of the throttle actuator is commanded on	= TRUE -		
					Battery voltage	> 7.5 V		
					)			
					)			
					)			
					OR			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
							Power save is active	=	TRUE	-		
							)					
							Limp home driving mode requested	=	FALSE	-		
							Safety fuel cut off requested	=	FALSE	-		
							Torque limitation requested	=	FALSE	-		
							)					
							Vehicle speed	<=	0.62150404	mph		
							Engine speed	<=	300	rpm		
							Battery voltage	<=	655.34	V		
							Battery voltage	>=	10	V		
							Intake air temperature before throttle valve	<=	143.26	deg C		
							Intake air temperature before throttle valve	>=	5.26	deg C		
							Engine coolant temperature	<=	100.46	deg C		
							Engine coolant temperature	>=	5.26	deg C		
							No pending or confirmed DTCs	=	see sheet inhibit tables	-		
							Basic enable conditions met	=	see sheet enable tables	-		
		Path 3: Throttle valve return spring failure check for Bank 1	(				(	=	FALSE	-	0.36 sec once per driving cycle	1 Trip
			(				Offset learning aborted					
			Limp air position is implausible	=	TRUE	-	OR					
			OR				Offset learning successful	=	FALSE	-		
							)					
			First learning performed	=	FALSE	-	Offset check at cold temperature conditions active	=	FALSE	-		
			)				(					
							(					
			Position of the throttle valve	>	A * C1	V	(	=	TRUE	-		
							Return spring check aborted					
			for time	>=	0.36	sec	OR					
			)				Return spring check successful	=	TRUE	-		
							)					
			OR				Return spring check fault is set	=	FALSE	-		
							)					
			(				OR					
			Limp air position is implausible	=	FALSE	-	Device type	>	0	-		
							)					
			First learning performed	=	TRUE	-	(					
			Position of the throttle valve	>	Limp home position of throttle valve + 3%	%	Offset learning will be enabled during ECU is in drive state when below conditions are satisfied for time	>	29	sec		
							(					
			Limp air position is implausible when:				(					
							(					
			Absolute difference of the deviation of limp air position sensor voltage at ECU start from lower mechanical stop position sensor voltage and the deviation of actual learned limp air position sensor voltage from lower mechanical stop position sensor voltage	>	0.15503	V	Offset learning active	=	TRUE	-		
			for time	>=	0.36	sec	OR					
			)				(					
			Where:				Offset learning active	=	FALSE	-		
			(A) Gradient of the throttle valve angle	=	100% / ((V12 - V11) + (V21 - V22)) * 0.5	%/V	(					
			(C1) Threshold for maximum absolute limp air position allowed	=	1.39771	V	The powerstage of the throttle actuator is commanded on	=	TRUE	-		
			(V12) Actual learned sensor voltage of sensor 1 at the upper mechanical stop				Battery voltage	>	7.5	V		
			(V11) Actual learned sensor voltage of sensor 1 at the lower mechanical stop				)					
							)					
							)					
			(V21) Actual learned sensor voltage of sensor 2 at the lower mechanical stop				OR					
			(V22) Actual learned sensor voltage of sensor 2 at the upper mechanical stop				Power save is active	=	TRUE	-		
							)					
							Limp home driving mode requested	=	FALSE	-		
							Safety fuel cut off requested	=	FALSE	-		
							Torque limitation requested	=	FALSE	-		
							)					
							(	=	FALSE	-		
							Long term and short term adaptation chosen					
							OR					
							(	=	TRUE	-		
							Long term and short term adaptation chosen					
							Long term and short term is released	=	TRUE	-		
							)					
							)					
							OR					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					(			
					(			
					First learning performed	= FALSE -		
					OR			
					Limp air position is not plausible	= TRUE -		
					OR			
					External trigger to start offset learning	= TRUE -		
					)			
					(	= TRUE -		
					ECU is in drive state			
					OR			
					ECU is in post drive state for time	> 5 sec		
					)			
					)			
					OR			
					ECU is in post drive state for time	> 5 sec		
					)			
					Offset learning will be enabled when below conditions are satisfied	= TRUE -		
					(			
					(			
					(			
					Offset learning active	= TRUE -		
					OR			
					(			
					Offset learning active	= FALSE -		
					(			
					The powerstage of the throttle actuator is commanded on	= TRUE -		
					Battery voltage	> 7.5 V		
					)			
					)			
					)			
					OR			
					Power save is active	= TRUE -		
					)			
					Limp home driving mode requested	= FALSE -		
					Safety fuel cut off requested	= FALSE -		
					Torque limitation requested	= FALSE -		
					)			
					Vehicle speed	<= 0.62150404 mph		
					Engine speed	<= 300 rpm		
					Battery voltage	<= 655.34 V		
					Battery voltage	>= 10 V		
					Intake air temperature before throttle valve	<= 143.26 deg C		
					Intake air temperature before throttle valve	>= 5.26 deg C		
					Engine coolant temperature	<= 100.46 deg C		
					Engine coolant temperature	>= 5.26 deg C		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
		Path 4: Throttle valve return spring failure while spreading the return spring for Bank 1	Position of the throttle valve	<= (D1 + D2) - D3 %	(	= FALSE -	0.2 sec once per driving cycle	1 Trip
					Offset learning aborted			
			Where:		OR			
			(D1) Limp home position of the throttle valve	= Calculated parameter %	Offset learning successful	= FALSE -		
					)			
			(D2) Value by which return spring is spread starting from power off position	= 15 %	Offset check at cold temperature conditions active	= FALSE -		
			(D3) Range for actual position (offset to desired value) to check whether return spring spread position is reached	= 2 %	(			
					(			
					(	= TRUE -		
					Return spring check aborted			
					OR			
					Return spring check successful	= TRUE -		
					)			
					Return spring check fault is set	= FALSE -		
					)			
					OR			
					Device type	> 0 -		
					)			
					(			
					Offset learning will be enabled during ECU is in drive state when below conditions are satisfied for time	> 29 sec		
					(			
					(			
					(			
					Offset learning active	= TRUE -		
					OR			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					(					
					Offset learning active	=	FALSE	-		
					(					
					The powerstage of the throttle actuator is commanded on	=	TRUE	-		
					Battery voltage	>	7.5	V		
					)					
					)					
					)					
					OR					
					Power save is active	=	TRUE	-		
					)					
					Limp home driving mode requested	=	FALSE	-		
					Safety fuel cut off requested	=	FALSE	-		
					Torque limitation requested	=	FALSE	-		
					)					
					(	=	FALSE	-		
					Long term and short term adaptation chosen					
					OR					
					(	=	TRUE	-		
					Long term and short term adaptation chosen					
					Long term and short term is released	=	TRUE	-		
					)					
					)					
					OR					
					(					
					(					
					First learning performed	=	FALSE	-		
					OR					
					Limp air position is not plausible	=	TRUE	-		
					OR					
					External trigger to start offset learning	=	TRUE	-		
					)					
					(	=	TRUE	-		
					ECU is in drive state					
					OR					
					ECU is in post drive state for time	>	5	sec		
					)					
					)					
					OR					
					ECU is in post drive state for time	>	5	sec		
					)					
					Offset learning will be enabled when below conditions are satisfied	=	TRUE	-		
					(					
					(					
					(					
					Offset learning active	=	TRUE	-		
					OR					
					(					
					Offset learning active	=	FALSE	-		
					(					
					The powerstage of the throttle actuator is commanded on	=	TRUE	-		
					Battery voltage	>	7.5	V		
					)					
					)					
					)					
					OR					
					Power save is active	=	TRUE	-		
					)					
					Limp home driving mode requested	=	FALSE	-		
					Safety fuel cut off requested	=	FALSE	-		
					Torque limitation requested	=	FALSE	-		
					)					
					Vehicle speed	<=	0.62150404	mph		
					Engine speed	<=	300	rpm		
					Battery voltage	<=	655.34	V		
					Battery voltage	>=	10	V		
					Intake air temperature before throttle valve	<=	143.26	deg C		
					Intake air temperature before throttle valve	>=	5.26	deg C		
					Engine coolant temperature	<=	100.46	deg C		
					Engine coolant temperature	>=	5.26	deg C		
					No pending or confirmed DTCs	=	see sheet inhibit tables	-		
					Basic enable conditions met	=	see sheet enable tables	-		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
	P2100	**Path 1 :** Diagnosis of the Throttle Actuator Control Bank 1 H bridge circuit for open circuit fault	Voltage low during driver OFF state (indicates open circuit)	= Open Circuit: ≥ 200 K Ω impedance between ECU pin and load -	(ECU is in DRIVE state	= TRUE -	0.799805 sec continuous	1 Trip
					OR ECU is in POSTDRIVE state	= TRUE -		
					) The powerstage of the actuator is switched on, following conditions:	= TRUE -		
					(State of the thottle valve powerstage bank 1	> 0 -		
					) Release of adaptation	= FALSE -		
					Actual position is valid	= TRUE -		
					Request safety fuel cut off SKA bank 1, following condition:	= FALSE -		
					(Request reversible safety fuel cut off SKA bank 1, which has following condition:	= FALSE -		
					(Battery voltage for throttle valve operation sufficient bank 1	> 7.5 V		
					OR Engine speed	> 1000 rpm		
					) Limp home position not reached bank 1	= FALSE -		
					) No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
		Path 2: Check throttle valve power stage IC for over temperature	Over temperature error from the power stage is detected	= TRUE -	(ECU is in DRIVE state	= TRUE -	continuous	1 Trip
					OR ECU is in POSTDRIVE state	= TRUE -		
					) The powerstage of the actuator is switched on, following conditions:	= TRUE -		
					(State of the thottle valve powerstage bank 1	> 0 -		
					) Release of adaptation	= FALSE -		
					Actual position is valid	= TRUE -		
					Request safety fuel cut off SKA bank 1, following condition:	= FALSE -		
					(Request reversible safety fuel cut off SKA bank 1, which has following condition:	= FALSE -		
					(Battery voltage for throttle valve operation sufficient bank 1	> 7.5 V		
					OR Engine speed	> 1000 rpm		
					) Limp home position not reached bank 1	= FALSE -		
					) No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
		Path 3 : Diagnoses the Turbine bypass valve H bridge high side driver circuit at out 1 for circuit low fault	Voltage low during driver ON state (indicates short circuit to ground)	= Short to ground: ≤ 0.5 Ω impedance between signal and controller ground -	(ECU is in DRIVE state	= TRUE -	continuous	1 Trip
		Diagnoses the Turbine bypass valve H bridge low side driver circuit at out 2 for circuit high fault	OR Voltage high during driver ON state (indicates short circuit to battery)	= Short to power: ≤ 0.5 Ω impedance between signal and controller power -	OR ECU is in POSTDRIVE state)	= TRUE -		
					The powerstage of the actuator is switched on, following conditions:	= TRUE -		
					(State of the thottle valve powerstage bank 1	> 0 -		
					) Release of adaptation	= FALSE -		
					Actual position is valid	= TRUE -		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Request safety fuel cut off SKA bank 1, following condition:	= FALSE -		
					(			
					Request reversible safety fuel cut off SKA bank 1, which has following condition:	= FALSE -		
					(			
					Battery voltage for throttle valve operation sufficient bank 1	> 7.5 V		
					OR			
					Engine speed	> 1000 rpm		
					)			
					Limp home position not reached bank 1	= FALSE -		
					)			
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
Throttle Actuator - B2	P218A	Throttle actuator Bank2 first initialization - lower mechanical stop learning fail	(		(Offset learning aborted	= FALSE -	Once per driving cycle	1 Trip
			Initial learning of the closed throttle valve position has started	= TRUE -	OR			
			Aborted due to one of the enable conditions no longer being fulfilled (see secondary parameters)	= TRUE -	Offset learning successful	= FALSE -		
			)		)			
			OR		Offset check at cold temperature conditions active	= FALSE -		
		First learning of closed mechanical stop: Throttle position at lower mechanical stop	Lower mechanical stop offset learning aborted at step 1 (moving throttle valve to the closed position) due to the following reason (closed position has not reached):		((			
			(		(Return spring check aborted	= TRUE -		
			(		OR			
			Difference between actual throttle position sensor2 at lower mechanical stop and desired	> 1.5 %	Return spring check successful	= TRUE -		
					)			
			)		Return spring check fault for bank 2 is set	= FALSE -		
					)			
			for time	>= 1 sec	OR			
			)		Device type	> 0 -		
					)			
			OR		(			
			Lower mechanical stop offset learning aborted at step 2 (pressing throttle valve to the low mechanical stop with certain force) due to the following reason (duty cycle ratio has not reached threshold):		Offset learning will be enabled during ECU is in drive state when below conditions are satisfied for time	> 29 sec		
					(			
			(		((			
		First learning of closed mechanical stop: Duty cycle at lower mechanical stop and resulting change in sensor voltage	Calculated duty cycle ratio	<= 60 %	Offset learning active	= TRUE -		
			)		OR			
			for time	>= 1 sec	(			
			OR		Offset learning active	= FALSE -		
		Range check of learned sensor voltage at low mechanical stop	Lower mechanical stop offset learning aborted at step 3 (sensor offset learning at low mechanical stop) due to one of the the following conditions:		(			
			(		The powerstage of the throttle actuator for bank 2 is commanded on	= TRUE -		
			Lower mechanical stop voltage sensor 1	> 0.69458 V	Battery voltage	> 7.5 V		
			OR		)			
					)			
					)			
			Lower mechanical stop voltage sensor 1	< 0.37964 V	OR			
			OR		Power save is active for bank 2	= TRUE -		
					)			
			Lower mechanical stop voltage sensor 2	> 4.61426 V	Limp home driving mode requested for bank 2	= FALSE -		
			OR		Safety fuel cut off requested for bank 2	= FALSE -		
			Lower mechanical stop voltage sensor 2	< 4.36157 V	Torque limitation requested for bank 2	= FALSE -		
					)			
			)		(	= FALSE -		
					Long term and short term adaptation chosen			
					OR			
					(	= TRUE -		
					Long term and short term adaptation chosen			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Long term and short term is released	= TRUE -		
					)			
					)			
					OR			
					(			
					(			
					First learning performed	= FALSE -		
					OR			
					Limp air position is not plausible	= TRUE -		
					OR			
					External trigger to start offset learning	= TRUE -		
					)			
					(	= TRUE -		
					ECU is in drive state			
					OR			
					ECU is in post drive state for time	> 5 sec		
					)			
					)			
					OR			
					ECU is in post drive state for time	> 5 sec		
					)			
					Offset learning will be enabled when below conditions are satisfied	= TRUE -		
					(			
					(			
					(			
					Offset learning active	= TRUE -		
					OR			
					(			
					Offset learning active	= FALSE -		
					(			
					The powerstage of the throttle actuator for bank 2 is commanded on	= TRUE -		
					Battery voltage	> 7.5 V		
					)			
					)			
					)			
					OR			
					Power save is active for bank 2	= TRUE -		
					)			
					Limp home driving mode requested for bank 2	= FALSE -		
					Safety fuel cut off requested for bank 2	= FALSE -		
					Torque limitation requested for bank 2	= FALSE -		
					)			
					Vehicle speed	<= 0.62150404 mph		
					Engine speed	<= 300 rpm		
					Battery voltage	<= 655.34 V		
					Battery voltage	>= 10 V		
					Intake air temperature before throttle valve	<= 143.26 deg C		
					Intake air temperature before throttle valve	>= 5.26 deg C		
					Engine coolant temperature	<= 100.46 deg C		
					Engine coolant temperature	>= 5.26 deg C		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
		Throttle actuator Bank2 - lower mechanical stop learning fail	Lower mechanical stop offset learning aborted at step 2 (pressing throttle valve to the low mechanical stop with certain force) due to the following reason (duty cycle ratio has not reached threshold):		(		1 sec Once per driving cycle	1 Trip
					Offset learning aborted	= FALSE -		
			(		OR			
			Calculated duty cycle ratio	<= 60 %	Offset learning successful	= FALSE -		
					)			
			for time	>= 1 sec	Offset check at cold temperature conditions active	= FALSE -		
			)		(			
					(			
			OR		(	= TRUE -		
					Return spring check aborted			
			Lower mechanical stop offset learning aborted at step 3 (sensor offset learning at low mechanical stop) due to one of the the following conditions:		OR			
			(		Return spring check successful	= TRUE -		
					)			
			Lower mechanical stop voltage sensor 1	> 0.69458 V	Return spring check fault for bank 2 is set	= FALSE -		
					)			
			OR		OR			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
			Lower mechanical stop voltage sensor 1	<	0.37964	V	Device type	>	0	-		
			OR				)					
			Lower mechanical stop voltage sensor 2	>	4.61426	V	(Offset learning will be enabled during ECU is in drive state when below conditions are satisfied for time	>	29	sec		
			OR				(((					
			Lower mechanical stop voltage sensor 2	<	4.36157	V	Offset learning active	=	TRUE	-		
			)				OR (					
							Offset learning active	=	FALSE	-		
							(The powerstage of the throttle actuator for bank 2 is commanded on	=	TRUE	-		
							Battery voltage	>	7.5	V		
							))) OR					
							Power save is active for bank 2	=	TRUE	-		
							) Limp home driving mode requested for bank 2	=	FALSE	-		
							Safety fuel cut off requested for bank 2	=	FALSE	-		
							Torque limitation requested for bank 2	=	FALSE	-		
							) (Long term and short term adaptation chosen	=	FALSE	-		
							OR (Long term and short term adaptation chosen	=	TRUE	-		
							Long term and short term is released	=	TRUE	-		
							)) OR ((					
							First learning performed	=	FALSE	-		
							OR Limp air position is not plausible	=	TRUE	-		
							OR External trigger to start offset learning	=	TRUE	-		
							) (ECU is in drive state	=	TRUE	-		
							OR ECU is in post drive state for time	>	5	sec		
							)) OR					
							ECU is in post drive state for time	>	5	sec		
							) Offset learning will be enabled when below conditions are satisfied	=	TRUE	-		
							(((					
							Offset learning active	=	TRUE	-		
							OR (					
							Offset learning active	=	FALSE	-		
							(The powerstage of the throttle actuator for bank 2 is commanded on	=	TRUE	-		
							Battery voltage	>	7.5	V		
							))) OR					
							Power save is active for bank 2	=	TRUE	-		
							) Limp home driving mode requested for bank 2	=	FALSE	-		
							Safety fuel cut off requested for bank 2	=	FALSE	-		
							Torque limitation requested for bank 2	=	FALSE	-		
							) Vehicle speed	<=	0.62150404	mph		
							Engine speed	<=	300	rpm		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Battery voltage	<= 655.34 V		
					Battery voltage	>= 10 V		
					Intake air temperature before throttle valve	<= 143.26 deg C		
					Intake air temperature before throttle valve	>= 5.26 deg C		
					Engine coolant temperature	<= 100.46 deg C		
					Engine coolant temperature	>= 5.26 deg C		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
	P30E5	**Path 1:** Throttle position at lower mechanical stop exceeded maximum limit for Throttle Position Sensor Bank 2	**Step 1 (**Learning of the closed throttle valve position)**:**		(Offset learning aborted	= FALSE -	1 sec once per driving cycle	1 Trip
			Actuator throttle position	> (Vmax - V) * Tgrad + Offset %	OR			
			Where:		Offset learning successful)	= FALSE -		
			Vmax (Maximum voltage value allowed at mechanical stop, position sensor bank 2)	= 0.69458 V	Offset check at cold temperature conditions active	= FALSE -		
			V (Actual learned sensor voltage of sensor bank 2 at the lower mechanical stop)	= sensed voltage V	((			
			Tgrad (Gradient of the throttle valve angle versus sensor bank 2 voltage)	= calculated value % / V	(Return spring check aborted	= TRUE -		
			Offset (Offset to Desired position value to start ramping into mechanical stop)	= 1.5 %	OR			
					Return spring check successful)	= TRUE -		
		Path 2: Range check of learned sensor voltage at lower mechanical stop for Throttle Position Sensor Bank 2 : Maximum learning limit exceeded	Low mechanical stop first learning has been performed	= TRUE -	Return spring check fault for bank 2 is set)	= FALSE -		
			and **Step 3** (If no fault in step 2 then check range of learned sensor voltages at lower mechanical stop)**:**		OR Device type)	> 0 -		
			Actual learned sensor voltage of sensor 1 at the mechanical stop	> 0.69458 V	(			
			OR		Offset learning will be enabled during ECU is in drive state when below conditions are satisfied for time ((	> 29 sec		
			Actual learned sensor voltage of sensor 2 at the mechanical stop	> 4.61426 V	(			
					Offset learning active OR (	= TRUE -		
					Offset learning active (	= FALSE -		
					The powerstage of the throttle actuator for bank 2 is commanded on	= TRUE -		
					Battery voltage))) OR	> 7.5 V		
					Power save is active for bank 2)	= TRUE -		
					Limp home driving mode requested for bank 2	= FALSE -		
					Safety fuel cut off requested for bank 2	= FALSE -		
					Torque limitation requested for bank 2)	= FALSE -		
					(Long term and short term adaptation chosen OR	= FALSE -		
					(Long term and short term adaptation chosen	= TRUE -		
					Long term and short term is released)) OR ((	= TRUE -		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					First learning performed	= FALSE -		
					OR			
					Limp air position is not plausible	= TRUE -		
					OR			
					External trigger to start offset learning	= TRUE -		
					)			
					(	= TRUE -		
					ECU is in drive state			
					OR			
					ECU is in post drive state for time	> 5 sec		
					)			
					)			
					OR			
					ECU is in post drive state for time	> 5 sec		
					)			
					Offset learning will be enabled when below conditions are satisfied	= TRUE -		
					(			
					(			
					(			
					Offset learning active	= TRUE -		
					OR			
					(			
					Offset learning active	= FALSE -		
					(			
					The powerstage of the throttle actuator for bank 2 is commanded on	= TRUE -		
					Battery voltage	> 7.5 V		
					)			
					)			
					)			
					OR			
					Power save is active for bank 2	= TRUE -		
					)			
					Limp home driving mode requested for bank 2	= FALSE -		
					Safety fuel cut off requested for bank 2	= FALSE -		
					Torque limitation requested for bank 2	= FALSE -		
					)			
					Vehicle speed	<= 0.62150404 mph		
					Engine speed	<= 300 rpm		
					Battery voltage	<= 655.34 V		
					Battery voltage	>= 10 V		
					Intake air temperature before throttle valve	<= 143.26 deg C		
					Intake air temperature before throttle valve	>= 5.26 deg C		
					Engine coolant temperature	<= 100.46 deg C		
					Engine coolant temperature	>= 5.26 deg C		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
	P30E6	Range check of learned sensor voltage at lower mechanical stop for Throttle Position Sensor Bank 2: Minimum learning limit exceeded	Low mechanical stop first learning has been performed	= TRUE -	(		1 sec once per driving cycle	1 Trip
					Offset learning aborted	= FALSE -		
			and		OR			
			Step 3 (If no fault in step 2 then check range of learned sensor voltages at lower mechanical stop):		Offset learning successful	= FALSE -		
					)			
			Actual learned sensor voltage of sensor 1 at the mechanical stop	<= 0.69458 V	Offset check at cold temperature conditions active	= FALSE -		
			Actual learned sensor voltage of sensor 2 at the mechanical stop	<= 4.61426 V	(			
			(		(			
					(	= TRUE -		
					Return spring check aborted			
			Actual learned sensor voltage of sensor 1 at the mechanical stop	< 0.37964 V	OR			
			OR		Return spring check successful	= TRUE -		
					)			
			Actual learned sensor voltage of sensor 2 at the mechanical stop	< 4.36157 V	Return spring check fault for bank 2 is set	= FALSE -		
					)			
			)		OR			
					Device type	> 0 -		
					)			
					(			
					Offset learning will be enabled during ECU is in drive state when below conditions are satisfied for time	> 29 sec		
					(			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					(			
					(			
					Offset learning active	= TRUE -		
					OR			
					(			
					Offset learning active	= FALSE -		
					(			
					The powerstage of the throttle actuator for bank 2 is commanded on	= TRUE -		
					Battery voltage	> 7.5 V		
					)			
					)			
					)			
					OR			
					Power save is active for bank 2	= TRUE -		
					)			
					Limp home driving mode requested for bank 2	= FALSE -		
					Safety fuel cut off requested for bank 2	= FALSE -		
					Torque limitation requested for bank 2	= FALSE -		
					)			
					(	= FALSE -		
					Long term and short term adaptation chosen			
					OR			
					(	= TRUE -		
					Long term and short term adaptation chosen			
					Long term and short term is released	= TRUE -		
					)			
					)			
					OR			
					(			
					(			
					First learning performed	= FALSE -		
					OR			
					Limp air position is not plausible	= TRUE -		
					OR			
					External trigger to start offset learning	= TRUE -		
					)			
					(	= TRUE -		
					ECU is in drive state			
					OR			
					ECU is in post drive state for time	> 5 sec		
					)			
					)			
					OR			
					ECU is in post drive state for time	> 5 sec		
					)			
					Offset learning will be enabled when below conditions are satisfied	= TRUE -		
					(			
					(			
					(			
					Offset learning active	= TRUE -		
					OR			
					(			
					Offset learning active	= FALSE -		
					(			
					The powerstage of the throttle actuator for bank 2 is commanded on	= TRUE -		
					Battery voltage	> 7.5 V		
					)			
					)			
					)			
					OR			
					Power save is active for bank 2	= TRUE -		
					)			
					Limp home driving mode requested for bank 2	= FALSE -		
					Safety fuel cut off requested for bank 2	= FALSE -		
					Torque limitation requested for bank 2	= FALSE -		
					)			
					Vehicle speed	<= 0.62150404 mph		
					Engine speed	<= 300 rpm		
					Battery voltage	<= 655.34 V		
					Battery voltage	>= 10 V		
					Intake air temperature before throttle valve	<= 143.26 deg C		
					Intake air temperature before throttle valve	>= 5.26 deg C		
					Engine coolant temperature	<= 100.46 deg C		
					Engine coolant temperature	>= 5.26 deg C		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required			MIL Illum.
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enable conditions met	=	see sheet enable tables	-				
	P210B	Rationality check of throttle actuator control Bank 2 deviation - Actual actuator position is continuously monitored against commanded value	(				(ECU is in DRIVE state	=	TRUE	-	0.5	sec	continuous	1 Trip
			Difference between actual actuator position and its commanded value	>	A * B + C	%	OR							
			OR				ECU is in POSTDRIVE state	=	TRUE	-				
							)							
			Difference between commanded value and actual actuator position	>	(A * B + C)	%	(Powerstage switched off by diagnosis	=	TRUE	-				
			)				)							
			Where:				for time	>=	0.799805	sec				
			(A) Rate of change of the commanded value	=	calculated value	% / s	The powerstage of the actuator is switched on, following conditions:	=	TRUE	-				
			(B) Factor for allowed control deviation	=	0.02	-	(							
			(C) Allowed control deviation in steady state	=	5	%	State of the thottle valve powerstage bank 2	>	0	-				
							)							
							Release of adaptation	=	FALSE	-				
							Actual position is valid	=	TRUE	-				
							Request safety fuel cut off SKA bank 2, following condition:	=	FALSE	-				
							(							
							Request reversible safety fuel cut off SKA bank 2, which has following condition:	=	FALSE	-				
							(							
							Battery voltage for throttle valve operation sufficient bank 2	>	7.5	V				
							OR							
							Engine speed	>	1000	rpm				
							)							
							Limp home position not reached bank 2	=	FALSE	-				
							)							
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enable conditions met	=	see sheet enable tables	-				
	P0639	Range check of Throttle Actuator Control duty cycle Bank 2	Absolute value of Throttle valve duty cycle ratio bank 2 where	>	Minimum(A, (B*C))	%	(ECU is in DRIVE state	=	TRUE	-	0.6001	sec	continuous	1 Trip
							OR							
			A - Upper threshold for Throttle Actuator Control duty cycle Bank 2 diagnosis in case of low battery voltage		95	%	ECU is in POSTDRIVE state)	=	TRUE	-				
			B - Upper threshold for Throttle Actuator Control duty cycle bank 2 diagnosis		80	%	Absolute value of position controller of the throttle valve bank 2 of motor bench one / gradient of the filtered desired value	<	78.1	%/s				
			C - Factor for battery voltage compensation bank 2		13.5V / measured battery voltage [V]	-	The powerstage of the actuator is switched on, following conditions:	=	TRUE	-				
							(							
							State of the thottle valve powerstage bank 2	>	0	-				
							)							
							Release of adaptation	=	FALSE	-				
							Actual position is valid	=	TRUE	-				
							Request safety fuel cut off SKA bank 2, following condition:	=	FALSE	-				
							(							
							Request reversible safety fuel cut off SKA bank 2, which has following condition:	=	FALSE	-				
							(							

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Battery voltage for throttle valve operation sufficient bank 2	= TRUE -		
					OR			
					Engine speed	> 1000 rpm		
					)			
					Limp home position not reached bank 2	= FALSE -		
					)			
					Battery voltage for throttle valve operation sufficient for bank 2	= TRUE -		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
	P30E7	**Path 1:** Drift check of limp air position Bank 2 - comparison of actual learned value with first learned limp air position	Absolute difference between actual learned sensor voltage of sensor 1 at limp air position after mean value calculation and first learned sensor voltage of sensor 1 at limp air position	>= 1.40015 V	(Offset learning aborted	= FALSE -	Once per driving cycle	1 Trip
			OR		OR			
			Absolute difference between first learned sensor voltage of sensor 2 at limp air position and actual learned sensor voltage of sensor 2 at limp air position after mean value calculation	>= 1.40015 V	Offset learning successful	= FALSE -		
					)			
					Offset check at cold temperature conditions active	= FALSE -		
					(			
					(			
					(Return spring check aborted	= TRUE -		
					OR			
					Return spring check successful	= TRUE -		
					)			
					Return spring check fault for bank 2 is set	= FALSE -		
					)			
					OR			
					Device type	> 0 -		
					)			
					(			
					Offset learning will be enabled during ECU is in drive state when below conditions are satisfied for time	> 29 sec		
					(			
					(			
					(			
					Offset learning active	= TRUE -		
					OR			
					(			
					Offset learning active	= FALSE -		
					(			
					The powerstage of the throttle actuator for bank 2 is commanded on	= TRUE -		
					Battery voltage	> 7.5 V		
					)			
					)			
					)			
					OR			
					Power save is active for bank 2	= TRUE -		
					)			
					Limp home driving mode requested for bank 2	= FALSE -		
					Safety fuel cut off requested for bank 2	= FALSE -		
					Torque limitation requested for bank 2	= FALSE -		
					)			
					(Long term and short term adaptation chosen	= FALSE -		
					OR			
					(Long term and short term adaptation chosen	= TRUE -		
					Long term and short term is released	= TRUE -		
					)			
					)			
					OR			
					(			
					(			
					First learning performed	= FALSE -		
					OR			
					Limp air position is not plausible	= TRUE -		
					OR			
					External trigger to start offset learning	= TRUE -		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					)			
					(	= TRUE -		
					ECU is in drive state			
					OR			
					ECU is in post drive state for time	> 5 sec		
					)			
					)			
					OR			
					ECU is in post drive state for time	> 5 sec		
					)			
					Offset learning will be enabled when below conditions are satisfied	= TRUE -		
					(			
					(			
					(			
					Offset learning active	= TRUE -		
					OR			
					(			
					Offset learning active	= FALSE -		
					(			
					The powerstage of the throttle actuator for bank 2 is commanded on	= TRUE -		
					Battery voltage	> 7.5 V		
					)			
					)			
					)			
					OR			
					Power save is active for bank 2	= TRUE -		
					)			
					Limp home driving mode requested for bank 2	= FALSE -		
					Safety fuel cut off requested for bank 2	= FALSE -		
					Torque limitation requested for bank 2	= FALSE -		
					)			
					Vehicle speed	<= 0.62150404 mph		
					Engine speed	<= 300 rpm		
					Battery voltage	<= 655.34 V		
					Battery voltage	>= 10 V		
					Intake air temperature before throttle valve	<= 143.26 deg C		
					Intake air temperature before throttle valve	>= 5.26 deg C		
					Engine coolant temperature	<= 100.46 deg C		
					Engine coolant temperature	>= 5.26 deg C		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
		Path 2: Range check of limp air position for Bank 2 - high	Difference between actual learned sensor voltage of sensor 1 at limp air position after mean value calculation and actual learned sensor voltage of sensor 1 at the lower mechanical stop	> 1.40015 V	(Offset learning aborted	= FALSE -	Once per driving cycle	1 Trip
			OR		OR			
			Difference between actual learned sensor voltage of sensor 2 at the lower mechanical stop and actual learned sensor voltage of sensor 2 at limp air position after mean value calculation	> 1.40015 V	Offset learning successful	= FALSE -		
					)			
					Offset check at cold temperature conditions active	= FALSE -		
					(			
					(			
					(Return spring check aborted	= TRUE -		
					OR			
					Return spring check successful	= TRUE -		
					)			
					Return spring check fault for bank 2 is set	= FALSE -		
					)			
					OR			
					Device type	> 0 -		
					)			
					(			
					Offset learning will be enabled during ECU is in drive state when below conditions are satisfied for time	> 29 sec		
					(			
					(			
					(			
					Offset learning active	= TRUE -		
					OR			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
					(					
					Offset learning active	=	FALSE	-		
					(					
					The powerstage of the throttle actuator for bank 2 is commanded on	=	TRUE	-		
					Battery voltage	>	7.5	V		
					)					
					)					
					)					
					OR					
					Power save is active for bank 2	=	TRUE	-		
					)					
					Limp home driving mode requested for bank 2	=	FALSE	-		
					Safety fuel cut off requested for bank 2	=	FALSE	-		
					Torque limitation requested for bank 2	=	FALSE	-		
					)					
					(	=	FALSE	-		
					Long term and short term adaptation chosen					
					OR					
					(	=	TRUE	-		
					Long term and short term adaptation chosen					
					Long term and short term is released	=	TRUE	-		
					)					
					)					
					OR					
					(					
					(					
					First learning performed	=	FALSE	-		
					OR					
					Limp air position is not plausible	=	TRUE	-		
					OR					
					External trigger to start offset learning	=	TRUE	-		
					)					
					(	=	TRUE	-		
					ECU is in drive state					
					OR					
					ECU is in post drive state for time	>	5	sec		
					)					
					)					
					OR					
					ECU is in post drive state for time	>	5	sec		
					)					
					Offset learning will be enabled when below conditions are satisfied	=	TRUE	-		
					(					
					(					
					(					
					Offset learning active	=	TRUE	-		
					OR					
					(					
					Offset learning active	=	FALSE	-		
					(					
					The powerstage of the throttle actuator for bank 2 is commanded on	=	TRUE	-		
					Battery voltage	>	7.5	V		
					)					
					)					
					)					
					OR					
					Power save is active for bank 2	=	TRUE	-		
					)					
					Limp home driving mode requested for bank 2	=	FALSE	-		
					Safety fuel cut off requested for bank 2	=	FALSE	-		
					Torque limitation requested for bank 2	=	FALSE	-		
					)					
					Vehicle speed	<=	0.62150404	mph		
					Engine speed	<=	300	rpm		
					Battery voltage	<=	655.34	V		
					Battery voltage	>=	10	V		
					Intake air temperature before throttle valve	<=	143.26	deg C		
					Intake air temperature before throttle valve	>=	5.26	deg C		
					Engine coolant temperature	<=	100.46	deg C		
					Engine coolant temperature	>=	5.26	deg C		
					No pending or confirmed DTCs	=	see sheet inhibit tables	-		
					Basic enable conditions met	=	see sheet enable tables	-		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
		Path 3: Range check of limp air position for Bank 2 - low	Difference between actual learned sensor voltage of sensor 1 at limp air position after mean value calculation and actual learned sensor voltage of sensor 1 at the lower mechanical stop	<	0.77026	V	(Offset learning aborted	=	FALSE	-	Once per driving cycle	1 Trip
			OR Difference between actual learned sensor voltage of sensor 2 at the lower mechanical stop and actual learned sensor voltage of sensor 2 at limp air position after mean value calculation	<	0.77026	V	OR Offset learning successful)	=	FALSE	-		
							Offset check at cold temperature conditions active	=	FALSE	-		
							(((Return spring check aborted	=	TRUE	-		
							OR Return spring check successful)	=	TRUE	-		
							Return spring check fault for bank 2 is set)	=	FALSE	-		
							OR Device type)	>	0	-		
							(Offset learning will be enabled during ECU is in drive state when below conditions are satisfied for time	>	29	sec		
							(((Offset learning active	=	TRUE	-		
							OR (Offset learning active	=	FALSE	-		
							(The powerstage of the throttle actuator for bank 2 is commanded on	=	TRUE	-		
							Battery voltage)))	>	7.5	V		
							OR Power save is active for bank 2)	=	TRUE	-		
							Limp home driving mode requested for bank 2	=	FALSE	-		
							Safety fuel cut off requested for bank 2	=	FALSE	-		
							Torque limitation requested for bank 2)	=	FALSE	-		
							(Long term and short term adaptation chosen	=	FALSE	-		
							OR (Long term and short term adaptation chosen	=	TRUE	-		
							Long term and short term is released))	=	TRUE	-		
							OR ((First learning performed	=	FALSE	-		
							OR Limp air position is not plausible	=	TRUE	-		
							OR External trigger to start offset learning)	=	TRUE	-		
							(ECU is in drive state	=	TRUE	-		
							OR ECU is in post drive state for time))	>	5	sec		
							OR ECU is in post drive state for time)	>	5	sec		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Offset learning will be enabled when below conditions are satisfied	= TRUE -		
					(			
					(			
					(			
					Offset learning active	= TRUE -		
					OR			
					(			
					Offset learning active	= FALSE -		
					(			
					The powerstage of the throttle actuator for bank 2 is commanded on	= TRUE -		
					Battery voltage	> 7.5 V		
					)			
					)			
					)			
					OR			
					Power save is active for bank 2	= TRUE -		
					)			
					Limp home driving mode requested for bank 2	= FALSE -		
					Safety fuel cut off requested for bank 2	= FALSE -		
					Torque limitation requested for bank 2	= FALSE -		
					)			
					Vehicle speed	<= 0.62150404 mph		
					Engine speed	<= 300 rpm		
					Battery voltage	<= 655.34 V		
					Battery voltage	>= 10 V		
					Intake air temperature before throttle valve	<= 143.26 deg C		
					Intake air temperature before throttle valve	>= 5.26 deg C		
					Engine coolant temperature	<= 100.46 deg C		
					Engine coolant temperature	>= 5.26 deg C		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
		Path 4: Limp air position drift Bank 2 - comparison with lower mechanical stop sensor voltage	(		(	= FALSE -	Once per driving cycle	1 Trip
					Offset learning aborted			
			Actual offset learning step	= 4 -	OR			
			and		Offset learning successful	= FALSE -		
					)			
			(|A - B|) Absolute value of the actual learned value minus last stored value	> 0.15503 V	Offset check at cold temperature conditions active	= FALSE -		
			Where:		(			
					(			
			A	= (A1 + A2) / 2 V	(	= TRUE -		
					Return spring check aborted			
			B	= (B1 + B2) / 2 V	OR			
			A1	= A11 - A12 V	Return spring check successful	= TRUE -		
					)			
			A2	= A22 - A21 V	Return spring check fault for bank 2 is set	= FALSE -		
					)			
			B1	= B11 - B12 V	OR			
			B2	= B22 - B21 V	Device type	> 0 -		
					)			
			(A11) Learned sensor voltage of sensor 1 at limp air position, bank 2		(			
			(A12) Learned reference sensor voltage of sensor 1 at the lower mechanical stop, bank 2		Offset learning will be enabled during ECU is in drive state when below conditions are satisfied for time	> 29 sec		
					(			
			(A22) Learned reference sensor voltage of sensor 2 at the lower mechanical stop		(			
					(			
			(A21) Learned sensor voltage of sensor 2 at limp air position, bank 2		Offset learning active	= TRUE -		
			(B11) Actual learned sensor voltage of sensor 1 at limp air position after mean value calculation		OR			
			(B12) Learned reference sensor voltage of sensor 1 at the lower mechanical stop, bank 2		(			
			(B22) Learned reference sensor voltage of sensor 2 at the lower mechanical stop, bank 2		Offset learning active	= FALSE -		
			(B21) Actual learned sensor voltage of sensor 2 at limp air position after mean value calculation		(			
			)		The powerstage of the throttle actuator for bank 2 is commanded on	= TRUE -		
					Battery voltage	> 7.5 V		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					)			
					)			
					)			
					OR			
					Power save is active for bank 2	= TRUE -		
					)			
					Limp home driving mode requested for bank 2	= FALSE -		
					Safety fuel cut off requested for bank 2	= FALSE -		
					Torque limitation requested for bank 2	= FALSE -		
					)			
					(	= FALSE -		
					Long term and short term adaptation chosen			
					OR			
					(	= TRUE -		
					Long term and short term adaptation chosen			
					Long term and short term is released	= TRUE -		
					)			
					)			
					OR			
					(			
					(			
					First learning performed	= FALSE -		
					OR			
					Limp air position is not plausible	= TRUE -		
					OR			
					External trigger to start offset learning	= TRUE -		
					)			
					(	= TRUE -		
					ECU is in drive state			
					OR			
					ECU is in post drive state for time	> 5 sec		
					)			
					)			
					OR			
					ECU is in post drive state for time	> 5 sec		
					)			
					Offset learning will be enabled when below conditions are satisfied	= TRUE -		
					(			
					(			
					(			
					Offset learning active	= TRUE -		
					OR			
					(			
					Offset learning active	= FALSE -		
					(			
					The powerstage of the throttle actuator for bank 2 is commanded on	= TRUE -		
					Battery voltage	> 7.5 V		
					)			
					)			
					)			
					OR			
					Power save is active for bank 2	= TRUE -		
					)			
					Limp home driving mode requested for bank 2	= FALSE -		
					Safety fuel cut off requested for bank 2	= FALSE -		
					Torque limitation requested for bank 2	= FALSE -		
					)			
					Vehicle speed	<= 0.62150404 mph		
					Engine speed	<= 300 rpm		
					Battery voltage	<= 655.34 V		
					Battery voltage	>= 10 V		
					Intake air temperature before throttle valve	<= 143.26 deg C		
					Intake air temperature before throttle valve	>= 5.26 deg C		
					Engine coolant temperature	<= 100.46 deg C		
					Engine coolant temperature	>= 5.26 deg C		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
	P211D	**Path 1:** Throttle valve opening spring check - opening failure for Bank 2	Here it is checked whether opening spring can be returned by mechanical force only to the defined limp home position in the defined time (		(Offset learning aborted	= FALSE -	0.26 sec once per driving cycle	1 Trip
			Actual offset learning step	= 4 -	OR			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
			(				Offset learning successful	=	FALSE	-		
			(				)					
			Limp air position is implausible	=	TRUE	-	Offset check at cold temperature conditions active	=	FALSE	-		
			OR				(					
							(					
			First learning performed	=	FALSE	-	(Return spring check aborted	=	TRUE	-		
			)				OR					
			Position of the throttle valve	<=	A * C1	%	Return spring check successful	=	TRUE	-		
							)					
			for time	>=	0.26	sec	Return spring check fault for bank 2 is set	=	FALSE	-		
							)					
			)				OR					
			OR				Device type	>	0	-		
							)					
			(				(					
			Limp air position is implausible	=	FALSE	-	Offset learning will be enabled during ECU is in drive state when below conditions are satisfied for time	>	29	sec		
							(					
			First learning performed	=	TRUE	-	(					
							(					
			Position of the throttle valve	<=	Limp home position of throttle valve - 3%	%	Offset learning active	=	TRUE	-		
			Limp air position is implausible when:				OR					
			Absolute difference of the deviation of limp air position sensor voltage at ECU start from lower mechanical stop position sensor voltage and the deviation of actual learned limp air position sensor voltage from lower mechanical stop position sensor voltage	>	0.15503	V	(					
			for time	>=	0.26	sec	Offset learning active	=	FALSE	-		
			)				(					
			)									
			Where:				The powerstage of the throttle actuator for bank 2 is commanded on	=	TRUE	-		
			(A) Gradient of the throttle valve angle	=	100% / ((V12 - V11) + (V21 - V22)) * 0.5	%/V	Battery voltage	>	7.5	V		
			(C1) Threshold for minimum absolute limp air position allowed	=	0.77026	V	)					
							)					
							)					
			(V12) Actual learned sensor voltage of sensor 1 at the upper mechanical stop				OR					
			(V11) Actual learned sensor voltage of sensor 1 at the lower mechanical stop				Power save is active for bank 2	=	TRUE	-		
							)					
			(V21) Actual learned sensor voltage of sensor 2 at the lower mechanical stop				Limp home driving mode requested for bank 2	=	FALSE	-		
			(V22) Actual learned sensor voltage of sensor 2 at the upper mechanical stop				Safety fuel cut off requested for bank 2	=	FALSE	-		
							Torque limitation requested for bank 2	=	FALSE	-		
							)					
							(Long term and short term adaptation chosen	=	FALSE	-		
							OR					
							(Long term and short term adaptation chosen	=	TRUE	-		
							Long term and short term is released	=	TRUE	-		
							)					
							)					
							OR					
							(					
							(					
							First learning performed	=	FALSE	-		
							OR					
							Limp air position is not plausible	=	TRUE	-		
							OR					
							External trigger to start offset learning	=	TRUE	-		
							)					
							(ECU is in drive state	=	TRUE	-		
							OR					
							ECU is in post drive state for time	>	5	sec		
							)					
							)					
							OR					
							ECU is in post drive state for time	>	5	sec		
							)					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Offset learning will be enabled when below conditions are satisfied	= TRUE -		
					(			
					(			
					(			
					Offset learning active	= TRUE -		
					OR			
					(			
					Offset learning active	= FALSE -		
					(			
					The powerstage of the throttle actuator for bank 2 is commanded on	= TRUE -		
					Battery voltage	> 7.5 V		
					)			
					)			
					)			
					OR			
					Power save is active for bank 2	= TRUE -		
					)			
					Limp home driving mode requested for bank 2	= FALSE -		
					Safety fuel cut off requested for bank 2	= FALSE -		
					Torque limitation requested for bank 2	= FALSE -		
					)			
					Vehicle speed	<= 0.62150404 mph		
					Engine speed	<= 300 rpm		
					Battery voltage	<= 655.34 V		
					Battery voltage	>= 10 V		
					Intake air temperature before throttle valve	<= 143.26 deg C		
					Intake air temperature before throttle valve	>= 5.26 deg C		
					Engine coolant temperature	<= 100.46 deg C		
					Engine coolant temperature	>= 5.26 deg C		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
		Path 2: Throttle valve opening spring failure while spreading the opening spring for Bank 2	Position of the throttle valve	> 1 + B1 + B2 %	(		0.3 sec once per driving cycle	1 Trip
					Offset learning aborted	= FALSE -		
			Where:		OR			
			(B1) Offset for the lower mechanical stop because of dirt	= Calculated Parameter %	Offset learning successful	= FALSE -		
					)			
			(B2) Range for actual position (offset to desired value) to check whether open spring spread position is reached	= 1 %	Offset check at cold temperature conditions active	= FALSE -		
					(			
					(			
					(	= TRUE -		
					Return spring check aborted			
					OR			
					Return spring check successful	= TRUE -		
					)			
					Return spring check fault for bank 2 is set	= FALSE -		
					)			
					OR			
					Device type	> 0 -		
					)			
					(			
					Offset learning will be enabled during ECU is in drive state when below conditions are satisfied for time	> 29 sec		
					(			
					(			
					(			
					Offset learning active	= TRUE -		
					OR			
					(			
					Offset learning active	= FALSE -		
					(			
					The powerstage of the throttle actuator for bank 2 is commanded on	= TRUE -		
					Battery voltage	> 7.5 V		
					)			
					)			
					)			
					OR			
					Power save is active for bank 2	= TRUE -		
					)			
					Limp home driving mode requested for bank 2	= FALSE -		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Safety fuel cut off requested for bank 2	= FALSE -		
					Torque limitation requested for bank 2	= FALSE -		
					)			
					(	= FALSE -		
					Long term and short term adaptation chosen			
					OR			
					(	= TRUE -		
					Long term and short term adaptation chosen			
					Long term and short term is released	= TRUE -		
					)			
					)			
					OR			
					(			
					(			
					First learning performed	= FALSE -		
					OR			
					Limp air position is not plausible	= TRUE -		
					OR			
					External trigger to start offset learning	= TRUE -		
					)			
					(	= TRUE -		
					ECU is in drive state			
					OR			
					ECU is in post drive state for time	> 5 sec		
					)			
					)			
					OR			
					ECU is in post drive state for time	> 5 sec		
					)			
					Offset learning will be enabled when below conditions are satisfied	= TRUE -		
					(			
					(			
					(			
					Offset learning active	= TRUE -		
					OR			
					(			
					Offset learning active	= FALSE -		
					(			
					The powerstage of the throttle actuator for bank 2 is commanded on	= TRUE -		
					Battery voltage	> 7.5 V		
					)			
					)			
					)			
					OR			
					Power save is active for bank 2	= TRUE -		
					)			
					Limp home driving mode requested for bank 2	= FALSE -		
					Safety fuel cut off requested for bank 2	= FALSE -		
					Torque limitation requested for bank 2	= FALSE -		
					)			
					Vehicle speed	<= 0.62150404 mph		
					Engine speed	<= 300 rpm		
					Battery voltage	<= 655.34 V		
					Battery voltage	>= 10 V		
					Intake air temperature before throttle valve	<= 143.26 deg C		
					Intake air temperature before throttle valve	>= 5.26 deg C		
					Engine coolant temperature	<= 100.46 deg C		
					Engine coolant temperature	>= 5.26 deg C		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
		Path 3: Throttle valve return spring failure check for Bank 2	(		(	= FALSE -	0.36 sec once per driving cycle	1 Trip
			(		Offset learning aborted			
			Limp air position is implausible	= TRUE -	OR			
			OR		Offset learning successful	= FALSE -		
					)			
			First learning performed	= FALSE -	Offset check at cold temperature conditions active	= FALSE -		
			)		(			
					(			
			Position of the throttle valve	> A * C1 V	(	= TRUE -		
					Return spring check aborted			
			for time	>= 0.36 sec	OR			
			)		Return spring check successful	= TRUE -		
					)			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
			OR		Return spring check fault for bank 2 is set	= FALSE -		
					)			
			(		OR			
			Limp air position is implausible	= FALSE -	Device type	> 0 -		
					)			
			First learning performed	= TRUE -	(			
			Position of the throttle valve	> Limp home position of throttle valve + 3% %	Offset learning will be enabled during ECU is in drive state when below conditions are satisfied for time	> 29 sec		
					(			
			Limp air position is implausible when:		(			
					(			
			Absolute difference of the deviation of limp air position sensor voltage at ECU start from lower mechanical stop position sensor voltage and the deviation of actual learned limp air position sensor voltage from lower mechanical stop position sensor voltage	> 0.15503 V	Offset learning active	= TRUE -		
			for time	>= 0.36 sec	OR			
			)		(			
			Where:		Offset learning active	= FALSE -		
			(A) Gradient of the throttle valve angle	= 100% / ((V12 - V11) + (V21 - V22)) * 0.5 %/V	(			
			(C1) Threshold for minimum absolute limp air position allowed	= 1.39771 V	The powerstage of the throttle actuator for bank 2 is commanded on	= TRUE -		
			(V12) Actual learned sensor voltage of sensor 1 at the upper mechanical stop		Battery voltage	> 7.5 V		
			(V11) Actual learned sensor voltage of sensor 1 at the lower mechanical stop		)			
					)			
					)			
			(V21) Actual learned sensor voltage of sensor 2 at the lower mechanical stop		OR			
			(V22) Actual learned sensor voltage of sensor 2 at the upper mechanical stop		Power save is active for bank 2	= TRUE -		
					)			
					Limp home driving mode requested for bank 2	= FALSE -		
					Safety fuel cut off requested for bank 2	= FALSE -		
					Torque limitation requested for bank 2	= FALSE -		
					)			
					(	= FALSE -		
					Long term and short term adaptation chosen			
					OR			
					(	= TRUE -		
					Long term and short term adaptation chosen			
					Long term and short term is released	= TRUE -		
					)			
					)			
					OR			
					(			
					(			
					First learning performed	= FALSE -		
					OR			
					Limp air position is not plausible	= TRUE -		
					OR			
					External trigger to start offset learning	= TRUE -		
					)			
					(	= TRUE -		
					ECU is in drive state			
					OR			
					ECU is in post drive state for time	> 5 sec		
					)			
					)			
					OR			
					ECU is in post drive state for time	> 5 sec		
					)			
					Offset learning will be enabled when below conditions are satisfied	= TRUE -		
					(			
					(			
					(			
					Offset learning active	= TRUE -		
					OR			
					(			
					Offset learning active	= FALSE -		
					(			
					The powerstage of the throttle actuator for bank 2 is commanded on	= TRUE -		
					Battery voltage	> 7.5 V		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					)			
					)			
					)			
					OR			
					Power save is active for bank 2	= TRUE -		
					)			
					Limp home driving mode requested for bank 2	= FALSE -		
					Safety fuel cut off requested for bank 2	= FALSE -		
					Torque limitation requested for bank 2	= FALSE -		
					)			
					Vehicle speed	<= 0.62150404 mph		
					Engine speed	<= 300 rpm		
					Battery voltage	<= 655.34 V		
					Battery voltage	>= 10 V		
					Intake air temperature before throttle valve	<= 143.26 deg C		
					Intake air temperature before throttle valve	>= 5.26 deg C		
					Engine coolant temperature	<= 100.46 deg C		
					Engine coolant temperature	>= 5.26 deg C		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
		Path 4: Throttle valve return spring failure while spreading the return spring for Bank 2	Position of the throttle valve	<= (D1 + D2) - D3 %	(	= FALSE -	0.2 sec once per driving cycle	1 Trip
					Offset learning aborted			
			Where:		OR			
			(D1) Limp home position of the throttle valve	= Calculated parameter %	Offset learning successful	= FALSE -		
					)			
			(D2) Value by which return spring is spread starting from power off position	= 15 %	Offset check at cold temperature conditions active	= FALSE -		
			(D3) Range for actual position (offset to desired value) to check whether return spring spread position is reached	= 2 %	(			
					(			
					(	= TRUE -		
					Return spring check aborted			
					OR			
					Return spring check successful	= TRUE -		
					)			
					Return spring check fault for bank 2 is set	= FALSE -		
					)			
					OR			
					Device type	> 0 -		
					)			
					(			
					Offset learning will be enabled during ECU is in drive state when below conditions are satisfied for time	> 29 sec		
					(			
					(			
					(			
					Offset learning active	= TRUE -		
					OR			
					(			
					Offset learning active	= FALSE -		
					(			
					The powerstage of the throttle actuator for bank 2 is commanded on	= TRUE -		
					Battery voltage	> 7.5 V		
					)			
					)			
					)			
					OR			
					Power save is active for bank 2	= TRUE -		
					)			
					Limp home driving mode requested for bank 2	= FALSE -		
					Safety fuel cut off requested for bank 2	= FALSE -		
					Torque limitation requested for bank 2	= FALSE -		
					)			
					(	= FALSE -		
					Long term and short term adaptation chosen			
					OR			
					(	= TRUE -		
					Long term and short term adaptation chosen			
					Long term and short term is released	= TRUE -		
					)			
					)			
					OR			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 TEST GROUP: KGMXV04.2088 EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					(			
					(			
					First learning performed	= FALSE -		
					OR			
					Limp air position is not plausible	= TRUE -		
					OR			
					External trigger to start offset learning	= TRUE -		
					)			
					(	= TRUE -		
					ECU is in drive state			
					OR			
					ECU is in post drive state for time	> 5 sec		
					)			
					)			
					OR			
					ECU is in post drive state for time	> 5 sec		
					)			
					Offset learning will be enabled when below conditions are satisfied	= TRUE -		
					(			
					(			
					(			
					Offset learning active	= TRUE -		
					OR			
					(			
					Offset learning active	= FALSE -		
					(			
					The powerstage of the throttle actuator for bank 2 is commanded on	= TRUE -		
					Battery voltage	> 7.5 V		
					)			
					)			
					)			
					OR			
					Power save is active for bank 2	= TRUE -		
					)			
					Limp home driving mode requested for bank 2	= FALSE -		
					Safety fuel cut off requested for bank 2	= FALSE -		
					Torque limitation requested for bank 2	= FALSE -		
					)			
					Vehicle speed	<= 0.62150404 mph		
					Engine speed	<= 300 rpm		
					Battery voltage	<= 655.34 V		
					Battery voltage	>= 10 V		
					Intake air temperature before throttle valve	<= 143.26 deg C		
					Intake air temperature before throttle valve	>= 5.26 deg C		
					Engine coolant temperature	<= 100.46 deg C		
					Engine coolant temperature	>= 5.26 deg C		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
	P210A	**Path 1 :** Diagnosis of the Throttle Actuator Control Bank 2 H bridge circuit for open circuit fault	Voltage low during driver OFF state (indicates open circuit)	= Open Circuit: ≥ 200 K Ω impedance between ECU pin and load -	(		0.799805 sec continuous	1 Trip
					ECU is in DRIVE state	= TRUE -		
					OR			
					ECU is in POSTDRIVE state	= TRUE -		
					)			
					The powerstage of the actuator is switched on, following conditions:	= TRUE -		
					(			
					State of the thottle valve powerstage bank 2	> 0 -		
					)			
					Release of adaptation	= FALSE -		
					Actual position is valid	= TRUE -		
					Request safety fuel cut off SKA bank 2, following condition:	= FALSE -		
					(			
					Request reversible safety fuel cut off SKA bank 2, which has following condition:	= FALSE -		
					(			
					Battery voltage for throttle valve operation sufficient bank 2	> 7.5 V		
					OR			
					Engine speed	> 1000 rpm		
					)			
					Limp home position not reached bank 2	= FALSE -		
					)			

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
		Path 2: Check throttle valve power stage IC for over temperature	Over temperature error from the power stage is detected	= TRUE -	(ECU is in DRIVE state	= TRUE -	continuous	1 Trip
					OR ECU is in POSTDRIVE state	= TRUE -		
					) The powerstage of the actuator is switched on, following conditions:	= TRUE -		
					(State of the thottle valve powerstage bank 2	> 0 -		
					) Release of adaptation	= FALSE -		
					Actual position is valid	= TRUE -		
					Request safety fuel cut off SKA bank 2, following condition:	= FALSE -		
					(Request reversible safety fuel cut off SKA bank 2, which has following condition:	= FALSE -		
					(Battery voltage for throttle valve operation sufficient bank 2	> 7.5 V		
					OR Engine speed	> 1000 rpm		
					) Limp home position not reached bank 2	= FALSE -		
					) No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
		Path 3 : Diagnoses the Turbine bypass valve H bridge high side driver circuit at out 1 for circuit low fault	Voltage low during driver ON state (indicates short circuit to ground)	= Short to ground: ≤ 0.5 Ω impedance between signal and controller ground -	(ECU is in DRIVE state	= TRUE -	continuous	1 Trip
		Diagnoses the Turbine bypass valve H bridge low side driver circuit at out 2 for circuit high fault	OR Voltage high during driver ON state (indicates short circuit to battery)	= Short to power: ≤ 0.5 Ω impedance between signal and controller power -	OR ECU is in POSTDRIVE state)	= TRUE -		
					The powerstage of the actuator is switched on, following conditions:	= TRUE -		
					(State of the thottle valve powerstage bank 2	> 0 -		
					) Release of adaptation	= FALSE -		
					Actual position is valid	= TRUE -		
					Request safety fuel cut off SKA bank 2, following condition:	= FALSE -		
					(Request reversible safety fuel cut off SKA bank 2, which has following condition:	= FALSE -		
					(Battery voltage for throttle valve operation sufficient bank 2	> 7.5 V		
					OR Engine speed	> 1000 rpm		
					) Limp home position not reached bank 2	= FALSE -		
					) No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enable conditions met	= see sheet enable tables -		
Turbocharge Wastegate Actuator - H-Bridge Leg 1 - B1	P2B93	Path 1: Monitoring of valve drift at closed position	(		Actuator is completely closed	= TRUE -	continuous	2 Trips
			(Slope of the sensor	>= 0	(Actuator position is set at 0% which means that actuator is closed	= TRUE -		
			Actuator position is set at 0% which means that actuator is closed	= TRUE -	(			
			(		(Current actuator torque (See Look-up table #P2B93-1)	<= -134 Ncm		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
			Average sensor voltage from turbine bypass valve 1 position sensor	>	2.0026	V	Suspect for reaching mechanical minimum bound of valve	=	TRUE	-		
			OR				(					
			(				Internal desired value for governor	<	0	%		
			Average sensor voltage from turbine bypass valve 1 position sensor	<	0.424	V	Actuator position is unchanged	=	TRUE	-		
			Average sensor voltage from turbine bypass valve 1 position sensor	>=	0.244	V	(					
			)				Absolute value of the gradient of the actuator speed	<	350	mV/s		
			)				for events	=	2	-		
			)				)					
			OR				)					
			(				)					
			Slope of the sensor curve	<	0		for time		0.01	sec		
			Actuator position is set at 0% which means that actuator is closed	=	FALSE	-	OR					
			(				Actuator position is set at 0% which means that actuator is closed	=	FALSE	-		
			Average sensor voltage from turbine bypass valve 1 position sensor	>	2.0026	V	(					
			OR				Current actuator torque (See Look-up table #P2B93-2)	>=	134	Ncm		
			(				Suspect for reaching mechanical maximum bound of valve	=	TRUE	-		
			Average sensor voltage from turbine bypass valve 1 position sensor	<	0.424	V	(					
			Average sensor voltage from turbine bypass valve 1 position sensor	>=	0.244	V	Internal desired value for governor	>	100	%		
			)				Actuator position is unchanged	=	TRUE	-		
			)				(					
			)				Absolute value of the gradient of the actuator speed	<	350	mV/s		
			OR				for events	=	2	-		
			(				)					
			Slope of the sensor	>=	0		)					
			Actuator position is set at 0% which means that actuator is closed	=	FALSE	-	)					
			(				for time		0.01	sec		
			Average sensor voltage from turbine bypass valve 1 position sensor	<	0.424	V	)					
			OR				Offset learning is active	=	TRUE	-		
			(				(					
			Average sensor voltage from turbine bypass valve 1 position sensor	>	2.0026	V	Battery voltage	>=	9	V		
			Average sensor voltage from turbine bypass valve 1 position sensor	<=	4.0726	V	Battery voltage	<=	655.34	V		
			)				Environmental pressure[See Look Up Table #P2B93-3]	>	0	kPa		
			)				Engine is in running state	=	TRUE	-		
			)				for time		0	sec		
			OR				Air temperature	>=	-3549.94	deg C		
			(				Air temperature	<=	143.96	deg C		
			Slope of the sensor	<	0		Exhaust temperature	>=	-40.04	deg C		
			Actuator position is set at 0% which means that actuator is closed	=	TRUE	-	Exhaust temperature	<=	149.96	deg C		
			(				Engine temperature	<=	129.96	deg C		
			Average sensor voltage from turbine bypass valve 1 position sensor	<	0.424	V	Engine temperature	>=	-40.04	deg C		
			OR				Brake is not pressed	=	TRUE	-		
			(				Number of cycles since brake active	<=	0	-		
			Average sensor voltage from turbine bypass valve 1 position sensor	>	2.0026	V	Pressure disturbance	<	3276.7	kPa		
			Average sensor voltage from turbine bypass valve 1 position sensor	<=	4.0726	V	Injection quantity	<	327.67	mg/hub		
			)				Engine speed	<	3000	rpm		
			)				(					
			)				(					
			)				Torque for offset learning based on actuator position	<=	A	%		
			OR				where					
			(				(A) Maximum of minimum torque required to perform offset learning at default position and negation of torque limitation value based on actuator position					
			Raw learned value at the closed mechanical endstop	<=	4.0726	V	)					
			Raw learned value at the closed mechanical endstop	>=	0.244	V	OR					
			(				(					
			Raw learned value at the closed electrical endstop	>	2.0026	V	Torque for offset learning based on actuator position	>=	A	%		
			OR				where					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
			Raw learned value at the closed electrical endstop	<	0.244	V	(A) Minimum of minimum torque required to perform offset learning not at default position and torque limitation value based on actuator position					
			)				)					
			)				)					
							Clean and verify function is active	=	TRUE	-		
							Number of clean and verify function completed	>=	1	-		
							)					
							Timer for starting offset learning	>=	0.01	sec		
							No pending or confirmed DTCs	=	see sheet inhibit tables	-		
							Basic enable conditions met	=	see sheet enable tables	-		
		Path 2: Monitoring of valve drift at open position	(				Actuator is completely open	=	TRUE	-	continuous	2 Trips
			Slope of the sensor	>=	0		(					
			Actuator position is set at 0% which means that actuator is closed	=	TRUE	-	Actuator position is set at 0% which means that actuator is closed	=	TRUE	-		
			(				(					
			Average sensor voltage from turbine bypass valve 1 position sensor	<	2.347	V	Current actuator torque (See Look-up table #P2B93-1)	<=	-134	Ncm		
			OR				Suspect for reaching mechanical minimum bound of valve	=	TRUE	-		
			(				(					
			Average sensor voltage from turbine bypass valve 1 position sensor	>	4.057	V	Internal desired value for governor	>	100	%		
			Average sensor voltage from turbine bypass valve 1 position sensor	<=	4.0726	V	Actuator position is unchanged	=	TRUE	-		
			)				(					
			)				Absolute value of the gradient of the actuator speed	<	350	mV/s		
			)				for events	=	2	-		
			OR				)					
			(				)					
			Slope of the sensor curve	<	0		)					
			Actuator position is set at 0% which means that actuator is closed	=	FALSE	-	fortime		0.01	sec		
			(				OR					
			Average sensor voltage from turbine bypass valve 1 position sensor	<	2.347	V	Actuator position is set at 0% which means that actuator is closed	=	FALSE	-		
			OR				(					
			(				Current actuator torque (See Look-up table #P2B93-2)	>=	134	Ncm		
			Average sensor voltage from turbine bypass valve 1 position sensor	>	4.057	V	Suspect for reaching mechanical maximum bound of valve	=	TRUE	-		
			Average sensor voltage from turbine bypass valve 1 position sensor	<=	4.0726	V	(					
			)				Internal desired value for governor	<	0	%		
			)				Actuator position is unchanged	=	TRUE	-		
			)				(					
			OR				Absolute value of the gradient of the actuator speed	<	350	mV/s		
			(				for events	=	2	-		
			Slope of the sensor	>=	0		)					
			Actuator position is set at 0% which means that actuator is closed	=	FALSE	-	)					
			(				)					
			Average sensor voltage from turbine bypass valve 1 position sensor	>	4.057	V	fortime		0.01	sec		
			OR				)					
			(				Offset learning is active	=	TRUE	-		
			Average sensor voltage from turbine bypass valve 1 position sensor	<	2.347	V	(					
			Average sensor voltage from turbine bypass valve 1 position sensor	>=	0.244	V	Battery voltage	>=	9	V		
			)				Battery voltage	<=	655.34	V		
			)				Environmental pressure[See Look Up Table #P2B93-3]	>	0	kPa		
			)				Engine is in running state	=	TRUE	-		
			OR				for time		0	sec		
			(				Air temperature	>=	-3549.94	deg C		
			Slope of the sensor	<	0		Air temperature	<=	143.96	deg C		
			Actuator position is set at 0% which means that actuator is closed	=	TRUE	-	Exhaust temperature	>=	-40.04	deg C		
			(				Exhaust temperature	<=	149.96	deg C		
			Average sensor voltage from turbine bypass valve 1 position sensor	>	4.057	V	Engine temperature	<=	129.96	deg C		
			OR				Engine temperature	>=	-40.04	deg C		
			(				Brake is not pressed	=	TRUE	-		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
			Average sensor voltage from turbine bypass valve 1 position sensor	<	2.347	V	Number of cycles since brake active	<=	0	-		
			Average sensor voltage from turbine bypass valve 1 position sensor	>=	0.244	V	Pressure disturbance	<	3276.7	kPa		
			)				Injection quantity	<	327.67	mg/hub		
			)				Engine speed	<	3000	rpm		
			)				(					
							(					
							Torque for offset learning based on actuator position where (A) Maximum of minimum torque required to perform offset learning at default position and negation of torque limitation value based on actuator position	<=	A	%		
							)					
							OR					
							(					
							Torque for offset learning based on actuator position where (A) Minimum of minimum torque required to perform offset learning not at default position and torque limitation value based on actuator position	>=	A	%		
							)					
							)					
							Clean and verify function is active	=	TRUE	-		
							Number of clean and verify function completed	>=	1	-		
							)					
							Timer for starting offset learning	>=	0.01	sec		
							No pending or confirmed DTCs	=	see sheet inhibit tables	-		
							Basic enable conditions met	=	see sheet enable tables	-		
	P25B4	Monitoring of turbine bypass valve 1 jammed at closed position	Actual position of turbine bypass valve 1	>	50	%	(				continuous	2 Trips
							Control valve was detected as jammed	=	TRUE	-		
							for time	>	1	sec		
							)					
							Rapid heat-up mode	=	FALSE	-		
							No pending or confirmed DTCs	=	see sheet inhibit tables	-		
							Basic enable conditions met	=	see sheet enable tables	-		
	P25B3	Monitoring of turbine bypass valve 1 jammed at open position	Actual position of turbine bypass valve 1	<=	50	%	(				continuous	2 Trips
							Control valve was detected as jammed	=	TRUE	-		
							for time	>	1	sec		
							)					
							Rapid heat-up mode	=	FALSE	-		
							No pending or confirmed DTCs	=	see sheet inhibit tables	-		
							Basic enable conditions met	=	see sheet enable tables	-		
	P25B4	Monitoring of turbine bypass valve 1 jammed at closed position	Actual position of turbine bypass valve 1	>	50	%	(				continuous	2 Trips
							Control valve was detected as jammed	=	TRUE	-		
							for time	>	1	sec		
							)					
							Rapid heat-up mode	=	FALSE	-		
							No pending or confirmed DTCs	=	see sheet inhibit tables	-		
							Basic enable conditions met	=	see sheet enable tables	-		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required			MIL Illum.
	P2ABD	**Path 1:** Diagnoses the Turbine bypass valve H bridge circuit for over current fault	Current flow at any path of the H-bridge	>	5.75	A	Power stage (H-bridge circuit) is switched on	=	TRUE	-	1.5	sec	continuous	2 Trips
							No open load diagnosis active	=	TRUE	-				
							Basic enable conditions met	=	see sheet enable tables	-				
							No Pending or Confirmed DTCs	=	see sheet inhibit tables	-				
	P2ABD	**Path 2:** Diagnoses the Turbine bypass valve H bridge circuit for over temperature fault	Temperature within the H-bridge powerstage circuit	>	175	deg C	Power stage (H-bridge circuit) is switched on	=	TRUE	-	1	sec	continuous	2 Trips
							No open load diagnosis active	=	TRUE	-				
							Basic enable conditions met	=	see sheet enable tables	-				
							No Pending or Confirmed DTCs	=	see sheet inhibit tables	-				
	P103A	Diagnoses the Turbine bypass valve H bridge circuit for short circuit over load fault	Voltage low between signals H-bridge output 1 + 2 (indicates short circuit over load)	=	Short over load: ≤ 0.5 Ω impedance between signal output 1 + 2	-	Power stage (H-bridge circuit) is switched on	=	TRUE	-	1.5	sec	continuous	2 Trips
							No open load diagnosis active	=	TRUE	-				
							Basic enable conditions met	=	see sheet enable tables	-				
							No Pending or Confirmed DTCs	=	see sheet inhibit tables	-				
	P1038	Diagnoses the Turbine bypass valve H bridge circuit for undervoltage fault	ECM internal voltage supply of turbine bypass valve/control circuit	<	3.1	V	Power stage (H-bridge circuit) is switched on	=	TRUE	-	5	sec	continuous	2 Trips
							No open load diagnosis active	=	TRUE	-				
							Basic enable conditions met	=	see sheet enable tables	-				
							No Pending or Confirmed DTCs	=	see sheet inhibit tables	-				
	P0246	Diagnoses the Turbine bypass valve H bridge low side driver circuit at out 1 for circuit high fault	Voltage high (indicates short circuit to battery)	=	Short to power ≤ 0.5 Ω impedance between signal and controller power	-	Power stage (H-bridge circuit) is switched on	=	TRUE	-	1.5	sec	continuous	1 Trip
							No open load diagnosis active	=	TRUE	-				
							Basic enable conditions met	=	see sheet enable tables	-				
							No Pending or Confirmed DTCs	=	see sheet inhibit tables	-				
	P0245	Diagnoses the Turbine bypass valve H bridge high side driver circuit at out 1 for circuit low fault	Voltage low (indicates short circuit to ground)	=	Short to ground: ≤ 0.5 Ω impedance between signal and controller ground	-	Power stage (H-bridge circuit) is switched on	=	TRUE	-	1.5	sec	continuous	1 Trip
							No open load diagnosis active	=	TRUE	-				
							Basic enable conditions met	=	see sheet enable tables	-				
							No Pending or Confirmed DTCs	=	see sheet inhibit tables	-				
	P0243	Diagnoses the Turbine bypass valve H bridge circuit for open circuit fault	Voltage low during driver OFF state (indicates open circuit)	=	Open Circuit: ≥ 200 K Ω impedance between ECU pin and load	-	Power stage (H-bridge circuit) is switched off	=	TRUE	-	1.5	sec	continuous	1 Trip
							Engine speed	<=	350	rpm				
							(							
							(							
							Open Load Diagnosis during temporary Governor OFF:							
							Absolute value of governor deviation	<	0.0122	%				
							Absolute value of desired valve position gradient	<=	0	%/s				
							Spring break detection	=	FALSE	-				
							)							
							OR							
							(							
							Enable Open Load Diagnosis when actuator is deactivated:							
							Soft shut active	=	FALSE	-				
							Actuator temporary active	=	FALSE	-				
							(							
							Engine in Standby mode	=	TRUE	-				
							Engine state before current state afterrun	=	TRUE	-				
							OR							

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
							Engine state afterrun	=	TRUE	-		
							for time	>=	0.01	sec		
							)					
							)					
							)					
							Basic enable conditions met	=	see sheet enable tables	-		
							No Pending or Confirmed DTCs	=	see sheet inhibit tables	-		
Turbocharge Wastegate Actuator - H-Bridge Leg 2 - B1	P30E9	Diagnoses the Turbine bypass valve H bridge high side driver circuit at out 2 for circuit high fault	Voltage high (indicates short circuit to battery)	=	Short to power: ≤ 0.5 Ω impedance between signal and controller power	-	Power stage (H-bridge circuit) is switched on	=	TRUE	-	1.5 sec continuous	1 Trip
							No open load diagnosis active	=	TRUE	-		
							Basic enable conditions met	=	see sheet enable tables	-		
							No Pending or Confirmed DTCs	=	see sheet inhibit tables	-		
	P30E8	Diagnoses the Turbine bypass valve H bridge high side driver circuit at out 2 for circuit low fault	Voltage low (indicates short circuit to ground)	=	Short to ground: ≤ 0.5 Ω impedance between signal and controller ground	-	Power stage (H-bridge circuit) is switched on	=	TRUE	-	1.5 sec continuous	1 Trip
							No open load diagnosis active	=	TRUE	-		
							Basic enable conditions met	=	see sheet enable tables	-		
							No Pending or Confirmed DTCs	=	see sheet inhibit tables	-		
Turbocharge Wastegate Actuator - H-Bridge Leg 1 - B2	P2B94	Path 1: Monitoring of valve drift at closed position	(				Actuator is completely closed	=	TRUE	-	continuous	2 Trips
			(				(					
			Slope of the sensor	>=	0		Actuator position is set at 0% which means that actuator is closed	=	TRUE	-		
			Actuator position is set at 0% which means that actuator is closed	=	TRUE	-	(					
			(				Current actuator torque (See Look-up table #1)	<=	-134	Ncm		
			Average sensor voltage from turbine bypass valve 1 position sensor	>	2.0026	V	Suspect for reaching mechanical minimum bound of valve	=	TRUE	-		
			OR				(					
			(				Internal desired value for governor	<	0	%		
			Average sensor voltage from turbine bypass valve 1 position sensor	<	0.424	V	Actuator position is unchanged	=	TRUE	-		
			Average sensor voltage from turbine bypass valve 1 position sensor	>=	0.244	V	(					
			)				Absolute value of the gradient of the actuator speed	<	350	mV/s		
			)				for events	=	2	-		
			)				)					
			OR				)					
			(				)					
			Slope of the sensor curve	<	0		for time		0.01	sec		
			Actuator position is set at 0% which means that actuator is closed	=	FALSE	-	OR					
			(				Actuator position is set at 0% which means that actuator is closed	=	FALSE	-		
			Average sensor voltage from turbine bypass valve 1 position sensor	>	2.0026	V	(					
			OR				Current actuator torque (See Look-up table #2)	>=	134	Ncm		
			(				Suspect for reaching mechanical maximum bound of valve	=	TRUE	-		
			Average sensor voltage from turbine bypass valve 1 position sensor	<	0.424	V	(					
			Average sensor voltage from turbine bypass valve 1 position sensor	>=	0.244	V	Internal desired value for governor	>	100	%		
			)				Actuator position is unchanged	=	TRUE	-		
			)				(					
			)				Absolute value of the gradient of the actuator speed	<	350	mV/s		
			OR				for events	=	2	-		
			(				)					
			Slope of the sensor	>=	0		)					
			Actuator position is set at 0% which means that actuator is closed	=	FALSE	-	)					
			(				for time		0.01	sec		
			Average sensor voltage from turbine bypass valve 1 position sensor	<	0.424	V	)					
			OR				Offset learning is active	=	TRUE	-		

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
			(				(					
			Average sensor voltage from turbine bypass valve 1 position sensor	>	2.0026	V	Battery voltage	>=	9	V		
			Average sensor voltage from turbine bypass valve 1 position sensor	<=	4.0726	V	Battery voltage	<=	655.34	V		
			)				Environmental pressure[See Look Up Table #3]	>	0	kPa		
			)				Engine is in running state	=	TRUE	-		
			)				for time		0	sec		
			OR				Air temperature	>=	-3549.94	deg C		
			(				Air temperature	<=	143.96	deg C		
			Slope of the sensor	<	0		Exhaust temperature	>=	-40.04	deg C		
			Actuator position is set at 0% which means that actuator is closed	=	TRUE	-	Exhaust temperature	<=	149.96	deg C		
			(				Engine temperature	<=	129.96	deg C		
			Average sensor voltage from turbine bypass valve 1 position sensor	<	0.424	V	Engine temperature	>=	-40.04	deg C		
			OR				Brake is not pressed	=	TRUE	-		
			(				Number of cycles since brake active	<=	0	-		
			Average sensor voltage from turbine bypass valve 1 position sensor	>	2.0026	V	Pressure disturbance	<	3276.7	kPa		
			Average sensor voltage from turbine bypass valve 1 position sensor	<=	4.0726	V	Injection quantity	<	327.67	mg/hub		
			)				Engine speed	<	3000	rpm		
			)				(					
			)				(					
			)				Torque for offset learning based on actuator position	<=	A	%		
			OR				where					
			(				(A) Maximum of minimum torque required to perform offset learning at default position and negation of torque limitation value based on actuator position					
			Raw learned value at the closed mechanical endstop	<=	4.0726	V	)					
			Raw learned value at the closed mechanical endstop	>=	0.244	V	OR					
			(				(					
			Raw learned value at the closed electrical endstop	>	2.0026	V	Torque for offset learning based on actuator position	>=	A	%		
			OR				where					
			Raw learned value at the closed electrical endstop	<	0.244	V	(A) Minimum of minimum torque required to perform offset learning not at default position and torque limitation value based on actuator position					
			)				)					
			)				)					
							Clean and verify function is active	=	TRUE	-		
							Number of clean and verify function completed	>=	1	-		
							)					
							Timer for starting offset learning	>=	0.01	sec		
							No pending or confirmed DTCs	=	see sheet inhibit tables	-		
							Basic enable conditions met	=	see sheet enable tables	-		
		Path 2: Monitoring of valve drift at open position	(				Actuator is completely open	=	TRUE	-	continuous	2 Trips
			Slope of the sensor	>=	0		(					
			Actuator position is set at 0% which means that actuator is closed	=	TRUE	-	Actuator position is set at 0% which means that actuator is closed	=	TRUE	-		
			(				(					
			Average sensor voltage from turbine bypass valve 1 position sensor	<	2.347	V	Current actuator torque (See Look-up table #1)	<=	-134	Ncm		
			OR				Suspect for reaching mechanical minimum bound of valve	=	TRUE	-		
			(				(					
			Average sensor voltage from turbine bypass valve 1 position sensor	>	4.057	V	Internal desired value for governor	>	100	%		
			Average sensor voltage from turbine bypass valve 1 position sensor	<=	4.0726	V	Actuator position is unchanged	=	TRUE	-		
			)				(					
			)				Absolute value of the gradient of the actuator speed	<	350	mV/s		
			)				for events	=	2	-		
			OR				)					
			(				)					
			Slope of the sensor curve	<	0		)					
			Actuator position is set at 0% which means that actuator is closed	=	FALSE	-	for time		0.01	sec		
			(				OR					

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required			MIL Illum.
			Average sensor voltage from turbine bypass valve 1 position sensor	<	2.347	V	Actuator position is set at 0% which means that actuator is closed	=	FALSE	-				
			OR				(							
			(				Current actuator torque (See Look-up table #2)	>=	134	Ncm				
			Average sensor voltage from turbine bypass valve 1 position sensor	>	4.057	V	Suspect for reaching mechanical maximum bound of valve	=	TRUE	-				
			Average sensor voltage from turbine bypass valve 1 position sensor	<=	4.0726	V	(							
			)				Internal desired value for governor	<	0	%				
			)				Actuator position is unchanged	=	TRUE	-				
			)				(							
			OR				Absolute value of the gradient of the actuator speed	<	350	mV/s				
			(				for events	=	2	-				
			Slope of the sensor	>=	0		)							
			Actuator position is set at 0% which means that actuator is closed	=	FALSE	-	)							
			(				)							
			Average sensor voltage from turbine bypass valve 1 position sensor	>	4.057	V	fortime		0.01	sec				
			OR				)							
			(				Offset learning is active	=	TRUE	-				
			Average sensor voltage from turbine bypass valve 1 position sensor	<	2.347	V	(							
			Average sensor voltage from turbine bypass valve 1 position sensor	>=	0.244	V	Battery voltage	>=	9	V				
			)				Battery voltage	<=	655.34	V				
			)				Environmental pressure[See Look Up Table #3]	>	0	kPa				
			)				Engine is in running state	=	TRUE	-				
			OR				for time		0	sec				
			(				Air temperature	>=	-3549.94	deg C				
			Slope of the sensor	<	0		Air temperature	<=	143.96	deg C				
			Actuator position is set at 0% which means that actuator is closed	=	TRUE	-	Exhaust temperature	>=	-40.04	deg C				
			(				Exhaust temperature	<=	149.96	deg C				
			Average sensor voltage from turbine bypass valve 1 position sensor	>	4.057	V	Engine temperature	<=	129.96	deg C				
			OR				Engine temperature	>=	-40.04	deg C				
			(				Brake is not pressed	=	TRUE	-				
			Average sensor voltage from turbine bypass valve 1 position sensor	<	2.347	V	Number of cycles since brake active	<=	0	-				
			Average sensor voltage from turbine bypass valve 1 position sensor	>=	0.244	V	Pressure disturbance	<	3276.7	kPa				
			)				Injection quantity	<	327.67	mg/hub				
			)				Engine speed	<	3000	rpm				
			)				(							
							(							
							Torque for offset learning based on actuator position where (A) Maximum of minimum torque required to perform offset learning at default position and negation of torque limitation value based on actuator position	<=	A	%				
							)							
							OR							
							(							
							Torque for offset learning based on actuator position where (A) Minimum of minimum torque required to perform offset learning not at default position and torque limitation value based on actuator position	>=	A	%				
							)							
							)							
							Clean and verify function is active	=	TRUE	-				
							Number of clean and verify function completed	>=	1	-				
							)							
							Timer for starting offset learning	>=	0.01	sec				
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enable conditions met	=	see sheet enable tables	-				
	P25B6	Monitoring of turbine bypass valve 2 jammed at closed position	Actual position of turbine bypass valve 2	>	50	%	(				1	sec	continuous	2 Trips
							Control valve was detected as jammed	=	TRUE	-				
							for time	>	1	sec				

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 TEST GROUP: KGMXV04.2088 EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					) Rapid heat-up mode No pending or confirmed DTCs Basic enable conditions met	 = FALSE - = see sheet inhibit tables - = see sheet enable tables -		
	P25B5	Monitoring of turbine bypass valve 2 jammed at open position	Actual position of turbine bypass valve 2	<= 50 %	(Control valve was detected as jammed for time) Rapid heat-up mode No pending or confirmed DTCs Basic enable conditions met	 = TRUE - > 1 sec = FALSE - = see sheet inhibit tables - = see sheet enable tables -	1 sec continuous	2 Trips
	P2ABE	Diagnoses the Turbine bypass valve H bridge circuit for over current fault	Current flow at any path of the H-bridge	> 5.75 A	Power stage (H-bridge circuit) is switched on No open load diagnosis active Basic enable conditions met No Pending or Confirmed DTCs	= TRUE - = TRUE - = see sheet enable tables - = see sheet inhibit tables -	1.5 sec continuous	2 Trips
	P2ABE	Diagnoses the Turbine bypass valve H bridge circuit for over temperature fault	Temperature within the H-bridge powerstage circuit	> 175 deg C	Power stage (H-bridge circuit) is switched on No open load diagnosis active Basic enable conditions met No Pending or Confirmed DTCs	= TRUE - = TRUE - = see sheet enable tables - = see sheet inhibit tables -	1 sec continuous	2 Trips
	P10BE	Diagnoses the Turbine bypass valve H bridge circuit for short circuit over load fault	Voltage low between signals H-bridge output 1 + 2 (indicates short circuit over load)	= Short over load: ≤ 0.5 Ω impedance between signal output 1 + 2 -	Power stage (H-bridge circuit) is switched on No open load diagnosis active Basic enable conditions met No Pending or Confirmed DTCs	= TRUE - = TRUE - = see sheet enable tables - = see sheet inhibit tables -	1.5 sec continuous	2 Trips
	P10BD	Diagnoses the Turbine bypass valve H bridge circuit for undervoltage fault	ECM internal voltage supply of turbine bypass valve/control circuit	< 3.1 V	Power stage (H-bridge circuit) is switched on No open load diagnosis active Basic enable conditions met No Pending or Confirmed DTCs	= TRUE - = TRUE - = see sheet enable tables - = see sheet inhibit tables -	5 sec continuous	2 Trips
	P0250	Diagnoses the Turbine bypass valve H bridge low side driver circuit at out 2 for circuit high fault	Voltage high (indicates short circuit to battery)	= Short to power ≤ 0.5 Ω impedance between signal and controller power -	Power stage (H-bridge circuit) is switched on No open load diagnosis active Basic enable conditions met No Pending or Confirmed DTCs	= TRUE - = TRUE - = see sheet enable tables - = see sheet inhibit tables -	1.5 sec continuous	1 Trip
	P0249	Diagnoses the Turbine bypass valve H bridge high side driver circuit at out 1 for circuit low fault	Voltage low (indicates short circuit to ground)	= Short to ground: ≤ 0.5 Ω impedance between signal and controller ground -	Power stage (H-bridge circuit) is switched on No open load diagnosis active Basic enable conditions met No Pending or Confirmed DTCs	= TRUE - = TRUE - = see sheet enable tables - = see sheet inhibit tables -	1.5 sec continuous	1 Trip

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required			MIL Illum.
	P0247	Diagnoses the Turbine bypass valve H bridge circuit for open circuit fault	Voltage low during driver OFF state (indicates open circuit)	=	Open Circuit: ≥ 200 K Ω impedance between ECU pin and load	-	Power stage (H-bridge circuit) is switched off	=	TRUE	-	1.5	sec	continuous	1 Trip
							Engine speed	<=	350	rpm				
							(							
							(							
							Open Load Diagnosis during temporary Governor OFF:							
							Absolute value of governor deviation	<	0,0122	%				
							Absolute value of desired valve position gradient	<=	0	%/s				
							Spring break detection	=	FALSE	-				
							)							
							OR							
							(							
							Enable Open Load Diagnosis when actuator is deactivated:							
							Soft shut active	=	FALSE	-				
							Actuator temporary active	=	FALSE	-				
							(							
							Engine in Standby mode	=	TRUE	-				
							Engine state before current state afterrun	=	TRUE	-				
							OR							
							Engine state afterrun	=	TRUE	-				
							for time	>=	0.01	sec				
							)							
							)							
							)							
							Basic enable conditions met	=	see sheet enable tables	-				
							No Pending or Confirmed DTCs	=	see sheet inhibit tables	-				
Turbocharge Wastegate Actuator - H-Bridge Leg 2 - B2	P30EB	Diagnoses the Turbine bypass valve H bridge low side driver circuit at out 2 for circuit high fault	Voltage high (indicates short circuit to battery)	=	Short to power: ≤ 0.5 Ω impedance between signal and controller power	-	Power stage (H-bridge circuit) is switched on	=	TRUE	-	1.5	sec	continuous	1 Trip
							No open load diagnosis active	=	TRUE	-				
							Basic enable conditions met	=	see sheet enable tables	-				
							No Pending or Confirmed DTCs	=	see sheet inhibit tables	-				
	P30EA	Diagnoses the Turbine bypass valve H bridge high side driver circuit at out 2 for circuit low fault	Voltage low (indicates short circuit to ground)	=	Short to ground: ≤ 0.5 Ω impedance between signal and controller ground	-	Power stage (H-bridge circuit) is switched on	=	TRUE	-	1.5	sec	continuous	1 Trip
							No open load diagnosis active	=	TRUE	-				
							Basic enable conditions met	=	see sheet enable tables	-				
							No Pending or Confirmed DTCs	=	see sheet inhibit tables	-				
Engine Cooling Fan	P0692	Diagnoses Fan 1 control circuit low side driver circuit for circuit high fault	Voltage high during driver ON state (indicates short circuit to battery)	=	Short to power: ≤ 0.5 Ω impedance between signal and controller power	-	Battery voltage	>	10.9	V	2	sec		2 Trips
							for time	>=	0	sec				
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enable conditions met	=	see sheet enable tables	-				
	P0691	Diagnoses Fan 1 control circuit low side driver circuit for circuit low fault	Voltage low during driver OFF state (indicates short circuit to ground)	=	Short to ground: ≤ 0.5 Ω impedance between signal and controller ground	-	Battery voltage	>	10.9	V	2	sec		2 Trips
							for time	>=	0	sec				
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enable conditions met	=	see sheet enable tables	-				
	P0480	**Path 1:** Diagnoses Fan 1 control circuit low side driver circuit for open circuit fault	Voltage low during driver OFF state (indicates open circuit)	=	Open Circuit: ≥ 200 K Ω impedance between ECU pin and load	-	Battery voltage	>	10.9	V	2	sec		1 Trip

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					for time No pending or confirmed DTCs Basic enable conditions met	>= 0 sec = see sheet inhibit - = see sheet enable tables -		
	P0480	**Path 2:** Fan 1 control circuit over temperature	Fan 1 control circuit over temperature detected by ECM hardware	= TRUE -	ECM in pre-drive state ECM in post-drive state Battery voltage Battery voltage ECM in Prepare Shutdown state No pending or confirmed DTCs Basic enable conditions met	= FALSE - = FALSE - > 8.9 V < 36 V = FALSE - = see sheet inhibit tables - = see sheet enable tables -	1 sec	
ECM 5 Volt Sensor Reference - 1	P0641	Sensor supply voltage circuit over temperature	Circuit temperature	> 170 deg C	Ignition is ON No pending or confirmed DTCs Basic enable conditions met	= TRUE - = see sheet inhibit tables - = see sheet enable tables -	0.5 sec Continous	1 Trip
		Sensor supply voltage circuit overvoltage	Voltage ratio between supply voltage output and reference voltage (+5V)	> 1.06 -	Ignition is ON No pending or confirmed DTCs Basic enable conditions met	= TRUE - = see sheet inhibit tables - = see sheet enable tables -	0.5 sec	
		Sensor supply voltage short circuit to ground	Supply voltage	< 1 V	Ignition is ON No pending or confirmed DTCs Basic enable conditions met	= TRUE - = see sheet inhibit tables - = see sheet enable tables -	0.5 sec	
		Sensor supply voltage circuit undervoltage	Voltage ratio between supply voltage output and reference voltage (+5V)	< 0.94 -	Ignition is ON No pending or confirmed DTCs Basic enable conditions met	= TRUE - = see sheet inhibit tables - = see sheet enable tables -	0.5 sec	
ECM 5 Volt Sensor Reference - 2	P0651	Sensor supply voltage circuit over temperature	Circuit Temperature	> 170 deg C	Ignition is ON No pending or confirmed DTCs Basic enable conditions met	= TRUE - = see sheet inhibit tables - = see sheet enable tables -	0.5 sec Continous	1 Trip
		Sensor supply voltage circuit overvoltage	Voltage ratio between supply voltage output and reference voltage (+5V)	> 1.06 -	Ignition is ON No pending or confirmed DTCs Basic enable conditions met	= TRUE - = see sheet inhibit tables - = see sheet enable tables -	0.5 sec	
		Sensor supply voltage short circuit to Ground	Supply voltage	< 1 V	Ignition is ON No pending or confirmed DTCs Basic enable conditions met	= TRUE - = see sheet inhibit tables - = see sheet enable tables -	0.5 sec	
		Sensor supply voltage circuit undervoltage	Voltage ratio between supply voltage output and reference voltage (+5V)	< 0.94 -	Ignition is ON No pending or confirmed DTCs Basic enable conditions met	= TRUE - = see sheet inhibit tables - = see sheet enable tables -	0.5 sec	
ECM 5 Volt Sensor Reference - 3	P0697	Sensor supply voltage circuit over temperature	Circuit Temperature	> 170 deg C	Ignition is ON No pending or confirmed DTCs Basic enable conditions met	= TRUE - = see sheet inhibit tables - = see sheet enable tables -	0.5 sec Continous	1 Trip

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required			MIL Illum.
		Sensor supply voltage circuit overvoltage	Voltage ratio between supply voltage output and reference voltage (+5V)	>	1.06	-	Ignition is ON	=	TRUE	-	0.5	sec		
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enable conditions met	=	see sheet enable tables	-				
		Sensor supply voltage short circuit to Ground	Supply voltage	<	1	V	Ignition is ON	=	TRUE	-	0.5	sec		
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enable conditions met	=	see sheet enable tables	-				
		Sensor supply voltage circuit undervoltage	Voltage ratio between supply voltage output and reference voltage (+5V)	<	0.94	-	Ignition is ON	=	TRUE	-	0.5	sec		
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enable conditions met	=	see sheet enable tables	-				
ECM 5 Volt Sensor Reference - 4	P06A3	Sensor supply voltage circuit over temperature	Circuit Temperature	>	170	deg C	Ignition is ON	=	TRUE	-	0.5	sec	Continous	1 Trip
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enable conditions met	=	see sheet enable tables	-				
		Sensor supply voltage circuit overvoltage	Voltage ratio between supply voltage output and reference voltage (+5V)	>	1.06	-	Ignition is ON	=	TRUE	-	0.5	sec		
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enable conditions met	=	see sheet enable tables	-				
		Sensor supply voltage short circuit to Ground	Supply voltage	<	1	V	Ignition is ON	=	TRUE	-	0.5	sec		
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enable conditions met	=	see sheet enable tables	-				
		Sensor supply voltage circuit undervoltage	Voltage ratio between supply voltage output and reference voltage (+5V)	<	0.94	-	Ignition is ON	=	TRUE	-	0.5	sec		
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enable conditions met	=	see sheet enable tables	-				
FTZM 5 Volt Sensor Reference - 1	P1176	The FTZM raw sensor reference voltage is measured and provided via CAN to the ECM. The ECM monitors value provided from the FTZM and is rationalized for Sensor Supply 1.	Following conditions for time	>	2	sec	Ignition ON	=	FALSE	-	40	counts	Continuous	1 Trips
			FTZM reference 1 voltage (converted in ECM to percent of reference to rationalize)	<	92.24854	%	ECM and CAN bus awake for transmission (meaning CAN awaken by BCM or ECM)	=	TRUE	-				
			OR				Battery Voltage	>	0	V				
			FTZM reference 1 voltage (converted in ECM to percent of reference to rationalize)	<	86.00006	%	No pending or confirmed DTCs	=	see sheet inhibit tables	-				
			OR				Basic enabling conditions are met	=	see sheet enable tables	-				
			| (a) - (b) |	>	1.10016	%								
			where:											
			(a) is the filtered FTZM supply voltage 1	=	calculated parameter	-								
			(b) is FTZM raw supply voltage 1	=	measured parameter	-								
FTZM 5 Volt Sensor Reference - 2	P1177	The FTZM raw sensor reference voltage is measured and provided via CAN to the ECM. The ECM monitors value provided from the FTZM and is rationalized for Sensor Supply 2.	Following conditions for time	>	2	sec	Ignition ON	=	FALSE	-	40	counts	Continuous	1 Trips
			FTZM reference 2 voltage (converted in ECM to percent of reference to rationalize)	<	92.24854	%	ECM and CAN bus awake for transmission (meaning CAN awaken by BCM or ECM)	=	TRUE	-				
			OR				Battery Voltage	>	0	V				
			FTZM reference 2 voltage (converted in ECM to percent of reference to rationalize)	<	86.00006	%	No pending or confirmed DTCs	=	see sheet inhibit tables	-				

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

<table>
<tr><th>Component / System</th><th>Fault Code</th><th>Monitor Strategy Description</th><th>Malfunction Criteria</th><th>Threshold Value</th><th>Secondary Parameters</th><th>Enable Conditions</th><th>Time Required</th><th>MIL Illum.</th></tr>
<tr><td></td><td></td><td></td><td>OR
| (a) - (b) |
where:
(a) is the filtered FTZM supply voltage 2
(b) is FTZM raw supply voltage 2</td><td>
> 1.10016 %

= calculated parameter -
= measured parameter -</td><td>Basic enabling conditions are met</td><td>= see sheet enable tables -</td><td></td><td></td></tr>
<tr><td>FTZM Fuel Level Sensor Reference - 1</td><td>P1178</td><td>The FTZM raw fuel level sensor 1 voltage is rationalized within the ECM by comparing the raw signal to an upper limit, lower limit, and the difference between the filtered and raw fuel level 1 voltage</td><td>Following conditions for time
FTZM fuel level sensor 1 reference voltage (converted in ECM to percent of reference to rationalize)
OR
FTZM fuel level sensor 1 reference voltage (converted in ECM to percent of reference to rationalize)
OR
| (a) - (b) |
where:
(a) is the filtered FTZM fuel level sensor 1 supply voltage
(b) is the raw FTZM fuel level sensor 1 supply voltage</td><td>> 2 sec
< 92.24854 %

< 86.00006 %

> 1.10016 %

= calculated parameter -
= measured parameter -</td><td>Ignition ON
ECM and CAN bus awake for transmission (meaning CAN awaken by BCM or ECM)
Battery Voltage
No pending or confirmed DTCs
Basic enabling conditions are met</td><td>= FALSE -
= TRUE -
> 0 V
= see sheet inhibit tables -
= see sheet enable tables -</td><td>40 counts Continuous</td><td>1 Trips</td></tr>
<tr><td>FTZM Fuel Level Sensor Reference - 1</td><td>P1179</td><td>The FTZM raw sensor reference voltage is measured and provided via CAN to the ECM. The ECM monitors value provided from the FTZM and is rationalized for Sensor Supply 2.</td><td>Following conditions for time
FTZM fuel level sensor 2 reference voltage (converted in ECM to percent of reference to rationalize)
OR
FTZM fuel level sensor 2 reference voltage (converted in ECM to percent of reference to rationalize)
OR
| (a) - (b) |
where:
(a) is the filtered FTZM fuel level sensor 2 supply voltage
(b) is the raw FTZM fuel level sensor 2 supply voltage</td><td>> 2 sec
< 92.24854 %

< 86.00006 %

> 1.10016 %

= calculated parameter -
= measured parameter -</td><td>Ignition ON
ECM and CAN bus awake for transmission (meaning CAN awaken by BCM or ECM)
Battery Voltage
No pending or confirmed DTCs
Basic enabling conditions are met</td><td>= FALSE -
= TRUE -
> 0 V
= see sheet inhibit tables -
= see sheet enable tables -</td><td>40 counts Continuous</td><td>1 Trips</td></tr>
<tr><td>ECM Main Relay</td><td>P0690</td><td>Detection of sticky main realy for non permanently supplied system</td><td>ECU is switched on after the Main Relay was not opened
ECU was still powered during shutdown for time</td><td>= TRUE -
> 0.5 sec</td><td>Current control state of the Main Relay is set to open
Basic enable conditions met
No pending or confirmed DTC's</td><td>= TRUE -
= see sheet enable tables -
= see sheet inhibit tables -</td><td>Execution Rate Once per driving cycle</td><td>1 Trip</td></tr>
<tr><td></td><td>P0689</td><td>Monitoring of ECM/PCM Power Relay Circuit Low fault</td><td>ECU is switched off before "End of Shutdown" was reached
for number of counts</td><td>= TRUE -
> 3 counts</td><td>Engine is in running state
End of shutdown was not reached
Basic enable conditions met</td><td>= TRUE -
= TRUE -
= see sheet enable tables -</td><td>Execution Rate continuous</td><td>1 Trip</td></tr>
<tr><td>Auxiliary Coolant Pump Relay</td><td>P2603</td><td>Diagnoses supplementary coolant pump 1 low side driver circuit for circuit high fault</td><td>Output (driver) current</td><td>>= 1.2 A</td><td>Battery voltage
for time
Power stage (driver) is switched on
No pending or confirmed DTCs
Basic enable conditions met</td><td>> 10.9 V
>= 0 sec
= TRUE -
= see sheet inhibit tables -
= see sheet enable tables -</td><td>2 sec</td><td>2 Trips</td></tr>
<tr><td></td><td>P2602</td><td>Diagnoses supplementary coolant pump 1 low side driver circuit for circuit low fault</td><td>Output (driver) voltage</td><td><= 2.74 V</td><td>Battery voltage
for time
Power stage (driver) is switched off
No pending or confirmed DTCs</td><td>> 10.9 V
>= 0 sec
= TRUE -
= see sheet inhibit tables -</td><td>2 sec</td><td>2 Trips</td></tr>
</table>

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Basic enable conditions met	= see sheet enable tables -		
	P2600	Diagnoses supplementary coolant pump 1 low side driver circuit for open circuit fault	Output (driver) voltage Output (driver) voltage	> 3.26 V <= 4.7 V	Battery voltage for time Power stage (driver) is switched off No pending or confirmed DTCs Basic enable conditions met	> 10.9 V >= 0 sec = TRUE - = see sheet inhibit tables - = see sheet enable tables -	2 sec	2 Trips
	P2600	Diagnoses supplementary coolant pump 1 low side driver circuit for overtemperature fault	Low side driver component temperature	>= 165 degC	Battery voltage for time (Power stage (driver) is switched on OR Power stage (driver) is switched off due to overtemperature shutdown) No pending or confirmed DTCs Basic enable conditions met	> 10.9 V >= 0 sec = TRUE - = TRUE - = see sheet inhibit tables - = see sheet enable tables -	2 sec	-
Idle Speed Control	P0507	Detects a negative deviation between commanded and current idle speed - engine operation mode: warm operation	(Deviation of idle speed precontrol (set point - current) and Engine speed Integral part of the idle speed control at its lower limit, which is the following conditions: A - (B+C) Where: A: Maximum torque of idle speed control B: Precontrol of the drag torque C: Current idle speed governor torque) OR Number of fuel cut-out phases	 < -200 rpm <= 3276.7 Nm >= 255 counts	ECU Sub-State in DRIVE Engine start has finished (No external torque demand (engine is running in idle)) for time Catalyst heating is active Limp−home operation is not active Safety fuel cut off is not active Valid crankshaft signal is present Altitude correction factor Vehicle speed Intake air temperature Engine coolant temperature Engine coolant temperature Time after end of start No pending or confirmed DTCs Basic enabling conditions are met	= TRUE - = TRUE - = TRUE - >= 10 sec = FALSE - = TRUE - = TRUE - = TRUE - > 0 - = 0 mph > -39.8 deg C <= 143.3 deg C >= -39.8 deg C >= 0 sec = see sheet inhibit tables - = see sheet enable tables -	5 sec multiple	2 Trips
	P0506	Detects a positive deviation between commanded and current idle speed - engine operation mode: warm operation	Deviation of idle speed precontrol (set point - current) and Engine speed Integral part of the idle speed control at its upper limit, which is the following conditions: (A+B)-C Where: A: Maximum torque of idle speed control B: Precontrol of the drag torque C: Current idle speed governor torque	> 100 rpm <= 3276.7 Nm	ECU Sub-State in DRIVE Engine start has finished (No external torque demand (engine is running in idle)) for time Catalyst heating is active Limp−home operation is not active Safety fuel cut off is not active Valid crankshaft signal is present Altitude correction factor Vehicle speed Intake air temperature Engine coolant temperature Engine coolant temperature Time after end of start No pending or confirmed DTCs Basic enabling conditions are met	= TRUE - = TRUE - = TRUE - >= 10 sec = FALSE - = TRUE - = TRUE - = TRUE - > 0 - = 0 mph > -39.8 deg C <= 143.3 deg C >= -39.8 deg C >= 0 sec = see sheet inhibit tables - = see sheet enable tables -	5 sec multiple	2 Trips

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required			MIL Illum.
Turbocharger Boost System	P0234	Monitoring of the delta-boost pressure control deviation against rationality threshold for overcharge detection	Delta-boost pressure control deviation (see Look-Up-Table #P0234-1)	>	37.5 to 75	kPa	Measured pressure at upstream throttle valve is valid	=	TRUE	-	1.5	sec	Continuous	2 Trips
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enable conditions met	=	see sheet enable tables	-				
	P0299	Monitoring of the delta-boost pressure control deviation against rationality threshold for undercharge detection	Filtered delta−boost pressure control deviation	>=	25	kPa	(						Continuous	2 Trips
							(							
							Boost pressure control is active	=	TRUE	-				
							(							
							(							
							Difference between desired pressure of upstream throttle valve of bank 1 and minimum pressure after air filter	>	2	kPa				
							OR							
							Difference between desired pressure of upstream throttle valve of bank 2 and minimum pressure after air filter	>	2	kPa				
							)							
							Engine end of start reached	=	TRUE	-				
							Enabling condition for lifting boost pressure actuator	=	TRUE	-				
							(							
							Vehicle is in idle condition	=	TRUE	-				
							(							
							(							
							Difference between propulsion torque of cruise control and driver torque propulsion after step limitation	<	0.5	Nm				
							OR							
							Coordinated status of acceleration request	=	FALSE	-				
							)							
							Difference between minimum wheel torque with internal combustion engine firing and driver torque value after limitation	>=	0	Nm				
							)							
							Enabling condition to detect DLDR minimum error due to cross effects	=	TRUE	-				
							(							
							Safety fuel cut−off from throttle valve monitoring for bank 1 is active	=	FALSE	-				
							Limp-home mode request from throttle valve monitoring for bank 1 is active	=	FALSE	-				
							Safety fuel cut−off from throttle valve monitoring for bank 2 is active	=	FALSE	-				
							Limp-home mode request from throttle valve monitoring for bank 2 is active	=	FALSE	-				
							Measured pressure upstream throttle valve is valid	=	TRUE	-				
							Measured pressure of intake manifold is valid	=	TRUE	-				
							)							
							)							
							Engine speed (see Look-Up-Table #P0299-1)	>	2800 to 3200	rpm				
							Difference between desired pressure of upstream throttle valve and base boost pressure	>	10	kPa				
							Ambient Pressure	>	70	kPa				
							Difference between desired throttle position of bank 1 and the actual throttle angle during which 95% is reached, Wide open throttle is active	>	0	-				
							)							
							for time	>=	3	sec				
							)							
							Time counter for delta boost pressure control deviation calculation	>	6	sec				
							)							
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				
							Basic enable conditions met	=	see sheet enable tables	-				
	P02CA	Monitoring of the delta-boost pressure control deviation of bank 2 against rationality threshold for overcharge detection	Delta-boost pressure control deviation of bank 2 (see Look-Up-Table #P02CA-1)	>	37.5 to 75	kPa	Measured pressure at upstream throttle valve is valid	=	TRUE	-	1.5	sec	Continuous	2 Trips
							No pending or confirmed DTCs	=	see sheet inhibit tables	-				

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required	MIL Illum.
							Basic enable conditions met	=	see sheet enable tables	-		
	P02CB	Monitoring of the delta-boost pressure control deviation of bank 2 against rationality threshold for undercharge detection	Filtered delta−boost pressure control deviation of bank 2	>=	25	kPa	(				Continuous	2 Trips
							(					
							Boost pressure control is active	=	TRUE	-		
							(					
							(					
							Difference between desired pressure of upstream throttle valve of bank 1 and minimum pressure after air filter	>	2	kPa		
							OR					
							Difference between desired pressure of upstream throttle valve of bank 2 and minimum pressure after air filter	>	2	kPa		
							)					
							Engine end of start reached	=	TRUE	-		
							Enabling condition for lifting boost pressure actuator	=	TRUE	-		
							(					
							Vehicle is in idle condition	=	TRUE	-		
							(					
							(					
							Difference between propulsion torque of cruise control and driver torque propulsion after step limitation	<	0.5	Nm		
							OR					
							No acceleration request	=	TRUE	-		
							)					
							Difference between minimum wheel torque with internal combustion engine firing and driver torque value after limitation	>=	0	Nm		
							)					
							Enabling condition to detect DLDR minimum error due to cross effects	=	TRUE	-		
							(					
							Safety fuel cut−off from throttle valve monitoring for bank 1 is active	=	FALSE	-		
							Limp-home mode request from throttle valve monitoring for bank 1 is active	=	FALSE	-		
							Safety fuel cut−off from throttle valve monitoring for bank 2 is active	=	FALSE	-		
							Limp-home mode request from throttle valve monitoring for bank 2 is active	=	FALSE	-		
							Measured pressure upstream throttle valve is valid	=	TRUE	-		
							Measured pressure of intake manifold is valid	=	TRUE	-		
							)					
							)					
							Engine speed (see Look-Up-Table #P0299-1)	>	2800 to 3200	rpm		
							Difference between desired pressure of upstream throttle valve and base boost pressure	>	10	kPa		
							Ambient Pressure	>	70	kPa		
							Difference between desired throttle position of bank 1 and the actual throttle angle during which 95% is reached, Wide open throttle is active	>	0	-		
							)					
							for time	>=	3	sec		
							)					
							Time counter for delta boost pressure control deviation calculation	>	6	sec		
							)					
							No pending or confirmed DTCs	=	see sheet inhibit tables	-		
							Basic enable conditions met	=	see sheet enable tables	-		

End of Table

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Table no. | **Label** | **Fault Codes**

P0420-1 High window exhaust gas mass flow bank 1 — P0420, P0430, P013A, P013E, P2270

rpm	1000	1500	2000	2500	3000	3500
kg/h	80	90	100	100	100	100

P0420-2 Low window exhaust gas mass flow bank 1 — P0420, P0430, P013A, P013E, P2270

rpm	1000	1500	2000	2500	3000	3500
kg/h	80	90	100	100	100	100

P0420-3 integrated exhaust gas mass flow bank 2 since engine start — P0420, P0430, P013A, P013E

deg C	-40.04	-20.04	-10.04	19.96	39.96	89.96	119.96
kg	2.85	2.337	2.163	1.919	1.8	1.6	1.6

P0420-4 engine load @ full engine mode — P0420, P0430, P013A, P013E, P2270

rpm	920	1000	1240	1520	1800	2000
%	19.992	15	12	12.492	12.492	12.492

P0420-5 Threshold OSC normalization map bank 1 — P0420

kg/h / deg C	450.06	500.06	550.06	600.06	650.06	700.06	750.06	800.06
10	100	100	100	122	146	152	165	165
20	102	102	102	125	146	152	172	172
30	110	110	110	137	160	162	175	175
40	118	118	118	142	168	170	182	182
50	128	128	128	152	175	180	190	190
60	132	132	132	158	180	190	200	200
70	136	136	136	160	185	195	205	205
90	136	136	136	160	190	195	205	205

P0430-1 Threshold OSC normalization map bank 2 — P0430

kg/h / deg C	450.06	500.06	550.06	600.06	650.06	700.06	750.06	800.06
10	100	100	100	122	146	152	165	165
20	102	102	102	125	146	152	172	172
30	110	110	110	137	160	162	175	175
40	118	118	118	142	168	170	182	182
50	128	128	128	152	175	180	190	190
60	132	132	132	158	180	190	200	200
70	136	136	136	160	185	195	205	205
90	136	136	136	160	190	195	205	205

P0300-1 Method 1: Angular acceleration of crankshaft in idle state, compared to threshold primarily used to detect single random misfire as well as single cylinder continuous misfire — P0300,P0301,P0302,P0303,P0304,P0305,P0306,P0307,P0308

%	5.00031	6.50024	8.50067	10.00061	13.00049	17.99927
rad/s^2	95	110	140	150	170	180

P0300-2 Method 3: Filtered angular acceleration of — P0300,P0301,P0302,P0303,P030

%	5.00031	6.50024	8.50067	10.00061	13.00049	17.99927
rad/s^2	75	95	135	135	135	135

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Table no.	Label	Fault Codes
P0300-4	Method 1: Angular acceleration of crankshaft in transmission grip state (clutch is engaged), compared to threshold primarily used to detect single random misfire as well as single cylinder continuous misfire	P0300,P0301,P0302,P0303,P0304,P0305,P0306,P0307,P0308

rpm / %	8.00018	14.99939	25.99945	32.00073	39.99939	50	60.00061	69.99969
650	100	225	385	490	550	685	725	750
1200	113.375	230	395	495	570	700	740	780
1900	110	220	408.313	506.188	613	736	783	800
2700	106.313	198.125	393.438	491.5	597.75	756.125	1000	1050
3500	110	213.75	415	500	603.875	758	1000	1050
4200	115	235.375	410	515	605	704	920	1050
5000	120	241.625	438.063	532.313	649.75	795.75	1000	1050
5800	125	290	500	700	885	1050	1000	1050

Table no.	Label	Fault Codes
P0300-5	Method 3: Filtered angular acceleration of crankshaft in transmission grip state (clutch is engaged), compared to threshold primarily used to detect various forms of single cylinder and multiple cylinder continuous misfires	P0300,P0301,P0302,P0303,P0304,P0305,P0306,P0307,P0308

rpm / %	8.00018	14.99939	25.99945	32.00073	39.99939	50	60.00061	69.99969
650	60	90	210	255	250	275	275	275
1200	60	100	235	265	250	275	275	275
1900	80	150	255	285	250	345	345	345
2700	85	170	230	285	325	370	370	370
3500	85	125	240	300	375	375	375	375
4200	85	115	255	310	405	465	465	465
5000	85	165	240	295	405	600	600	600
5800	85	165	320	370	445	815	815	815

Table no.	Label	Fault Codes
P0300-7	Method 1: Angular acceleration of crankshaft in transmission open state (clutch is disengaged), compared to threshold primarily used to detect single random misfire as well as single cylinder continuous misfire	P0300,P0301,P0302,P0303,P0304,P0305,P0306,P0307,P0308

rpm / %	8.00018	14.99939	25.99945	32.00073	39.99939	50	60.00061	69.99969
650	100	225	385	490	550	685	725	750
1200	113.375	230	395	495	570	700	740	780
1900	110	220	408.313	506.188	613	736	783	800
2700	106.313	198.125	393.438	491.5	597.75	756.125	1000	1050
3500	110	213.75	415	500	603.875	758	1000	1050
4200	115	235.375	410	515	605	704	920	1050
5000	120	241.625	438.063	532.313	649.75	795.75	1000	1050
5800	125	290	500	700	885	1050	1000	1050

Table no.	Label	Fault Codes
P0300-8	Method 3: Filtered angular acceleration of crankshaft in transmission open state (clutch is disengaged), compared to threshold primarily used to detect various forms of single cylinder and multiple cylinder continuous misfires	P0300,P0301,P0302,P0303,P0304,P0305,P0306,P0307,P0308

rpm / %	8.00018	14.99939	25.99945	32.00073	39.99939	50	60.00061	69.99969
650	60	90	210	255	250	275	275	275
1200	60	100	235	265	250	275	275	275
1900	80	150	255	285	250	345	345	345
2700	85	170	230	285	325	370	370	370
3500	85	125	240	300	375	375	375	375
4200	85	115	255	310	405	465	465	465
5000	85	165	240	295	405	600	600	600
5800	85	165	320	370	445	815	815	815

Table no.	Label	Fault Codes
P0300-10	Method 1: Angular acceleration of crankshaft in transmission slip state (clutch is slipping), compared to threshold primarily used to detect single random misfire as well as single cylinder continuous misfire	P0300,P0301,P0302,P0303,P0304,P0305,P0306,P0307,P0308

Table no. | **Label** | **Fault Codes**

rpm / %	8.00018	14.99939	25.99945	32.00073	39.99939	50	60.00061	69.99969
650	100	225	385	490	550	685	725	750
1200	113.375	230	395	495	570	700	740	780
1900	110	220	408.313	506.188	613	736	783	800
2700	106.313	198.125	393.438	491.5	597.75	756.125	1000	1050
3500	110	213.75	415	500	603.875	758	1000	1050
4200	115	235.375	410	515	605	704	920	1050
5000	120	241.625	438.063	532.313	649.75	795.75	1000	1050
5800	125	290	500	700	885	1050	1000	1050

P0300-11 Method 3: Filtered angular acceleration of crankshaft in transmission slip state (clutch is slipping), compared to threshold primarily used to detect various forms of single cylinder and multiple cylinder continuous misfires — P0300,P0301,P0302,P0303,P0304,P0305,P0306,P0307,P0308

rpm / %	8.00018	14.99939	25.99945	32.00073	39.99939	50	60.00061	69.99969
650	60	90	210	255	250	275	275	275
1200	60	100	235	265	250	275	275	275
1900	80	150	255	285	250	345	345	345
2700	85	170	230	285	325	370	370	370
3500	85	125	240	300	375	375	375	375
4200	85	115	255	310	405	465	465	465
5000	85	165	240	295	405	600	600	600
5800	85	165	320	370	445	815	815	815

P0300-14 Method 1: Angular acceleration of crankshaft in half-engine mode state, compared to threshold primarily used to detect single random misfire as well as single cylinder continuous misfire — P0300,P0301,P0302,P0303,P0304,P0305,P0306,P0307,P0308

rpm / %	5.00031	10.00061	14.99939	17.99927	25	30.00031	35.00061	39.99939
650	100	190	250	300	400	500	2047.938	2047.938
1000	100	190	250	300	400	500	2047.938	2047.938
1500	74	190	293	335	400	500	2047.938	2047.938
2000	66	173	260	331	400	500	2047.938	2047.938
2500	100	173	260	334	400	500	2047.938	2047.938
3000	100	173	260	334	400	500	2047.938	2047.938
3500	2047.938	2047.938	2047.938	2047.938	2047.938	2047.938	2047.938	2047.938
4000	2047.938	2047.938	2047.938	2047.938	2047.938	2047.938	2047.938	2047.938

P0300-15 Method 1: Angular acceleration of crankshaft in catalyst heating, compared to threshold primarily used to detect single random misfire as well as single cylinder continuous misfire — P0300,P0301,P0302,P0303,P0304,P0305,P0306,P0307,P0308

%	2.99988	5.99976	8.99963	11.99951	14.99939	17.99927
rad/s^2	175	175	200	245	305	550

P0300-18 Method 3: Filtered angular acceleration of crankshaft in half-engine mode state, compared to threshold primarily used to detect various forms of single cylinder and multiple cylinder continuous misfires — P0300,P0301,P0302,P0303,P0304,P0305,P0306,P0307,P0308

rpm / %	5.00031	10.00061	14.99939	17.99927	25	30.00031	35.00061	39.99939
650	100	200	300	400	500	600	2047.938	2047.938
1000	100	200	300	400	500	600	2047.938	2047.938
1500	82.063	200	300	400	500	600	2047.938	2047.938
2000	82.063	190.625	276	400	500	600	2047.938	2047.938
2500	60	190	276.125	400	500	600	2047.938	2047.938
3000	2047.938	2047.938	2047.938	2047.938	2047.938	2047.938	2047.938	2047.938
3500	2047.938	2047.938	2047.938	2047.938	2047.938	2047.938	2047.938	2047.938
4000	2047.938	2047.938	2047.938	2047.938	2047.938	2047.938	2047.938	2047.938

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Table no.	Label	Fault Codes
P0300-19	Method 3: Filtered angular acceleration of crankshaft in catalyst heating state, compared to threshold primarily used to detect various forms of single cylinder and multiple cylinder continuous misfires	P0300,P0301,P0302,P0303,P0304,P0305,P0306,P0307,P0308

%	2.99988	5.99976	8.99963	11.99951	14.99939	17.99927
rad/s^2	250	250	250	250	335	335

Table no.	Label	Fault Codes
P0300-20	[A] Threshold zero torque at crankshaft, driving state	P0300,P0301,P0302,P0303,P0304,P0305,P0306,P0307,P0308

rpm	650	1500	2000	2500	3000	4000	5000	6000
%	5.32074	6.06995	6.30035	7.09991	7.51038	10.40039	14.05029	16.07971

Table no.	Label	Fault Codes
P0300-23	[D] Threshold zero torque at crankshaft, idle state	P0300,P0301,P0302,P0303,P0304,P0305,P0306,P0307,P0308

rpm	650	1500	2000	2500	3000	4000	5000	6000
%	5.32074	6.06995	6.30035	7.09991	7.51038	8.14972	9.28955	10.09064

Table no.	Label	Fault Codes
P0300-24	[E] Threshold zero torque, half-engine mode state, driving	P0300,P0301,P0302,P0303,P0304,P0305,P0306,P0307,P0308

rpm	650	1500	2000	2500	3000	4000	5000	6000
%	2.00043	4.89044	5.11932	5.52979	5.90057	5.90057	5.90057	5.90057

Table no.	Label	Fault Codes
P0300-25	[F] Threshold zero torque, half-engine mode state, idle	P0300,P0301,P0302,P0303,P0304,P0305,P0306,P0307,P0308

rpm	650	1500	2000	2500	3000	4000	5000	6000
%	2.00043	4.89044	5.11932	5.52979	5.90057	5.90057	5.90057	5.90057

Table no.	Label	Fault Codes
P0422-1	Difference between max. tank differential pressure & min. tank differential pressure (A-B)	P0442

l / °C	-7.5	-2.3	3.8	9	14.3	20.3	25.5	30.8	36.8
8	5.50049	5.50049	5.50049	5.50049	5.50049	5.50049	5.50049	5.50049	5.50049
15	4.49951	4.49951	4.49951	4.49951	4.49951	4.49951	4.49951	4.49951	4.49951
22	4.00024	4.00024	4.00024	4.00024	4.00024	4.00024	4.00024	4.00024	4.00024
29	3.49976	3.49976	3.49976	3.49976	3.49976	3.49976	3.49976	3.49976	3.49976
36	5	5	5	5	5	5	5	5	5
43	5	5	5	5	5	5	5	5	5
50	3.49976	3.49976	3.49976	3.49976	3.49976	3.49976	3.49976	3.49976	3.49976
57	3.00049	3.00049	3.00049	3.00049	3.00049	3.00049	3.00049	3.00049	3.00049
64	3.00049	3.00049	3.00049	3.00049	3.00049	3.00049	3.00049	3.00049	3.00049

Table no.	Label	Fault Codes
P0422-2	Tank pressure gradient	P0442

L	7.5	14	20.5	27	33.5	40	46.5	53	59.5	66
hPa/sec	0.00701	0.00999	0.015998	0.015998	0.015998	0.015998	0.02501	0.029993	0.029993	0.029993

Table no.	Label	Fault Codes
P2177-1	Torque commanded to charge control	P2177, P2178, P2179, P2180, P2187, P2188, P2189, P2190

Engine Speed (rpm)	0	4160	4800	4840
Torque change (%)	44.99969	44.99969	39.99939	0

Table no.	Label	Fault Codes
P2177-2	Torque commanded to charge control	P2177, P2178, P2179, P2180, P2187, P2188, P2189, P2190

Engine Speed (rpm)	760	920	1120	6000
Torque change (%)	99.98932	35.00061	8.00018	8.00018

Table no.	Label	Fault Codes
P2177-5	Blocking time for activation LC after acceleration enrichment	P2177, P2178, P2179, P2180, P2E68, P2E69, P2E6A, P2E6B, P2187, P2188, P2189, P2190

Temperature (Grad C)	-39.8	-20.3	-9.8	0	20.3	39.8	60	90
Time (s)	1	1	1	1	0.5	0.4	0.3	0.3

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Table no.	Label	Fault Codes
P2177-6	Blocking time for activation LC after deceleration enleanment	P2177, P2178, P2179, P2180, P2E68, P2E69, P2E6A, P2E6B, P2187, P2188, P2189, P2190

Temperature (Grad C)	-39.8	-20.3	-9.8	0	20.3	39.8	60	90
Time (s)	1	1	1	1	0.5	0.5	0.5	0.5

P2E68-1 Torque commanded to charge control — P2E68, P2E69, P2E6A, P2E6B

Engine Speed (rpm)	1000	1160	2320	2520
Torque change (%)	0	30.00031	30.00031	2.99988

P2E68-2 Torque commanded to charge control — P2E68, P2E69, P2E6A, P2E6B

Engine Speed (rpm)	1000	1200	1400	2520
Torque change (%)	99.98932	8.99963	3.99933	3.99933

P2187-1 Torque commanded to charge control — P2187, P2188, P2189, P2190

rpm	0	800	920	960
%	14.99939	14.99939	11.99951	0

P2187-2 Torque commanded to charge control — P2187, P2188, P2189, P2190

rpm	440	480	600	6000
%	99.98932	3.99933	3.99933	3.99933

P2096-2 Relative air mass — P2096, P2097, P2098, P2099, P2195, P2196, P2197, P2198

rpm	800	1000	1200	1400	1800	2400	2600	3600
%	90	90	80.3	75	60	50.3	39.8	30

P2096-3 Relative air mass — P2096, P2097, P2098, P2099, P2195, P2196, P2197, P2198

rpm	800	1000	1200	1400	1800	2400	2600	3600
%	20.3	20.3	20.3	20.3	20.3	20.3	24.8	24.8

P2096-4 Relative air mass — P2096, P2097, P2098, P2099, P2195, P2196, P2197, P2198

rpm	800	1000	1200	1400	1800	2400	2600	3600
%	90	90	80.3	75	60	50.3	39.8	30

P2096-5 Relative air mass — P2096, P2097, P2098, P2099, P2195, P2196, P2197, P2198

rpm	800	1000	1200	1400	1800	2400	2600	3600
%	15	15	15	15	17.3	20.3	20.3	20.3

P2237-1 Ratio of heat quantity for dew-point end detection sensor 1 and heat quantity threshold for dew-point end detection sensor 1 bank 1 — P2237

deg C / deg C	-40.04	-10.04	-0.04	9.96	19.96	59.96	99.96
-40.04	0.40625	0.203125	0.203125	0	0	0	0
-10.04	0.203125	0.203125	0.101563	0	0	0	0
-0.04	0.203125	0.101563	0.101563	0	0	0	0
9.96	0	0	0	0	0	0	0
19.96	0	0	0	0	0	0	0
59.96	0	0	0	0	0	0	0
99.96	0	0	0	0	0	0	0

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Table no.	Label	Fault Codes
P2240-1	Ratio of heat quantity for dew-point end detection sensor 1 and heat quantity threshold for dew-point end detection sensor 1 bank 2	P2240

deg C / deg C	-40.04	-10.04	-0.04	9.96	19.96	59.96	99.96
-40.04	0.40625	0.203125	0.203125	0	0	0	0
-10.04	0.203125	0.203125	0.101563	0	0	0	0
-0.04	0.203125	0.101563	0.101563	0	0	0	0
9.96	0	0	0	0	0	0	0
19.96	0	0	0	0	0	0	0
59.96	0	0	0	0	0	0	0
99.96	0	0	0	0	0	0	0

P0138-1 (b) Downstream O2 sensor heat threshold for release of heating (kJ) — P0138, P0036, P0037, P0038

deg C / deg C	-40.04	-10.04	-5.04	-0.04	9.96	19.96	29.96	44.96	59.96	99.96
-40.04	120	120	108	100	80	80	72	60	53	40
-10.04	120	80	72	68	64	64	58	48	43	32
-5.04	120	80	68	64	60	58	56	47	41	31
-0.04	120	80	64	62	58	56	54	45	40	30
9.96	120	80	62	60	48	48	43	36	32	24
19.96	120	72	56	54	43	36	35	29	26	20
29.96	120	64	50	48	38	31	27	24	9	9
59.96	120	64	46	42	34	27	21	15	0	0
79.96	120	64	40	36	29	23	18	9	0	0
99.96	120	60	40	36	29	23	18	9	0	0

P0138-2 (c) adjustment factor — P0138, P0036, P0037, P0038

deg C	-20.04	-0.04	19.96	54.96
-	0.4	0.5	0.25	0

P0138-3 (b) Downstream O2 sensor heat threshold for release of heating (kJ) — P0138, P0036, P0037, P0038

deg C / deg C	-40.04	-10.04	-5.04	-0.04	9.96	19.96	29.96	44.96	59.96	99.96
-40.04	96	88	84	80	74	74	74	74	68	64
-10.04	96	64	57	54	52	52	52	50	36	32
-5.04	96	64	52	48	47	45	45	42	30	25
-0.04	96	64	50	42	40	38	36	34	27	20
9.96	96	60	48	40	36	33	30	24	18	12
19.96	96	60	48	39	34	28	24	20	12	4
29.96	96	60	48	39	34	26	21	15	0	0
59.96	96	56	46	39	33	24	20	12	0	0
79.96	96	56	46	39	32	22	18	9	0	0
99.96	96	54	46	39	29	21	15	6	0	0

P0138-4 (c) adjustment factor — P0138, P0036, P0037, P0038

deg C	-20.04	-0.04	19.96	54.96
-	0.4	0.5	0.25	0

P0158-1 (b) Downstream O2 sensor heat threshold for release of heating (kJ) — P0158, P0056, P0057, P0058

deg C / deg C	-40.04	-10.04	-5.04	-0.04	9.96	19.96	29.96	44.96	59.96	99.96
-40.04	120	120	108	100	80	80	72	60	53	40
-10.04	120	80	72	68	64	64	58	48	43	32
-5.04	120	80	68	64	60	58	56	47	41	31
-0.04	120	80	64	62	58	56	54	45	40	30
9.96	120	80	62	60	48	48	43	36	32	24
19.96	120	72	56	54	43	36	35	29	26	20
29.96	120	64	50	48	38	31	27	24	9	9
59.96	120	64	46	42	34	27	21	15	0	0
79.96	120	64	40	36	29	23	18	9	0	0
99.96	120	60	40	36	29	23	18	9	0	0

P0158-2 (c) adjustment factor — P0158, P0056, P0057, P0058

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Table no. | **Label** | **Fault Codes**

deg C	-20.04	-0.04	19.96	54.96
-	0.4	0.5	0.25	0

P0158-3 (b) Downstream O2 sensor heat threshold for release of heating (kJ) — P0158, P0056, P0057, P0058

deg C / deg C	-40.04	-10.04	-5.04	-0.04	9.96	19.96	29.96	44.96	59.96	99.96
-40.04	96	88	84	80	74	74	74	74	68	64
-10.04	96	64	57	54	52	52	52	50	36	32
-5.04	96	64	52	48	47	45	45	42	30	25
-0.04	96	64	50	42	40	38	36	34	27	20
9.96	96	60	48	40	36	33	30	24	18	12
19.96	96	60	48	39	34	28	24	20	12	4
29.96	96	60	48	39	34	26	21	15	0	0
59.96	96	56	46	39	33	24	20	12	0	0
79.96	96	56	46	39	32	22	18	9	0	0
99.96	96	54	46	39	29	21	15	6	0	0

P0158-4 (c) adjustment factor — P0158, P0056, P0057, P0058

deg C	-20.04	-0.04	19.96	54.96
-	0.4	0.5	0.25	0

P013A-1 (b) Exhaust mass flow dependent correction for transition response time of secondary O2 S2B1 Lean to Rich — ,

kg/h	10	30	40	60	80	120
s	0.06	0.06	0.06	0.07	0.07	0.07

P013A-2 (b) Exhaust mass flow dependent correction for transition response time of secondary O2 S2B1 Rich to Lean — ,

kg/h	10	30	40	60	80	120
s	0.05	0.07	0.07	0.1	0.1	0.1

P0141-1 Internal resistance of Secondary O2 HEGO sensor bank 1 — P0141,

- / °C	350.006	500.006	599.991	699.998	849.998
0.6	16200	3500	3150	3000	3000
0.65	1000	850	750	650	500
0.7	1000	850	750	650	500
0.85	1000	850	750	650	500
1	1000	850	750	650	500

P0141-2 engine speed for normal, non-repeated, key starts — ,

hPa / deg C	-40.04	-0.04	39.96	79.96
800	700	600	600	600
900	700	600	600	600
1000	700	600	600	600
1100	700	600	600	600

P0141-3 engine speed fo rrepeated key starts and Stop-Start — ,

hPa / deg C	-40.04	-0.04	39.96	79.96
800	700	600	400	400
900	700	600	400	400
1000	700	600	400	400
1100	700	600	400	400

P0141-4 detection of end of start by engine speed threshold and injection counts — ,

deg C	-40.04	-0.04	39.96	79.96
-	32	16	4	4

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Table no.	Label	Fault Codes
P0161-1	Internal resistance of Secondary O2 HEGO sensor bank 2	P0161,

- / °C	350.006	500.006	599.991	699.998	849.998
0.6	16200	3500	3150	3000	3000
0.65	1000	850	750	650	500
0.7	1000	850	750	650	500
0.85	1000	850	750	650	500
1	1000	850	750	650	500

Table no.	Label	Fault Codes
P04DB-1	Charge pressure and air mass-dependent characteristic curve for calculating the monitoring limit of crankcase differential pressure	P04DB

kg/h / hPa	1300	1500	1700	1900	2100	2300	2500	2700
140	0.16	0.1	-0.55	-1.11	-1.71	-1.71	-1.71	-1.71
200	-1.34	-1.4	-2.05	-2.61	-3.21	-3.21	-3.21	-3.21
260	-7.2	-7.34	-2.5	-2.97	-4.14	-6	-4.14	-4.14
320	-8.8	-9.2	-4.5	-3.2	-5.1	-7	-5	-5
380	-10	-10.99	-6	-4.13	-6.06	-8	-6.06	-6.06
440	-13	-14	-8.13	-4.13	-9.88	-11	-9.88	-9.88
500	-15	-17	-11	-4.13	-12.88	-14	-12.88	-12.88
560	-15	-17	-11	-4.13	-12.88	-14	-12.88	-12.88

Table no.	Label	Fault Codes
P0128-1	(d1) temperatue model correction dependent on vehicle speed and ambient temperature	,

km/h / deg C	-40.04	-15.04	-10.04	-0.04	19.96	39.96	59.96	79.96
0	-0.0000488	-0.0000488	-0.0000488	-0.0000488	-0.0000488	-0.0000488	-0.0000488	-0.0000488
30	-0.0370605	-0.0360596	-0.0350586	-0.0330566	-0.0310547	-0.0300537	-0.0290527	-0.0280518
50	-0.0520508	-0.0510498	-0.0500488	-0.0480469	-0.0460449	-0.0450439	-0.044043	-0.043042
80	-0.0570557	-0.0560547	-0.0550537	-0.0530518	-0.0510498	-0.0500488	-0.0490479	-0.0480469
120	-0.0630371	-0.0620605	-0.0610596	-0.0590576	-0.0570557	-0.0560547	-0.0550537	-0.0540527
150	-0.069043	-0.068042	-0.067041	-0.0650391	-0.0630371	-0.0620605	-0.0610596	-0.0600586
180	-0.0750488	-0.0740479	-0.0730469	-0.0710449	-0.069043	-0.068042	-0.067041	-0.06604
200	-0.0810547	-0.0800537	-0.0790527	-0.0770508	-0.0750488	-0.0740479	-0.0730469	-0.0720459

Table no.	Label	Fault Codes
P0128-2	(c) correction factor for temperature difference over the radiator	,

K	-20	-10	0	5	10	15	20	25	30	35	40	50	60	75	90
deg C/s	0	0	0	0	0	0	0	0	0	0	0.0179932	0.0300049	0.05	0.075	0.1

Table no.	Label	Fault Codes
P0128-3	(a) temperature increment depending on inner torque and ambient temperature	,

deg C / W	0	508.9	2507	4995.1	7502.1	10009.1	35003.6	70007.3	99996.9	150004.8	199993.8	250001.7
-5.04	0	0.0050049	0.05	0.075	0.0824951	0.0899902	0.1050049	0.125	0.15	0.1800049	0.2	0.2199951
29.96	0	0.0050049	0.051001	0.0764893	0.0841553	0.0917969	0.1071045	0.1274902	0.1530029	0.1835938	0.2040039	0.2243896

Table no.	Label	Fault Codes
P0128-4	(b) Correction factor dependent on vehicle speed and ambient temperature	,

deg C / km/h	0	4	7	10	20	40	60	80	90	100	120	160
-40.04	1	1	1	1	1.040039	1.060059	1.089966	1.109985	1.130005	1.140015	1.150024	1.160034
-10.04	1	1	1	1	1.030029	1.050049	1.074951	1.094971	1.11499	1.125	1.13501	1.14502
9.96	1	1	1	1	1.02002	1.040039	1.060059	1.079956	1.099976	1.109985	1.119995	1.130005
29.96	1	1	1	1	1.001953	1.021973	1.041992	1.062012	1.082031	1.092041	1.102051	1.112061
39.96	1	1	1	1	1.000977	1.020996	1.041016	1.061035	1.081055	1.090942	1.100952	1.110962
69.96	1	1	1	1	1	1.02002	1.040039	1.060059	1.079956	1.089966	1.099976	1.109985

Table no.	Label	Fault Codes
P0128-5	monitoring delay time since engine start	.

K	-40	-10	0	10	30	50	70	90
s	60	45	25	15	10	10	10	10

Table no.	Label	Fault Codes
P050A-1	Temperature inside first brick of front catalyst during start	,

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Table no. **Label** **Fault Codes**

-	0.200012	0.5	0.700012	1
deg C	439.96	429.96	419.96	399.96

P053F-1 Maximum time for active catalyst heating in dependence from altitude and engine start temperature — P053F, P05CC , P05CD

- / °C	-15.04	-10.04	-0.04	9.96	19.96	39.96
0.700012	45	45	42.5	40	40	40
0.799988	42.5	42.5	40	37.5	35	35
0.900024	40	40	37.5	35	30	30
1	40	40	35	30	25	25

P05CC-1 for time — P05CC , P05CD

deg C	-20.04	-0.04	19.96	39.96	59.96	79.96
s	4	4	3	2	2	2

P05CC-2 Engine Speed — P05CC , P05CD

deg C	-20.04	-0.04	119.96	139.96
rpm	1150	1000	1000	1000

P0111-1 Integrated Air mass flow — P0111

deg C	-30.04	-20.04	-0.04
kg	20.02	10.01	1

P00AB-1 Integrated Air mass flow — P00AB

deg C	-30.04	-20.04	-0.04
kg	20.02	10.01	1

P0096-1 Integrated Air mass flow — P0096

Deg C	-30.04	-20.04	-0.04
Kg	20.02	10.01	1

P00A6-1 Integrated Air mass flow — P00A6

Deg C	-30.04	-20.04	-0.04
Kg	20.02	10.01	1

P057B-1 difference of the brake sensor voltage corresponds to a corrected value of — ,

mV	0	34.6	35	40	45	51	51.2	4999	5000
-	0	0	0	0	0	0	1	1	1

P0191-1 difference threshold for plausibility error detection high pressure dual sensor — ,

-	0	300	1000	2000	3500
-	100	100	100	200	200

P0326-1 — P0326, P0331, P032B, P033B

Engine Speed (rpm)	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500
Lower Threshold (V*ms)	0.525	0.675	0.75	0.825	0.9	0.975	0.9	0.975	1.05	1.125	1.2	1.275	1.35

P0326-2 — P0325, P0326, P032A, P032B, P0330, P0331, P033A, P033B, P06B6

DIAGNOSTIC SUMMARY TABLES -- ECM

OBD GROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125, FED--BIN125**

Table no. | **Label** | **Fault Codes**

Threshold (%) \ Engine Speed (rpm)	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500
45	120	120	120	120	120	120	120	100	100	100	100	100	100
60	120	120	120	120	120	120	120	100	100	100	100	100	100
100	120	120	120	120	120	120	120	100	100	100	100	100	100
140	240	240	240	240	240	240	240	200	200	200	200	200	200

P2138-1 Curve to calculate permitted maximum for difference of signal voltages of Accelerator pedal sensor 1 and sensor 2 — P2138

Accelerator Pedal Voltage (mV)	500	2100	2100.2
Permitted difference signal voltage between Accelerator Pedal sensor 1 and sensor 2 (mV)	120	180	180

P0121-1 Absolute difference between relative actual angle calculated based on voltages from sensor 1 and sensor 2 — P0121, P0221

%	0	5	10	15	100
%	5	5	6.25	6.25	6.25

P0226-1 Absolute difference between relative actual angle calculated based on voltages from sensor 1 and sensor 2 — P0226, P212B

%	0	5	10	15	100
%	5	5	6.25	6.25	6.25

P0524-1 minimal required oil pressure depending on operation point — P0524

Engine coolant temp (degC)/Engine speed (rpm)	100	600	2500	3000	3500	4000	5000	6000
-0.04	-70	35	35	49	66	86	130	182
19.96	-70	35	35	49	66	86	130	182
39.96	-70	35	35	49	66	86	130	182
59.96	-70	35	35	49	66	86	130	182
79.96	-70	35	35	49	66	86	130	182
99.96	-70	35	35	49	66	86	130	182
119.96	-70	35	35	49	66	86	130	182
139.96	-70	35	35	49	66	86	130	182

P0524-2 debounce time for low oil pressure warning — P0524

deg C	-40.04	-20.04	-0.04	20.96
s	15	10	3.5	2.2

P06DD-1 maximum threshold oil pressure control — P06DD

Engine coolant temp (degC)/Engine speed (rpm)	0	400	550	800	2400	2800	4000	4800	5400	6000
-40.04	800	800	300	300	300	300	300	300	300	300
-10.04	800	800	300	300	300	300	300	300	300	300
-0.04	800	800	100	100	100	100	100	100	100	100
19.96	800	800	100	100	100	100	100	100	100	100
39.96	800	800	100	100	100	100	100	100	100	100
59.96	800	800	100	100	100	100	100	100	100	100
79.96	800	800	100	100	100	100	100	100	100	100
99.96	800	800	100	100	100	100	100	100	100	100
119.96	800	800	100	100	100	100	100	100	100	100
149.96	800	800	100	100	100	100	100	100	100	100

P06DD-2 minimum threshold oil pressure control — P06DD

Engine coolant temp (degC)/Engine speed (rpm)	0	400	550	800	2400	2800	4000	4800	5400	6000
-40.04	-800	-800	-300	-300	-300	-300	-300	-300	-300	-300
-10.04	-800	-800	-300	-300	-300	-300	-300	-300	-300	-300
-0.04	-800	-800	-70	-70	-70	-70	-70	-70	-70	-70
19.96	-800	-800	-70	-70	-70	-70	-70	-70	-70	-70

DIAGNOSTIC SUMMARY TABLES -- ECM		
OBD GROUP: KGMXOBDG07	TEST GROUP: KGMXV04.2088	EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Table no. **Label** **Fault Codes**

39.96	-800	-800	-70	-70	-70	-70	-70	-70	-70	-70
59.96	-800	-800	-50	-70	-70	-70	-70	-70	-70	-70
79.96	-800	-800	-50	-70	-70	-70	-70	-70	-70	-70
99.96	-800	-800	-40	-70	-70	-70	-70	-70	-70	-70
119.96	-800	-800	-40	-70	-70	-70	-70	-70	-70	-70
149.96	-800	-800	-40	-70	-70	-70	-70	-70	-70	-70

P0616-1 dynamic thresholds for SCG detection P0616, P26E5

mV	4000	5000	6000	7000	8000	9000
mV	1950	2500	2950	3350	4000	4500

P2261-1 Ratio pressure downstream to upstream compressor P2261,P00C4

dm^3/s	17.625	34.969	67.844	118.094	155.813	228.094
-	1.069946	1.50293	2.302979	2.735962	3.259033	3.445923

P2261-2 Ratio pressure downstream to upstream compressor (bank 2) P2261,P00C4

dm^3/s	18.25	32.688	68.156	89.875	150.688	227.094
-	1.069946	1.505005	2.296997	2.69397	3.220947	3.407959

P2261-3 Set intake manifold pressure P2261,P00C4

rpm	1000	2000	4000	6000
hPa	0	100	250	350

P3499-1 for time

rpm	650	1000	1500	2000	2500	3000	4000
s	0.84	0.78	0.62	0.54	0.5	0.46	0.42

P00C6-1 Fuel rail pressure

deg C	-40.04	-20.04	-10.04	-0.04	19.96	59.96	89.96	109.96
MPa	12	12	7	7	7	7	7	7

P00C6-2 for number of synchronous counts

deg C	-30.04	-20.04	-0.04	19.96	59.96	89.96
-	48	40	16	16	16	16

P00C6-3 for time

deg C	-30.04	-20.04	-0.04	19.96	59.96	89.96
s	6	5	4	3	2	2

P00C6-4 A: Number of working cycle during preinjection

deg C	-40.04	-10.04	-5.04
-	1	1	0

P3499-2 for time
)

rpm	650	1000	1500	2000	2500	3000	4000
s	0.85	0.77	0.65	0.6	0.6	0.6	0.6

P0234-1 Delta-boost pressure control deviation

hPa	-500	-250	0	250	500	750	1000	1270
hPa	750	750	550	450	400	400	375	375

	DIAGNOSTIC SUMMARY TABLES -- ECM	
OBD GROUP: KGMXOBDG07	TEST GROUP: KGMXV04.2088	EMISSIONS STDS: CAL--ULEV125, FED--BIN125

Table no. **Label** **Fault Codes**

P02CA-1 Delta-boost pressure control deviation of bank 2

hPa	-500	-250	0	250	500	750	1000	1270
hPa	750	750	550	450	400	400	375	375

P0171-1 Canister purge mass flow

-	0	0.25	0.5	1
kg/h	3	1	0.5	0

P0299-1 Engine speed

hPa	600	980
rpm	3200	2800

P0628-1 Pre Supply Pump output voltage

mV	4000	5000	6000	7000	8000	9000
mV	1950	2500	2950	3350	4000	4500

P262B-4 Accumulated ecu-on-time since last ignition-off event

-	0	0.049805	0.100098	0.200195	0.299805	0.399902	0.5	0.600098	0.700195	0.799805	0.899902	1
s	120	180	240	600	1200	2400	3600	4800	6000	7200	8400	9600

P262B-2 Accumulated ecu-on-time since last ignition-off event

-	0	0.049805	0.100098	0.200195	0.299805	0.399902	0.5	0.600098	0.700195	0.799805	0.899902	1
s	120	180	240	600	1200	2400	3600	4800	6000	7200	8400	9600

P262B-3 Threshold value of calculated engine off time

-	0	0.0498	0.1001	0.1499	0.2002	0.2998	0.3999	0.5	0.6001	0.7002	0.7998	1
min	60	90	120	180	240	300	400	550	700	900	1200	2000

P262B-1 Threshold value of calculated engine off time

-	0	0.0498	0.1001	0.1499	0.2002	0.2998	0.3999	0.5	0.6001	0.7002	0.7998	1
min	0	0	0	10	20	40	80	160	240	300	360	420

P16D8-1 Power stage feedback voltage

mV	4000	5000	6000	7000	8000	9000
mV	1950	2500	2950	3350	4000	4500

19 OBDG07 ECM DTC Inhibit Tables

This document is intended to meet the requirements documented in section 1968.2 of Title 13, California Code of Regulations entitled Modifications to Malfunction and Diagnosis System Requirements for 2004 and Subsequent Model-Year Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles and Engines (OBD II), paragraphs (i)(2.2) for a table detailing supplemental calibration parameter data.

Inhibit Matrix for Diagnostic System Manager

Note: If the same DTC appears in the 'Inhibited DTC' column and again the 'Fault Active DTCs' list, this indicates that the test is stopped for the remainder of the current drive cycle after test completion or fault detection occurs.

The DTCs in this column is inhibited by the DTCs listed to the right	The DTCs in these columns inhibit the DTC to the left						The DTCs in these columns inhibit the DTC to the left						The DTCs in these columns inhibit the DTC to the left						The DTCs in these columns inhibit the DTC to the left
Inhibited DTC	Fault Active DTCs						Fault Active DTCs						Fault Active DTCs						Fault Active DTCs
B071F - Transmission Range Indicator	END																		
B2A00 - Door Open Switch Signal - Door Ajar Switch Signal Correlation	END																		
B2B0D - Central Gateway Module Ignition Switch Run/Start Position Circuit Low	END																		
B2B0E - Central Gateway Module Ignition Switch Run/Start Position Circuit High	END																		
B2B11 - Central Gateway Module System Voltage Low	END																		
B2B12 - Central Gateway Module Control Module Memory	END																		
B2B13 - Central Gateway Module Control Module Internal Performance	END																		
P000A - Camshaft Position System Slow Response Bank 1	P0010 - Camshaft Position Actuator Control Circuit Open	P0016 - Crankshaft to Camshaft Correlation	P0017 - Crankshaft to Exhaust Camshaft Correlation Bank 1	P0018 - Crankshaft to Intake Camshaft Correlation Bank 2	P0019 - Crankshaft to Exhaust Camshaft Correlation Bank 2	P0335 - Crankshaft Position Sensor Circuit	P0336 - Crankshaft Position Sensor Performance	P0341 - Camshaft Position Sensor Performance	P0342 - Camshaft Position Sensor Circuit Low	P0343 - Camshaft Position Sensor Circuit High	P0346 - Intake Camshaft Position Sensor Performance Bank 2	P0347 - Intake Camshaft Position Sensor Circuit Low Bank 2	P0348 - Intake Camshaft Position Sensor Circuit High Bank 2	P034A - Crankshaft Position Sensor Start Position Incorrect	P034B - Crankshaft Position Sensor Direction Incorrect	P0641 - Sensor Reference Voltage 1 Circuit Open	P2088 - Camshaft Position Actuator Control Circuit Low	P2089 - Camshaft Position Actuator Control Circuit High	END
P000B - Exhaust Camshaft Position System Slow Response Bank 1	P0013 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 1	P0016 - Crankshaft to Camshaft Correlation	P0017 - Crankshaft to Exhaust Camshaft Correlation Bank 1	P0018 - Crankshaft to Intake Camshaft Correlation Bank 2	P0019 - Crankshaft to Exhaust Camshaft Correlation Bank 2	P0335 - Crankshaft Position Sensor Circuit	P0336 - Crankshaft Position Sensor Performance	P034A - Crankshaft Position Sensor Start Position Incorrect	P034B - Crankshaft Position Sensor Direction Incorrect	P0366 - Exhaust Camshaft Position Sensor Performance Bank 1	P0367 - Exhaust Camshaft Position Sensor Circuit Low Bank 1	P0368 - Exhaust Camshaft Position Sensor Circuit High Bank 1	P0391 - Exhaust Camshaft Position Sensor Performance Bank 2	P0392 - Exhaust Camshaft Position Sensor Circuit Low Bank 2	P0393 - Exhaust Camshaft Position Sensor Circuit High Bank 2	P0641 - Sensor Reference Voltage 1 Circuit Open	P2090 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 1	P2091 - Exhaust Camshaft Position Actuator Control Circuit High Bank 1	END
P000C - Intake Camshaft Position System Slow Response Bank 2	P0016 - Crankshaft to Camshaft Correlation	P0017 - Crankshaft to Exhaust Camshaft Correlation Bank 1	P0018 - Crankshaft to Intake Camshaft Correlation Bank 2	P0019 - Crankshaft to Exhaust Camshaft Correlation Bank 2	P0020 - Intake Camshaft Position Actuator Control Circuit Open Bank 2	P0335 - Crankshaft Position Sensor Circuit	P0336 - Crankshaft Position Sensor Performance	P0341 - Camshaft Position Sensor Performance	P0342 - Camshaft Position Sensor Circuit Low	P0343 - Camshaft Position Sensor Circuit High	P0346 - Intake Camshaft Position Sensor Performance Bank 2	P0347 - Intake Camshaft Position Sensor Circuit Low Bank 2	P0348 - Intake Camshaft Position Sensor Circuit High Bank 2	P034A - Crankshaft Position Sensor Start Position Incorrect	P034B - Crankshaft Position Sensor Direction Incorrect	P0641 - Sensor Reference Voltage 1 Circuit Open	P2092 - Intake Camshaft Position Actuator Control Circuit Low Bank 2	P2093 - Intake Camshaft Position Actuator Control Circuit High Bank 2	END
P000D - Exhaust Camshaft Position System Slow Response Bank 2	P0016 - Crankshaft to Camshaft Correlation	P0017 - Crankshaft to Exhaust Camshaft Correlation Bank 1	P0018 - Crankshaft to Intake Camshaft Correlation Bank 2	P0019 - Crankshaft to Exhaust Camshaft Correlation Bank 2	P0023 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 2	P0335 - Crankshaft Position Sensor Circuit	P0336 - Crankshaft Position Sensor Performance	P034A - Crankshaft Position Sensor Start Position Incorrect	P034B - Crankshaft Position Sensor Direction Incorrect	P0366 - Exhaust Camshaft Position Sensor Performance Bank 1	P0367 - Exhaust Camshaft Position Sensor Circuit Low Bank 1	P0368 - Exhaust Camshaft Position Sensor Circuit High Bank 1	P0391 - Exhaust Camshaft Position Sensor Performance Bank 2	P0392 - Exhaust Camshaft Position Sensor Circuit Low Bank 2	P0393 - Exhaust Camshaft Position Sensor Circuit High Bank 2	P0641 - Sensor Reference Voltage 1 Circuit Open	P2094 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 2	P2095 - Exhaust Camshaft Position Actuator Control Circuit High Bank 2	END
P0010 - Camshaft Position Actuator Control Circuit Open	P0010 - Camshaft Position Actuator Control Circuit Open	P2088 - Camshaft Position Actuator Control Circuit Low	P2089 - Camshaft Position Actuator Control Circuit High	END															
P0011 - Camshaft Position System Performance	P0010 - Camshaft Position Actuator Control Circuit Open	P0016 - Crankshaft to Camshaft Correlation	P0017 - Crankshaft to Exhaust Camshaft Correlation Bank 1	P0018 - Crankshaft to Intake Camshaft Correlation Bank 2	P0019 - Crankshaft to Exhaust Camshaft Correlation Bank 2	P0335 - Crankshaft Position Sensor Circuit	P0336 - Crankshaft Position Sensor Performance	P0341 - Camshaft Position Sensor Performance	P0342 - Camshaft Position Sensor Circuit Low	P0343 - Camshaft Position Sensor Circuit High	P0346 - Intake Camshaft Position Sensor Performance Bank 2	P0347 - Intake Camshaft Position Sensor Circuit Low Bank 2	P0348 - Intake Camshaft Position Sensor Circuit High Bank 2	P034A - Crankshaft Position Sensor Start Position Incorrect	P034B - Crankshaft Position Sensor Direction Incorrect	P0641 - Sensor Reference Voltage 1 Circuit Open	P2088 - Camshaft Position Actuator Control Circuit Low	P2089 - Camshaft Position Actuator Control Circuit High	END
P0013 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 1	P0013 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 1	P2090 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 1	P2091 - Exhaust Camshaft Position Actuator Control Circuit High Bank 1	END															
P0014 - Exhaust Camshaft Position System Performance Bank 1	P0013 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 1	P0016 - Crankshaft to Camshaft Correlation	P0017 - Crankshaft to Exhaust Camshaft Correlation Bank 1	P0018 - Crankshaft to Intake Camshaft Correlation Bank 2	P0019 - Crankshaft to Exhaust Camshaft Correlation Bank 2	P0335 - Crankshaft Position Sensor Circuit	P0336 - Crankshaft Position Sensor Performance	P034A - Crankshaft Position Sensor Start Position Incorrect	P034B - Crankshaft Position Sensor Direction Incorrect	P0366 - Exhaust Camshaft Position Sensor Performance Bank 1	P0367 - Exhaust Camshaft Position Sensor Circuit Low Bank 1	P0368 - Exhaust Camshaft Position Sensor Circuit High Bank 1	P0391 - Exhaust Camshaft Position Sensor Performance Bank 2	P0392 - Exhaust Camshaft Position Sensor Circuit Low Bank 2	P0393 - Exhaust Camshaft Position Sensor Circuit High Bank 2	P0641 - Sensor Reference Voltage 1 Circuit Open	P2090 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 1	P2091 - Exhaust Camshaft Position Actuator Control Circuit High Bank 1	END
P0016 - Crankshaft to Camshaft Correlation	P0335 - Crankshaft Position Sensor Circuit	P0336 - Crankshaft Position Sensor Performance	P0341 - Camshaft Position Sensor Performance	P0342 - Camshaft Position Sensor Circuit Low	P0343 - Camshaft Position Sensor Circuit High	P034A - Crankshaft Position Sensor Start Position Incorrect	P034B - Crankshaft Position Sensor Direction Incorrect	P0641 - Sensor Reference Voltage 1 Circuit Open	P0651 - Sensor Reference Voltage 2 Circuit Open	END									
P0017 - Crankshaft to Exhaust Camshaft Correlation Bank 1	P0335 - Crankshaft Position Sensor Circuit	P0336 - Crankshaft Position Sensor Performance	P034A - Crankshaft Position Sensor Start Position Incorrect	P034B - Crankshaft Position Sensor Direction Incorrect	P0366 - Exhaust Camshaft Position Sensor Performance Bank 1	P0367 - Exhaust Camshaft Position Sensor Circuit Low Bank 1	P0368 - Exhaust Camshaft Position Sensor Circuit High Bank 1	P0641 - Sensor Reference Voltage 1 Circuit Open	P0651 - Sensor Reference Voltage 2 Circuit Open	END									
P0018 - Crankshaft to Intake Camshaft Correlation Bank 2	P0335 - Crankshaft Position Sensor Circuit	P0336 - Crankshaft Position Sensor Performance	P0346 - Intake Camshaft Position Sensor Performance Bank 2	P0347 - Intake Camshaft Position Sensor Circuit Low Bank 2	P0348 - Intake Camshaft Position Sensor Circuit High Bank 2	P034A - Crankshaft Position Sensor Start Position Incorrect	P034B - Crankshaft Position Sensor Direction Incorrect	P0641 - Sensor Reference Voltage 1 Circuit Open	P0651 - Sensor Reference Voltage 2 Circuit Open	END									
P0019 - Crankshaft to Exhaust Camshaft Correlation Bank 2	P0335 - Crankshaft Position Sensor Circuit	P0336 - Crankshaft Position Sensor Performance	P034A - Crankshaft Position Sensor Start Position Incorrect	P034B - Crankshaft Position Sensor Direction Incorrect	P0391 - Exhaust Camshaft Position Sensor Performance Bank 2	P0392 - Exhaust Camshaft Position Sensor Circuit Low Bank 2	P0393 - Exhaust Camshaft Position Sensor Circuit High Bank 2	P0641 - Sensor Reference Voltage 1 Circuit Open	P0651 - Sensor Reference Voltage 2 Circuit Open	END									
P0020 - Intake Camshaft Position Actuator Control Circuit Open Bank 2	P0020 - Intake Camshaft Position Actuator Control Circuit Open Bank 2	P2092 - Intake Camshaft Position Actuator Control Circuit Low Bank 2	P2093 - Intake Camshaft Position Actuator Control Circuit High Bank 2	END															
P0021 - Intake Camshaft Position System Performance Bank 2	P0016 - Crankshaft to Camshaft Correlation	P0017 - Crankshaft to Exhaust Camshaft Correlation Bank 1	P0018 - Crankshaft to Intake Camshaft Correlation Bank 2	P0019 - Crankshaft to Exhaust Camshaft Correlation Bank 2	P0020 - Intake Camshaft Position Actuator Control Circuit Open Bank 2	P0335 - Crankshaft Position Sensor Circuit	P0336 - Crankshaft Position Sensor Performance	P0341 - Camshaft Position Sensor Performance	P0342 - Camshaft Position Sensor Circuit Low	P0343 - Camshaft Position Sensor Circuit High	P0346 - Intake Camshaft Position Sensor Performance Bank 2	P0347 - Intake Camshaft Position Sensor Circuit Low Bank 2	P0348 - Intake Camshaft Position Sensor Circuit High Bank 2	P034A - Crankshaft Position Sensor Start Position Incorrect	P034B - Crankshaft Position Sensor Direction Incorrect	P0641 - Sensor Reference Voltage 1 Circuit Open	P2092 - Intake Camshaft Position Actuator Control Circuit Low Bank 2	P2093 - Intake Camshaft Position Actuator Control Circuit High Bank 2	END
P0023 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 2	P0023 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 2	P2094 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 2	P2095 - Exhaust Camshaft Position Actuator Control Circuit High Bank 2	END															
P0024 - Exhaust Camshaft Position System Performance Bank 2	P0016 - Crankshaft to Camshaft Correlation	P0017 - Crankshaft to Exhaust Camshaft Correlation Bank 1	P0018 - Crankshaft to Intake Camshaft Correlation Bank 2	P0019 - Crankshaft to Exhaust Camshaft Correlation Bank 2	P0023 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 2	P0335 - Crankshaft Position Sensor Circuit	P0336 - Crankshaft Position Sensor Performance	P034A - Crankshaft Position Sensor Start Position Incorrect	P034B - Crankshaft Position Sensor Direction Incorrect	P0366 - Exhaust Camshaft Position Sensor Performance Bank 1	P0367 - Exhaust Camshaft Position Sensor Circuit Low Bank 1	P0368 - Exhaust Camshaft Position Sensor Circuit High Bank 1	P0391 - Exhaust Camshaft Position Sensor Performance Bank 2	P0392 - Exhaust Camshaft Position Sensor Circuit Low Bank 2	P0393 - Exhaust Camshaft Position Sensor Circuit High Bank 2	P0641 - Sensor Reference Voltage 1 Circuit Open	P2094 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 2	P2095 - Exhaust Camshaft Position Actuator Control Circuit High Bank 2	END
P0030 - Oxygen Sensor Heater Control Circuit Open Bank 1 Sensor 1	END																		
P0031 - Oxygen Sensor Heater Control Circuit Low Bank 1 Sensor 1	END																		
P0032 - Oxygen Sensor Heater Control Circuit High Bank 1 Sensor 1	END																		
P0033 - Boost Bypass Valve A Control Circuit Open	END																		
P0034 - Boost Bypass Valve A Control Circuit Low	END																		
P0035 - Boost Bypass Valve A Control Circuit High	END																		
P0036 - Oxygen Sensor Heater Control Circuit Open Bank 1 Sensor 2	END																		
P0037 - Oxygen Sensor Heater Control Circuit Low Bank 1 Sensor 2	END																		
P0038 - Oxygen Sensor Heater Control Circuit High Bank 1 Sensor 2	END																		
P0050 - Oxygen Sensor Heater Control Circuit Open Bank 2 Sensor 1	END																		
P0051 - Oxygen Sensor Heater Control Circuit Low Bank 2 Sensor 1	END																		
P0052 - Oxygen Sensor Heater Control Circuit High Bank 2 Sensor 1	END																		
P0056 - Oxygen Sensor Heater Control Circuit Open Bank 2 Sensor 2	END																		
P0057 - Oxygen Sensor Heater Control Circuit Low Bank 2 Sensor 2	END																		
P0058 - Oxygen Sensor Heater Control Circuit High Bank 2 Sensor 2	END																		
P0071 - Ambient Air Temperature Sensor Performance	P0072 - Ambient Air Temperature Sensor Circuit Low	P0073 - Ambient Air Temperature Sensor Circuit High	P0116 - Engine Coolant Temperature Sensor Performance	P0117 - Engine Coolant Temperature Sensor Circuit Low	P0118 - Engine Coolant Temperature Sensor Circuit High	P0119 - Engine Coolant Temperature Sensor Circuit Erratic	END												
P0072 - Ambient Air Temperature Sensor Circuit Low	END																		
P0073 - Ambient Air Temperature Sensor Circuit High	END																		
P0074 - Ambient Air Temperature Sensor Circuit Intermittent	P0072 - Ambient Air Temperature Sensor Circuit Low	P0073 - Ambient Air Temperature Sensor Circuit High	END																
P0089 - Fuel Pressure Regulator Performance	P0090 - Fuel Pressure Regulator Control Circuit Open	P0191 - Fuel Rail Pressure Sensor Performance	P10E8 - Fuel Pressure Regulator High Control Circuit Shorted to Control Circuit	P228C - Fuel Pressure Regulator Exceeded Control Limits - Pressure Too Low	P228D - Fuel Pressure Regulator Exceeded Control Limits - Pressure Too High	P2C02 - Fuel Pressure Regulator Control Circuit Open Bank 2	P313A - Fuel Pressure Regulator High Control Circuit Shorted to Control Circuit Bank 2	END											
P0090 - Fuel Pressure Regulator Control Circuit Open	END																		
P0091 - Fuel Pressure Regulator Control Circuit Low	END																		
P0092 - Fuel Pressure Regulator Control Circuit High	END																		

19 OBDG07 ECM DTC Inhibit Tables

The DTCs in this column is inhibited by the DTCs listed to the right	The DTCs in these columns inhibit the DTC to the left						The DTCs in these columns inhibit the DTC to the left						The DTCs in these columns inhibit the DTC to the left						The DTCs in these columns inhibit the DTC to the left				
Inhibited DTC	Fault Active DTCs						Fault Active DTCs						Fault Active DTCs						Fault Active DTCs				
P0096 - Intake Air Temperature Sensor 2 Performance	P0097 - Intake Air Temperature Sensor 2 Circuit Low	P0098 - Intake Air Temperature Sensor 2 Circuit High	P0099 - Intake Air Temperature Sensor 2 Circuit Erratic	P0101 - Mass Air Flow Sensor Performance	P0102 - Mass Air Flow Sensor Circuit Low	P0103 - Mass Air Flow Sensor Circuit High	P0106 - Manifold Absolute Pressure Sensor Performance	P0107 - Manifold Absolute Pressure Sensor Circuit Low	P0108 - Manifold Absolute Pressure Sensor Circuit High	P010B - Mass Air Flow Sensor 2 Performance	P010C - Mass Air Flow Sensor 2 Circuit Low	P010D - Mass Air Flow Sensor 2 Circuit High	P0116 - Engine Coolant Temperature Sensor Performance	P0117 - Engine Coolant Temperature Sensor Circuit Low	P0118 - Engine Coolant Temperature Sensor Circuit High	P0119 - Engine Coolant Temperature Sensor Circuit Erratic	P2A0B - Manifold Absolute Pressure Sensor Performance Bank 2	P2A0C - Manifold Absolute Pressure Sensor Circuit Low Bank 2	P2A0D - Manifold Absolute Pressure Sensor Circuit High Bank 2	END			
P0097 - Intake Air Temperature Sensor 2 Circuit Low	END																						
P0098 - Intake Air Temperature Sensor 2 Circuit High	END																						
P0099 - Intake Air Temperature Sensor 2 Circuit Erratic	END																						
P00A6 - Intake Air Temperature Sensor 2 Performance Bank 2	P00A7 - Intake Air Temperature Sensor 2 Circuit Low Bank 2	P00A8 - Intake Air Temperature Sensor 2 Circuit High Bank 2	P00A9 - Intake Air Temperature Sensor 2 Circuit Erratic Bank 2	P0101 - Mass Air Flow Sensor Performance	P0102 - Mass Air Flow Sensor Circuit Low	P0103 - Mass Air Flow Sensor Circuit High	P0106 - Manifold Absolute Pressure Sensor Performance	P0107 - Manifold Absolute Pressure Sensor Circuit Low	P0108 - Manifold Absolute Pressure Sensor Circuit High	P010B - Mass Air Flow Sensor 2 Performance	P010C - Mass Air Flow Sensor 2 Circuit Low	P010D - Mass Air Flow Sensor 2 Circuit High	P0116 - Engine Coolant Temperature Sensor Performance	P0117 - Engine Coolant Temperature Sensor Circuit Low	P0118 - Engine Coolant Temperature Sensor Circuit High	P0119 - Engine Coolant Temperature Sensor Circuit Erratic	P2A0B - Manifold Absolute Pressure Sensor Performance Bank 2	P2A0C - Manifold Absolute Pressure Sensor Circuit Low Bank 2	P2A0D - Manifold Absolute Pressure Sensor Circuit High Bank 2	END			
P00A7 - Intake Air Temperature Sensor 2 Circuit Low Bank 2	END																						
P00A8 - Intake Air Temperature Sensor 2 Circuit High Bank 2	END																						
P00A9 - Intake Air Temperature Sensor 2 Circuit Erratic Bank 2	END																						
P00AB - Intake Air Temperature Sensor 1 Performance Bank 2	P00AC - Intake Air Temperature Sensor 1 Circuit Low Bank 2	P00AD - Intake Air Temperature Sensor 1 Circuit High Bank 2	P00AE - Intake Air Temperature Sensor 1 Circuit Erratic Bank 2	P0101 - Mass Air Flow Sensor Performance	P0102 - Mass Air Flow Sensor Circuit Low	P0103 - Mass Air Flow Sensor Circuit High	P0106 - Manifold Absolute Pressure Sensor Performance	P0107 - Manifold Absolute Pressure Sensor Circuit Low	P0108 - Manifold Absolute Pressure Sensor Circuit High	P010B - Mass Air Flow Sensor 2 Performance	P010C - Mass Air Flow Sensor 2 Circuit Low	P010D - Mass Air Flow Sensor 2 Circuit High	P0116 - Engine Coolant Temperature Sensor Performance	P0117 - Engine Coolant Temperature Sensor Circuit Low	P0118 - Engine Coolant Temperature Sensor Circuit High	P0119 - Engine Coolant Temperature Sensor Circuit Erratic	P0606 - Control Module Internal Performance	P2A0B - Manifold Absolute Pressure Sensor Performance Bank 2	P2A0C - Manifold Absolute Pressure Sensor Circuit Low Bank 2	P2A0D - Manifold Absolute Pressure Sensor Circuit High Bank 2	CONTINUED NEXT LINE		
	U0612 - Lost Communication With Intake Air Temperature Sensor Bank 2 Sensor 1	U1349 - Engine Control Module LIN Bus 5	U1372 - Invalid Data Received From Intake Air Temperature Sensor Bank 2 Sensor 1	END																			
P00AC - Intake Air Temperature Sensor 1 Circuit Low Bank 2	END																						
P00AD - Intake Air Temperature Sensor 1 Circuit High Bank 2	END																						
P00AE - Intake Air Temperature Sensor 1 Circuit Erratic Bank 2	P00AC - Intake Air Temperature Sensor 1 Circuit Low Bank 2	P00AD - Intake Air Temperature Sensor 1 Circuit High Bank 2	P0606 - Control Module Internal Performance	U0612 - Lost Communication With Intake Air Temperature Sensor Bank 2 Sensor 1	U1349 - Engine Control Module LIN Bus 5	U1372 - Invalid Data Received From Intake Air Temperature Sensor Bank 2 Sensor 1	END																
P00C0 - Boost Bypass Valve B Control Circuit Open	END																						
P00C1 - Boost Bypass Valve B Control Circuit Low	END																						
P00C2 - Boost Bypass Valve B Control Circuit High	END																						
P00C4 - Boost Bypass Valve B Stuck	P000A - Camshaft Position System Slow Response Bank 1	P000B - Exhaust Camshaft Position System Slow Response Bank 1	P000C - Intake Camshaft Position System Slow Response Bank 2	P000D - Exhaust Camshaft Position System Slow Response Bank 2	P0010 - Camshaft Position Actuator Control Circuit Open	P0011 - Camshaft Position System Performance	P0013 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 1	P0014 - Exhaust Camshaft Position System Performance Bank 1	P0020 - Intake Camshaft Position Actuator Control Circuit Open Bank 2	P0021 - Intake Camshaft Position System Performance Bank 2	P0023 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 2	P0024 - Exhaust Camshaft Position System Performance Bank 2	P0033 - Boost Bypass Valve A Control Circuit Open	P0034 - Boost Bypass Valve A Control Circuit Low	P0035 - Boost Bypass Valve A Control Circuit High	P0071 - Ambient Air Temperature Sensor Performance	P0072 - Ambient Air Temperature Sensor Circuit Low	P0073 - Ambient Air Temperature Sensor Circuit High	P0096 - Intake Air Temperature Sensor 2 Performance	P0097 - Intake Air Temperature Sensor 2 Circuit Low	P0098 - Intake Air Temperature Sensor 2 Circuit High	P0099 - Intake Air Temperature Sensor 2 Circuit Erratic	CONTINUED NEXT LINE
	P00A6 - Intake Air Temperature Sensor 2 Performance Bank 2	P00A7 - Intake Air Temperature Sensor 2 Circuit Low Bank 2	P00A8 - Intake Air Temperature Sensor 2 Circuit High Bank 2	P00A9 - Intake Air Temperature Sensor 2 Circuit Erratic Bank 2	P00C0 - Boost Bypass Valve B Control Circuit Open	P00C1 - Boost Bypass Valve B Control Circuit Low	P00C2 - Boost Bypass Valve B Control Circuit High	P0101 - Mass Air Flow Sensor Performance	P0102 - Mass Air Flow Sensor Circuit Low	P0103 - Mass Air Flow Sensor Circuit High	P0106 - Manifold Absolute Pressure Sensor Performance	P0107 - Manifold Absolute Pressure Sensor Circuit Low	P0108 - Manifold Absolute Pressure Sensor Circuit High	P010B - Mass Air Flow Sensor 2 Performance	P010C - Mass Air Flow Sensor 2 Circuit Low	P010D - Mass Air Flow Sensor 2 Circuit High	P0121 - Throttle Position Sensor Performance	P0122 - Throttle Position Sensor Circuit Low	P0123 - Throttle Position Sensor Circuit High	P0221 - Throttle Position Sensor 2 Performance	P0222 - Throttle Position Sensor 2 Circuit Low	P0223 - Throttle Position Sensor 2 Circuit High	CONTINUED NEXT LINE
	P0226 - Throttle Position Sensor Performance Bank 2	P0227 - Throttle Position Sensor Circuit Low Bank 2	P0228 - Throttle Position Sensor Circuit High Bank 2	P0236 - Turbocharger Boost Sensor Performance	P0237 - Turbocharger Boost Sensor Circuit Low	P0238 - Turbocharger Boost Sensor Circuit High	P0240 - Turbocharger Boost Sensor Performance Bank 2	P0241 - Turbocharger Boost Sensor Circuit Low Bank 2	P0242 - Turbocharger Boost Sensor Circuit High Bank 2	P2088 - Camshaft Position Actuator Control Circuit Low	P2089 - Camshaft Position Actuator Control Circuit High	P2090 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 1	P2091 - Exhaust Camshaft Position Actuator Control Circuit High Bank 1	P2092 - Intake Camshaft Position Actuator Control Circuit Low Bank 2	P2093 - Intake Camshaft Position Actuator Control Circuit High Bank 2	P2094 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 2	P2095 - Exhaust Camshaft Position Actuator Control Circuit High Bank 2	P212B - Throttle Position Sensor 2 Performance Bank 2	P212C - Throttle Position Sensor 2 Circuit Low Bank 2	P212D - Throttle Position Sensor 2 Circuit High Bank 2	P2176 - Minimum Throttle Position Not Learned	P2227 - Barometric Pressure Sensor Performance Bank 1 Sensor 1	CONTINUED NEXT LINE
	P2228 - Barometric Pressure Sensor Circuit Low Bank 1 Sensor 1	P2229 - Barometric Pressure Sensor Circuit High Bank 1 Sensor 1	P2A0B - Manifold Absolute Pressure Sensor Performance Bank 2	P2A0C - Manifold Absolute Pressure Sensor Circuit Low Bank 2	P2A0D - Manifold Absolute Pressure Sensor Circuit High Bank 2	U0607 - Lost Communication With Throttle Position Sensor Bank 1 Sensor 2	U0688 - Lost Communication With Throttle Position Sensor Bank 2 Sensor 2	U136D - Invalid Data Received From Throttle Position Sensor 2	U136F - Invalid Data Received From Throttle Position Sensor Bank 2 Sensor 2	END													
P00C6 - Fuel Rail Pressure Low During Engine Cranking	P0090 - Fuel Pressure Regulator Control Circuit Open	P0191 - Fuel Rail Pressure Sensor Performance	P10E8 - Fuel Pressure Regulator High Control Circuit Shorted to Control Circuit	P2C02 - Fuel Pressure Regulator Control Circuit Open Bank 2	P313A - Fuel Pressure Regulator High Control Circuit Shorted to Control Circuit Bank 2	END																	
P00C9 - Fuel Pressure Regulator High Control Circuit Low	END																						
P00CA - Fuel Pressure Regulator High Control Circuit High	END																						
P0101 - Mass Air Flow Sensor Performance	P000A - Camshaft Position System Slow Response Bank 1	P000B - Exhaust Camshaft Position System Slow Response Bank 1	P000C - Intake Camshaft Position System Slow Response Bank 2	P000D - Exhaust Camshaft Position System Slow Response Bank 2	P0010 - Camshaft Position Actuator Control Circuit Open	P0011 - Camshaft Position System Performance	P0013 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 1	P0014 - Exhaust Camshaft Position System Performance Bank 1	P0020 - Intake Camshaft Position Actuator Control Circuit Open Bank 2	P0021 - Intake Camshaft Position System Performance Bank 2	P0023 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 2	P0024 - Exhaust Camshaft Position System Performance Bank 2	P0101 - Mass Air Flow Sensor Performance	P0102 - Mass Air Flow Sensor Circuit Low	P0103 - Mass Air Flow Sensor Circuit High	P0106 - Manifold Absolute Pressure Sensor Performance	P0107 - Manifold Absolute Pressure Sensor Circuit Low	P0108 - Manifold Absolute Pressure Sensor Circuit High	P010B - Mass Air Flow Sensor 2 Performance	P010C - Mass Air Flow Sensor 2 Circuit Low	P010D - Mass Air Flow Sensor 2 Circuit High	P0121 - Throttle Position Sensor Performance	CONTINUED NEXT LINE
	P0122 - Throttle Position Sensor Circuit Low	P0123 - Throttle Position Sensor Circuit High	P0221 - Throttle Position Sensor 2 Performance	P0222 - Throttle Position Sensor 2 Circuit Low	P0223 - Throttle Position Sensor 2 Circuit High	P0226 - Throttle Position Sensor Performance Bank 2	P0227 - Throttle Position Sensor Circuit Low Bank 2	P0228 - Throttle Position Sensor Circuit High Bank 2	P0236 - Turbocharger Boost Sensor Performance	P0237 - Turbocharger Boost Sensor Circuit Low	P0238 - Turbocharger Boost Sensor Circuit High	P0240 - Turbocharger Boost Sensor Performance Bank 2	P0241 - Turbocharger Boost Sensor Circuit Low Bank 2	P0242 - Turbocharger Boost Sensor Circuit High Bank 2	P0638 - Throttle Actuator Control Command Performance	P0639 - Throttle Actuator Control Command Performance Bank 2	P1551 - Throttle Rest Position Not Reached During Learn	P2088 - Camshaft Position Actuator Control Circuit Low	P2089 - Camshaft Position Actuator Control Circuit High	P2090 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 1	P2091 - Exhaust Camshaft Position Actuator Control Circuit High Bank 1	P2092 - Intake Camshaft Position Actuator Control Circuit Low Bank 2	CONTINUED NEXT LINE
	P2093 - Intake Camshaft Position Actuator Control Circuit High Bank 2	P2094 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 2	P2095 - Exhaust Camshaft Position Actuator Control Circuit High Bank 2	P2100 - Throttle Actuator Control Motor Control Circuit Open	P2101 - Throttle Actuator Position Performance	P210A - Throttle Actuator Control Motor Control Circuit Open Bank 2	P210B - Throttle Actuator Position Performance Bank 2	P2119 - Throttle Closed Position Performance	P211D - Throttle Closed Position Performance Bank 2	P212B - Throttle Position Sensor 2 Performance Bank 2	P212C - Throttle Position Sensor 2 Circuit Low Bank 2	P212D - Throttle Position Sensor 2 Circuit High Bank 2	P2176 - Minimum Throttle Position Not Learned	P218A - Minimum Throttle Position Not Learned Bank 2	P2227 - Barometric Pressure Sensor Performance Bank 1 Sensor 1	P2228 - Barometric Pressure Sensor Circuit Low Bank 1 Sensor 1	P2229 - Barometric Pressure Sensor Circuit High Bank 1 Sensor 1	P222B - Barometric Pressure Sensor Performance Bank 2 Sensor 1	P222C - Barometric Pressure Sensor Circuit Low Bank 2 Sensor 1	P222D - Barometric Pressure Sensor Circuit High Bank 2 Sensor 1	P227B - Barometric Pressure Sensor Performance Bank 1 Sensor 2	P227C - Barometric Pressure Sensor Circuit Low Bank 1 Sensor 2	CONTINUED NEXT LINE
	P227D - Barometric Pressure Sensor Circuit High Bank 1 Sensor 2	P2A0B - Manifold Absolute Pressure Sensor Performance Bank 2	P2A0C - Manifold Absolute Pressure Sensor Circuit Low Bank 2	P2A0D - Manifold Absolute Pressure Sensor Circuit High Bank 2	P30D6 - Control Module Processor Serial Peripheral Interface Bus 1	P30D7 - Control Module Processor Serial Peripheral Interface Bus 2	P30E3 - Closed Throttle Position Exceeded Maximum Learning Limit	P30E4 - Closed Throttle Position Exceeded Minimum Learning Limit	P30E5 - Closed Throttle Position Exceeded Maximum Learning Limit Bank 2	P30E6 - Closed Throttle Position Exceeded Minimum Learning Limit Bank 2	P30E7 - Throttle Rest Position Not Reached During Learn Bank 2	U0607 - Lost Communication With Throttle Position Sensor Bank 1 Sensor 2	U0688 - Lost Communication With Throttle Position Sensor Bank 2 Sensor 2	U136D - Invalid Data Received From Throttle Position Sensor 2	U136F - Invalid Data Received From Throttle Position Sensor Bank 2 Sensor 2	END							
P0102 - Mass Air Flow Sensor Circuit Low	END																						
P0103 - Mass Air Flow Sensor Circuit High	END																						
P0106 - Manifold Absolute Pressure Sensor Performance	P000A - Camshaft Position System Slow Response Bank 1	P000B - Exhaust Camshaft Position System Slow Response Bank 1	P000C - Intake Camshaft Position System Slow Response Bank 2	P000D - Exhaust Camshaft Position System Slow Response Bank 2	P0010 - Camshaft Position Actuator Control Circuit Open	P0011 - Camshaft Position System Performance	P0013 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 1	P0014 - Exhaust Camshaft Position System Performance Bank 1	P0020 - Intake Camshaft Position Actuator Control Circuit Open Bank 2	P0021 - Intake Camshaft Position System Performance Bank 2	P0023 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 2	P0024 - Exhaust Camshaft Position System Performance Bank 2	P0096 - Intake Air Temperature Sensor 2 Performance	P0097 - Intake Air Temperature Sensor 2 Circuit Low	P0098 - Intake Air Temperature Sensor 2 Circuit High	P0099 - Intake Air Temperature Sensor 2 Circuit Erratic	P0106 - Manifold Absolute Pressure Sensor Performance	P0107 - Manifold Absolute Pressure Sensor Circuit Low	P0108 - Manifold Absolute Pressure Sensor Circuit High	P0121 - Throttle Position Sensor Performance	P0122 - Throttle Position Sensor Circuit Low	P0123 - Throttle Position Sensor Circuit High	CONTINUED NEXT LINE
	P0221 - Throttle Position Sensor 2 Performance	P0222 - Throttle Position Sensor 2 Circuit Low	P0223 - Throttle Position Sensor 2 Circuit High	P0236 - Turbocharger Boost Sensor Performance	P0237 - Turbocharger Boost Sensor Circuit Low	P0238 - Turbocharger Boost Sensor Circuit High	P0335 - Crankshaft Position Sensor Circuit	P0336 - Crankshaft Position Sensor Performance	P034A - Crankshaft Position Sensor Start Position Incorrect	P034B - Crankshaft Position Sensor Direction Incorrect	P2088 - Camshaft Position Actuator Control Circuit Low	P2089 - Camshaft Position Actuator Control Circuit High	P2090 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 1	P2091 - Exhaust Camshaft Position Actuator Control Circuit High Bank 1	P2092 - Intake Camshaft Position Actuator Control Circuit Low Bank 2	P2093 - Intake Camshaft Position Actuator Control Circuit High Bank 2	P2094 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 2	P2095 - Exhaust Camshaft Position Actuator Control Circuit High Bank 2	P2176 - Minimum Throttle Position Not Learned	P2227 - Barometric Pressure Sensor Performance Bank 1 Sensor 1	P2228 - Barometric Pressure Sensor Circuit Low Bank 1 Sensor 1	P2229 - Barometric Pressure Sensor Circuit High Bank 1 Sensor 1	CONTINUED NEXT LINE
	U0607 - Lost Communication With Throttle Position Sensor Bank 1 Sensor 2	U136D - Invalid Data Received From Throttle Position Sensor 2	END																				
P0107 - Manifold Absolute Pressure Sensor Circuit Low	P0641 - Sensor Reference Voltage 1 Circuit Open	END																					
P0108 - Manifold Absolute Pressure Sensor Circuit High	P0641 - Sensor Reference Voltage 1 Circuit Open	END																					
P010B - Mass Air Flow Sensor 2 Performance	P000A - Camshaft Position System Slow Response Bank 1	P000B - Exhaust Camshaft Position System Slow Response Bank 1	P000C - Intake Camshaft Position System Slow Response Bank 2	P000D - Exhaust Camshaft Position System Slow Response Bank 2	P0010 - Camshaft Position Actuator Control Circuit Open	P0011 - Camshaft Position System Performance	P0013 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 1	P0014 - Exhaust Camshaft Position System Performance Bank 1	P0020 - Intake Camshaft Position Actuator Control Circuit Open Bank 2	P0021 - Intake Camshaft Position System Performance Bank 2	P0023 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 2	P0024 - Exhaust Camshaft Position System Performance Bank 2	P0101 - Mass Air Flow Sensor Performance	P0102 - Mass Air Flow Sensor Circuit Low	P0103 - Mass Air Flow Sensor Circuit High	P0106 - Manifold Absolute Pressure Sensor Performance	P0107 - Manifold Absolute Pressure Sensor Circuit Low	P0108 - Manifold Absolute Pressure Sensor Circuit High	P010B - Mass Air Flow Sensor 2 Performance	P010C - Mass Air Flow Sensor 2 Circuit Low	P010D - Mass Air Flow Sensor 2 Circuit High	P0121 - Throttle Position Sensor Performance	CONTINUED NEXT LINE
	P0122 - Throttle Position Sensor Circuit Low	P0123 - Throttle Position Sensor Circuit High	P0221 - Throttle Position Sensor 2 Performance	P0222 - Throttle Position Sensor 2 Circuit Low	P0223 - Throttle Position Sensor 2 Circuit High	P0226 - Throttle Position Sensor Performance Bank 2	P0227 - Throttle Position Sensor Circuit Low Bank 2	P0228 - Throttle Position Sensor Circuit High Bank 2	P0236 - Turbocharger Boost Sensor Performance	P0237 - Turbocharger Boost Sensor Circuit Low	P0238 - Turbocharger Boost Sensor Circuit High	P0240 - Turbocharger Boost Sensor Performance Bank 2	P0241 - Turbocharger Boost Sensor Circuit Low Bank 2	P0242 - Turbocharger Boost Sensor Circuit High Bank 2	P0638 - Throttle Actuator Control Command Performance	P0639 - Throttle Actuator Control Command Performance Bank 2	P1551 - Throttle Rest Position Not Reached During Learn	P2088 - Camshaft Position Actuator Control Circuit Low	P2089 - Camshaft Position Actuator Control Circuit High	P2090 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 1	P2091 - Exhaust Camshaft Position Actuator Control Circuit High Bank 1	P2092 - Intake Camshaft Position Actuator Control Circuit Low Bank 2	CONTINUED NEXT LINE
	P2093 - Intake Camshaft Position Actuator Control Circuit High Bank 2	P2094 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 2	P2095 - Exhaust Camshaft Position Actuator Control Circuit High Bank 2	P2100 - Throttle Actuator Control Motor Control Circuit Open	P2101 - Throttle Actuator Position Performance	P210A - Throttle Actuator Control Motor Control Circuit Open Bank 2	P210B - Throttle Actuator Position Performance Bank 2	P2119 - Throttle Closed Position Performance	P211D - Throttle Closed Position Performance Bank 2	P212B - Throttle Position Sensor 2 Performance Bank 2	P212C - Throttle Position Sensor 2 Circuit Low Bank 2	P212D - Throttle Position Sensor 2 Circuit High Bank 2	P2176 - Minimum Throttle Position Not Learned	P218A - Minimum Throttle Position Not Learned Bank 2	P2227 - Barometric Pressure Sensor Performance Bank 1 Sensor 1	P2228 - Barometric Pressure Sensor Circuit Low Bank 1 Sensor 1	P2229 - Barometric Pressure Sensor Circuit High Bank 1 Sensor 1	P222B - Barometric Pressure Sensor Performance Bank 2 Sensor 1	P222C - Barometric Pressure Sensor Circuit Low Bank 2 Sensor 1	P222D - Barometric Pressure Sensor Circuit High Bank 2 Sensor 1	P227B - Barometric Pressure Sensor Performance Bank 1 Sensor 2	P227C - Barometric Pressure Sensor Circuit Low Bank 1 Sensor 2	CONTINUED NEXT LINE
	P227D - Barometric Pressure Sensor Circuit High Bank 1 Sensor 2	P2A0B - Manifold Absolute Pressure Sensor Performance Bank 2	P2A0C - Manifold Absolute Pressure Sensor Circuit Low Bank 2	P2A0D - Manifold Absolute Pressure Sensor Circuit High Bank 2	P30D6 - Control Module Processor Serial Peripheral Interface Bus 1	P30D7 - Control Module Processor Serial Peripheral Interface Bus 2	P30E3 - Closed Throttle Position Exceeded Maximum Learning Limit	P30E4 - Closed Throttle Position Exceeded Minimum Learning Limit	P30E5 - Closed Throttle Position Exceeded Maximum Learning Limit Bank 2	P30E6 - Closed Throttle Position Exceeded Minimum Learning Limit Bank 2	P30E7 - Throttle Rest Position Not Reached During Learn Bank 2	U0607 - Lost Communication With Throttle Position Sensor Bank 1 Sensor 2	U0688 - Lost Communication With Throttle Position Sensor Bank 2 Sensor 2	U136D - Invalid Data Received From Throttle Position Sensor 2	U136F - Invalid Data Received From Throttle Position Sensor Bank 2 Sensor 2	END							
P010C - Mass Air Flow Sensor 2 Circuit Low	END																						
P010D - Mass Air Flow Sensor 2 Circuit High	END																						
P0111 - Intake Air Temperature Sensor Performance	P0101 - Mass Air Flow Sensor Performance	P0102 - Mass Air Flow Sensor Circuit Low	P0103 - Mass Air Flow Sensor Circuit High	P0106 - Manifold Absolute Pressure Sensor Performance	P0107 - Manifold Absolute Pressure Sensor Circuit Low	P0108 - Manifold Absolute Pressure Sensor Circuit High	P010B - Mass Air Flow Sensor 2 Performance	P010C - Mass Air Flow Sensor 2 Circuit Low	P010D - Mass Air Flow Sensor 2 Circuit High	P0112 - Intake Air Temperature Sensor Circuit Low	P0113 - Intake Air Temperature Sensor Circuit High	P0114 - Intake Air Temperature Sensor Circuit Erratic	P0116 - Engine Coolant Temperature Sensor Performance	P0117 - Engine Coolant Temperature Sensor Circuit Low	P0118 - Engine Coolant Temperature Sensor Circuit High	P0119 - Engine Coolant Temperature Sensor Circuit Erratic	P0606 - Control Module Internal Performance	P2A0B - Manifold Absolute Pressure Sensor Performance Bank 2	P2A0C - Manifold Absolute Pressure Sensor Circuit Low Bank 2	P2A0D - Manifold Absolute Pressure Sensor Circuit High Bank 2	CONTINUED NEXT LINE		
	U0611 - Lost Communication With Intake Air Temperature Sensor Bank 1 Sensor 1	U1346 - Engine Control Module LIN Bus 2	U1370 - Invalid Data Received From Intake Air Temperature Sensor 1	END																			
P0112 - Intake Air Temperature Sensor Circuit Low	END																						
P0113 - Intake Air Temperature Sensor Circuit High	END																						
P0114 - Intake Air Temperature Sensor Circuit Erratic	P0112 - Intake Air Temperature Sensor Circuit Low	P0113 - Intake Air Temperature Sensor Circuit High	P0606 - Control Module Internal Performance	U0611 - Lost Communication With Intake Air Temperature Sensor Bank 1 Sensor 1	U1346 - Engine Control Module LIN Bus 2	U1370 - Invalid Data Received From Intake Air Temperature Sensor 1	END																
P0116 - Engine Coolant Temperature Sensor Performance	P0117 - Engine Coolant Temperature Sensor Circuit Low	P0118 - Engine Coolant Temperature Sensor Circuit High	P0119 - Engine Coolant Temperature Sensor Circuit Erratic	END																			
P0117 - Engine Coolant Temperature Sensor Circuit Low	END																						
P0118 - Engine Coolant Temperature Sensor Circuit High	END																						

19 OBDG07 ECM DTC Inhibit Tables

The DTCs in this column is inhibited by the DTCs listed to the right	The DTCs in these columns inhibit the DTC to the left						The DTCs in these columns inhibit the DTC to the left						The DTCs in these columns inhibit the DTC to the left						The DTCs in these columns inhibit the DTC to the left				
Inhibited DTC	Fault Active DTCs						Fault Active DTCs						Fault Active DTCs						Fault Active DTCs				
P0119 - Engine Coolant Temperature Sensor Circuit Erratic	END																						
P0121 - Throttle Position Sensor Performance	P0641 - Sensor Reference Voltage 1 Circuit Open	P06A3 - Sensor Reference Voltage 4 Circuit Open	END																				
P0122 - Throttle Position Sensor Circuit Low	P0641 - Sensor Reference Voltage 1 Circuit Open	P06A3 - Sensor Reference Voltage 4 Circuit Open	END																				
P0123 - Throttle Position Sensor Circuit High	P0641 - Sensor Reference Voltage 1 Circuit Open	P06A3 - Sensor Reference Voltage 4 Circuit Open	END																				
P0128 - Engine Coolant Temperature Below Thermostat Regulating Temperature	P0071 - Ambient Air Temperature Sensor Performance	P0072 - Ambient Air Temperature Sensor Circuit Low	P0073 - Ambient Air Temperature Sensor Circuit High	P0074 - Ambient Air Temperature Sensor Circuit Intermittent	P0116 - Engine Coolant Temperature Sensor Performance	P0117 - Engine Coolant Temperature Sensor Circuit Low	P0118 - Engine Coolant Temperature Sensor Circuit High	P0119 - Engine Coolant Temperature Sensor Circuit Erratic	END														
P0130 - HO2S Circuit Bank 1 Sensor 1	P0030 - Oxygen Sensor Heater Control Circuit Open Bank 1 Sensor 1	P0031 - Oxygen Sensor Heater Control Circuit Low Bank 1 Sensor 1	P0032 - Oxygen Sensor Heater Control Circuit High Bank 1 Sensor 1	P0130 - HO2S Circuit Bank 1 Sensor 1	P0131 - Oxygen Sensor Circuit Low Bank 1 Sensor 1	P0132 - Oxygen Sensor Circuit High Bank 1 Sensor 1	P0300 - Engine Misfire Detected	P0301 - Cylinder 1 Misfire Detected	P0302 - Cylinder 2 Misfire Detected	P0303 - Cylinder 3 Misfire Detected	P0304 - Cylinder 4 Misfire Detected	P0305 - Cylinder 5 Misfire Detected	P0306 - Cylinder 6 Misfire Detected	P0307 - Cylinder 7 Misfire Detected	P0308 - Cylinder 8 Misfire Detected	P064D - Control Module Oxygen Sensor Bank 1 Sensor 1 System Performance	P2237 - Oxygen Sensor Pumping Current Control Circuit Open Bank 1 Sensor 1	P2251 - Oxygen Sensor Low Reference Circuit Open Bank 1 Sensor 1	P2626 - Oxygen Sensor Pumping Current Trim Circuit Open Bank 1 Sensor 1	P30D8 - Control Module Processor Serial Peripheral Interface Bus 3	END		
P0131 - Oxygen Sensor Circuit Low Bank 1 Sensor 1	P0030 - Oxygen Sensor Heater Control Circuit Open Bank 1 Sensor 1	P0031 - Oxygen Sensor Heater Control Circuit Low Bank 1 Sensor 1	P0032 - Oxygen Sensor Heater Control Circuit High Bank 1 Sensor 1	P0130 - HO2S Circuit Bank 1 Sensor 1	P0131 - Oxygen Sensor Circuit Low Bank 1 Sensor 1	P0132 - Oxygen Sensor Circuit High Bank 1 Sensor 1	P064D - Control Module Oxygen Sensor Bank 1 Sensor 1 System Performance	P2237 - Oxygen Sensor Pumping Current Control Circuit Open Bank 1 Sensor 1	P2251 - Oxygen Sensor Low Reference Circuit Open Bank 1 Sensor 1	P2626 - Oxygen Sensor Pumping Current Trim Circuit Open Bank 1 Sensor 1	P30D8 - Control Module Processor Serial Peripheral Interface Bus 3	END											
P0132 - Oxygen Sensor Circuit High Bank 1 Sensor 1	P0030 - Oxygen Sensor Heater Control Circuit Open Bank 1 Sensor 1	P0031 - Oxygen Sensor Heater Control Circuit Low Bank 1 Sensor 1	P0032 - Oxygen Sensor Heater Control Circuit High Bank 1 Sensor 1	P0130 - HO2S Circuit Bank 1 Sensor 1	P0131 - Oxygen Sensor Circuit Low Bank 1 Sensor 1	P0132 - Oxygen Sensor Circuit High Bank 1 Sensor 1	P064D - Control Module Oxygen Sensor Bank 1 Sensor 1 System Performance	P2237 - Oxygen Sensor Pumping Current Control Circuit Open Bank 1 Sensor 1	P2251 - Oxygen Sensor Low Reference Circuit Open Bank 1 Sensor 1	P2626 - Oxygen Sensor Pumping Current Trim Circuit Open Bank 1 Sensor 1	P30D8 - Control Module Processor Serial Peripheral Interface Bus 3	END											
P0133 - Oxygen Sensor Slow Response Bank 1 Sensor 1	P000A - Camshaft Position System Slow Response Bank 1	P000B - Exhaust Camshaft Position System Slow Response Bank 1	P000C - Intake Camshaft Position System Slow Response Bank 2	P000D - Exhaust Camshaft Position System Slow Response Bank 2	P0010 - Camshaft Position Actuator Control Circuit Open	P0011 - Camshaft Position System Performance	P0013 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 1	P0014 - Exhaust Camshaft Position System Performance Bank 1	P0020 - Intake Camshaft Position Actuator Control Circuit Open Bank 2	P0021 - Intake Camshaft Position System Performance Bank 2	P0023 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 2	P0024 - Exhaust Camshaft Position System Performance Bank 2	P0030 - Oxygen Sensor Heater Control Circuit Open Bank 1 Sensor 1	P0031 - Oxygen Sensor Heater Control Circuit Low Bank 1 Sensor 1	P0032 - Oxygen Sensor Heater Control Circuit High Bank 1 Sensor 1	P0036 - Oxygen Sensor Heater Control Circuit Open Bank 1 Sensor 2	P0037 - Oxygen Sensor Heater Control Circuit Low Bank 1 Sensor 2	P0038 - Oxygen Sensor Heater Control Circuit High Bank 1 Sensor 2	P0101 - Mass Air Flow Sensor Performance	P0102 - Mass Air Flow Sensor Circuit Low	P0103 - Mass Air Flow Sensor Circuit High	P0106 - Manifold Absolute Pressure Sensor Performance	CONTINUED NEXT LINE
	P0107 - Manifold Absolute Pressure Sensor Circuit Low	P0108 - Manifold Absolute Pressure Sensor Circuit High	P010B - Mass Air Flow Sensor 2 Performance	P010C - Mass Air Flow Sensor 2 Circuit Low	P010D - Mass Air Flow Sensor 2 Circuit High	P0116 - Engine Coolant Temperature Sensor Performance	P0117 - Engine Coolant Temperature Sensor Circuit Low	P0118 - Engine Coolant Temperature Sensor Circuit High	P0119 - Engine Coolant Temperature Sensor Circuit Erratic	P0121 - Throttle Position Sensor Performance	P0122 - Throttle Position Sensor Circuit Low	P0123 - Throttle Position Sensor Circuit High	P0128 - Engine Coolant Temperature Below Thermostat Regulating Temperature	P0130 - HO2S Circuit Bank 1 Sensor 1	P0131 - Oxygen Sensor Circuit Low Bank 1 Sensor 1	P0132 - Oxygen Sensor Circuit High Bank 1 Sensor 1	P0133 - Oxygen Sensor Slow Response Bank 1 Sensor 1	P0137 - Oxygen Sensor Circuit Low Bank 1 Sensor 2	P0138 - Oxygen Sensor Circuit High Bank 1 Sensor 2	P013A - Oxygen Sensor Slow Response - Rich to Lean Bank 1 Sensor 2	P013B - Oxygen Sensor Slow Response - Lean to Rich Bank 1 Sensor 2	P013E - Oxygen Sensor Delayed Response - Rich to Lean Bank 1 Sensor 2	CONTINUED NEXT LINE
	P013F - Oxygen Sensor Delayed Response - Lean to Rich Bank 1 Sensor 2	P0140 - Oxygen Sensor Circuit Insufficient Activity Bank 1 Sensor 2	P0141 - Oxygen Sensor Heater Performance Bank 1 Sensor 2	P0171 - Fuel Trim System Lean Bank 1	P0172 - Fuel Trim System Rich Bank 1	P0221 - Throttle Position Sensor 2 Performance	P0222 - Throttle Position Sensor 2 Circuit Low	P0223 - Throttle Position Sensor 2 Circuit High	P0226 - Throttle Position Sensor Performance Bank 2	P0227 - Throttle Position Sensor Circuit Low Bank 2	P0228 - Throttle Position Sensor Circuit High Bank 2	P0300 - Engine Misfire Detected	P0301 - Cylinder 1 Misfire Detected	P0302 - Cylinder 2 Misfire Detected	P0303 - Cylinder 3 Misfire Detected	P0304 - Cylinder 4 Misfire Detected	P0305 - Cylinder 5 Misfire Detected	P0306 - Cylinder 6 Misfire Detected	P0307 - Cylinder 7 Misfire Detected	P0308 - Cylinder 8 Misfire Detected	P0443 - Evaporative Emission Purge Solenoid Control Circuit Open	P0458 - Evaporative Emission Purge Solenoid Control Circuit Low	CONTINUED NEXT LINE
	P0459 - Evaporative Emission Purge Solenoid Control Circuit High	P0496 - Evaporative Emission System Flow During Non-Purge	P0497 - Evaporative Emission System No Flow During Purge	P04AB - Evaporative Emission Purge Solenoid Control Circuit Open Bank 2	P04AC - Evaporative Emission Purge Solenoid Control Circuit Low Bank 2	P04AD - Evaporative Emission Purge Solenoid Control Circuit High Bank 2	P04AE - Evaporative Emission Purge Solenoid Performance Bank 2	P04DF - Evaporative Emission Purge Solenoid Performance Bank 1	P0641 - Sensor Reference Voltage 1 Circuit Open	P064D - Control Module Oxygen Sensor Bank 1 Sensor 1 System Performance	P0651 - Sensor Reference Voltage 2 Circuit Open	P0697 - Sensor Reference Voltage 3 Circuit Open	P06A3 - Sensor Reference Voltage 4 Circuit Open	P2088 - Camshaft Position Actuator Control Circuit Low	P2089 - Camshaft Position Actuator Control Circuit High	P2090 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 1	P2091 - Exhaust Camshaft Position Actuator Control Circuit High Bank 1	P2092 - Intake Camshaft Position Actuator Control Circuit Low Bank 2	P2093 - Intake Camshaft Position Actuator Control Circuit High Bank 2	P2094 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 2	P2095 - Exhaust Camshaft Position Actuator Control Circuit High Bank 2	P2096 - Post Catalyst Fuel Trim System Low Limit Bank 1	CONTINUED NEXT LINE
	P2097 - Post Catalyst Fuel Trim System High Limit Bank 1	P212B - Throttle Position Sensor 2 Performance Bank 2	P212C - Throttle Position Sensor 2 Circuit Low Bank 2	P212D - Throttle Position Sensor 2 Circuit High Bank 2	P2177 - Fuel Trim System Lean Off Idle Bank 1	P2178 - Fuel Trim System Rich Off Idle Bank 1	P2187 - Fuel Trim System Lean at Idle Bank 1	P2188 - Fuel Trim System Rich at Idle Bank 1	P2195 - Oxygen Sensor Signal Biased Lean Bank 1 Sensor 1	P2196 - Oxygen Sensor Signal Biased Rich Bank 1 Sensor 1	P2232 - Oxygen Sensor Signal Circuit Shorted to Heater Circuit Bank 1 Sensor 2	P2237 - Oxygen Sensor Pumping Current Control Circuit Open Bank 1 Sensor 1	P2251 - Oxygen Sensor Low Reference Circuit Open Bank 1 Sensor 1	P2270 - Oxygen Sensor Signal Stuck Lean Bank 1 Sensor 2	P2271 - Oxygen Sensor Signal Stuck Rich Bank 1 Sensor 2	P2297 - Oxygen Sensor Out of Range During Deceleration Bank 1 Sensor 1	P2626 - Oxygen Sensor Pumping Current Trim Circuit Open Bank 1 Sensor 1	P2A0B - Manifold Absolute Pressure Sensor Performance Bank 2	P2A0C - Manifold Absolute Pressure Sensor Circuit Low Bank 2	P2A0D - Manifold Absolute Pressure Sensor Circuit High Bank 2	P2E68 - Fuel Trim System Lean During Cylinder Deactivation Bank 1	P2E69 - Fuel Trim System Rich During Cylinder Deactivation Bank 1	CONTINUED NEXT LINE
	P30D8 - Control Module Processor Serial Peripheral Interface Bus 3	P318A - Cylinder 2 Reactivation Performance - Trapped High Pressure Exhaust Charge	P318B - Cylinder 3 Reactivation Performance - Trapped High Pressure Exhaust Charge	P318D - Cylinder 5 Reactivation Performance - Trapped High Pressure Exhaust Charge	P3190 - Cylinder 8 Reactivation Performance - Trapped High Pressure Exhaust Charge	P3409 - Cylinder 2 Deactivation Solenoid Control Circuit Open	P3411 - Cylinder 2 Deactivation Solenoid Control Circuit Low	P3412 - Cylinder 2 Deactivation Solenoid Control Circuit High	P3417 - Cylinder 3 Deactivation Solenoid Control Circuit Open	P3419 - Cylinder 3 Deactivation Solenoid Control Circuit Low	P3420 - Cylinder 3 Deactivation Solenoid Control Circuit High	P3433 - Cylinder 5 Deactivation Solenoid Control Circuit Open	P3435 - Cylinder 5 Deactivation Solenoid Control Circuit Low	P3436 - Cylinder 5 Deactivation Solenoid Control Circuit High	P3457 - Cylinder 8 Deactivation Solenoid Control Circuit Open	P3459 - Cylinder 8 Deactivation Solenoid Control Circuit Low	P3460 - Cylinder 8 Deactivation Solenoid Control Circuit High	P3499 - Cylinder 2 Deactivation Performance	P349A - Cylinder 3 Deactivation Performance	P349C - Cylinder 5 Deactivation Performance	P349F - Cylinder 8 Deactivation Performance	U0607 - Lost Communication With Throttle Position Sensor Bank 1 Sensor 2	CONTINUED NEXT LINE
	U0688 - Lost Communication With Throttle Position Sensor Bank 2 Sensor 2	U136D - Invalid Data Received From Throttle Position Sensor 2	U136F - Invalid Data Received From Throttle Position Sensor Bank 2 Sensor 2	END																			
P0137 - Oxygen Sensor Circuit Low Bank 1 Sensor 2	END																						
P0138 - Oxygen Sensor Circuit High Bank 1 Sensor 2	P0036 - Oxygen Sensor Heater Control Circuit Open Bank 1 Sensor 2	P0037 - Oxygen Sensor Heater Control Circuit Low Bank 1 Sensor 2	P0038 - Oxygen Sensor Heater Control Circuit High Bank 1 Sensor 2	END																			
P013A - Oxygen Sensor Slow Response - Rich to Lean Bank 1 Sensor 2	P000A - Camshaft Position System Slow Response Bank 1	P000B - Exhaust Camshaft Position System Slow Response Bank 1	P000C - Intake Camshaft Position System Slow Response Bank 2	P000D - Exhaust Camshaft Position System Slow Response Bank 2	P0010 - Camshaft Position Actuator Control Circuit Open	P0011 - Camshaft Position System Performance	P0013 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 1	P0014 - Exhaust Camshaft Position System Performance Bank 1	P0020 - Intake Camshaft Position Actuator Control Circuit Open Bank 2	P0021 - Intake Camshaft Position System Performance Bank 2	P0023 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 2	P0024 - Exhaust Camshaft Position System Performance Bank 2	P0030 - Oxygen Sensor Heater Control Circuit Open Bank 1 Sensor 1	P0031 - Oxygen Sensor Heater Control Circuit Low Bank 1 Sensor 1	P0032 - Oxygen Sensor Heater Control Circuit High Bank 1 Sensor 1	P0036 - Oxygen Sensor Heater Control Circuit Open Bank 1 Sensor 2	P0037 - Oxygen Sensor Heater Control Circuit Low Bank 1 Sensor 2	P0038 - Oxygen Sensor Heater Control Circuit High Bank 1 Sensor 2	P0101 - Mass Air Flow Sensor Performance	P0102 - Mass Air Flow Sensor Circuit Low	P0103 - Mass Air Flow Sensor Circuit High	P0106 - Manifold Absolute Pressure Sensor Performance	CONTINUED NEXT LINE
	P0107 - Manifold Absolute Pressure Sensor Circuit Low	P0108 - Manifold Absolute Pressure Sensor Circuit High	P010B - Mass Air Flow Sensor 2 Performance	P010C - Mass Air Flow Sensor 2 Circuit Low	P010D - Mass Air Flow Sensor 2 Circuit High	P0116 - Engine Coolant Temperature Sensor Performance	P0117 - Engine Coolant Temperature Sensor Circuit Low	P0118 - Engine Coolant Temperature Sensor Circuit High	P0119 - Engine Coolant Temperature Sensor Circuit Erratic	P0121 - Throttle Position Sensor Performance	P0122 - Throttle Position Sensor Circuit Low	P0123 - Throttle Position Sensor Circuit High	P0128 - Engine Coolant Temperature Below Thermostat Regulating Temperature	P0130 - HO2S Circuit Bank 1 Sensor 1	P0133 - Oxygen Sensor Slow Response Bank 1 Sensor 1	P0137 - Oxygen Sensor Circuit Low Bank 1 Sensor 2	P0138 - Oxygen Sensor Circuit High Bank 1 Sensor 2	P013A - Oxygen Sensor Slow Response - Rich to Lean Bank 1 Sensor 2	P013B - Oxygen Sensor Slow Response - Lean to Rich Bank 1 Sensor 2	P013E - Oxygen Sensor Delayed Response - Rich to Lean Bank 1 Sensor 2	P013F - Oxygen Sensor Delayed Response - Lean to Rich Bank 1 Sensor 2	P0140 - Oxygen Sensor Circuit Insufficient Activity Bank 1 Sensor 2	CONTINUED NEXT LINE
	P0141 - Oxygen Sensor Heater Performance Bank 1 Sensor 2	P0171 - Fuel Trim System Lean Bank 1	P0172 - Fuel Trim System Rich Bank 1	P0221 - Throttle Position Sensor 2 Performance	P0222 - Throttle Position Sensor 2 Circuit Low	P0223 - Throttle Position Sensor 2 Circuit High	P0226 - Throttle Position Sensor Performance Bank 2	P0227 - Throttle Position Sensor Circuit Low Bank 2	P0228 - Throttle Position Sensor Circuit High Bank 2	P0300 - Engine Misfire Detected	P0301 - Cylinder 1 Misfire Detected	P0302 - Cylinder 2 Misfire Detected	P0303 - Cylinder 3 Misfire Detected	P0304 - Cylinder 4 Misfire Detected	P0305 - Cylinder 5 Misfire Detected	P0306 - Cylinder 6 Misfire Detected	P0307 - Cylinder 7 Misfire Detected	P0308 - Cylinder 8 Misfire Detected	P0443 - Evaporative Emission Purge Solenoid Control Circuit Open	P0458 - Evaporative Emission Purge Solenoid Control Circuit Low	P0459 - Evaporative Emission Purge Solenoid Control Circuit High	P0496 - Evaporative Emission System Flow During Non-Purge	CONTINUED NEXT LINE
	P0497 - Evaporative Emission System No Flow During Purge	P04AB - Evaporative Emission Purge Solenoid Control Circuit Open Bank 2	P04AC - Evaporative Emission Purge Solenoid Control Circuit Low Bank 2	P04AD - Evaporative Emission Purge Solenoid Control Circuit High Bank 2	P04AE - Evaporative Emission Purge Solenoid Performance Bank 2	P04DF - Evaporative Emission Purge Solenoid Performance Bank 1	P0641 - Sensor Reference Voltage 1 Circuit Open	P0651 - Sensor Reference Voltage 2 Circuit Open	P0697 - Sensor Reference Voltage 3 Circuit Open	P06A3 - Sensor Reference Voltage 4 Circuit Open	P2088 - Camshaft Position Actuator Control Circuit Low	P2089 - Camshaft Position Actuator Control Circuit High	P2090 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 1	P2091 - Exhaust Camshaft Position Actuator Control Circuit High Bank 1	P2092 - Intake Camshaft Position Actuator Control Circuit Low Bank 2	P2093 - Intake Camshaft Position Actuator Control Circuit High Bank 2	P2094 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 2	P2095 - Exhaust Camshaft Position Actuator Control Circuit High Bank 2	P2096 - Post Catalyst Fuel Trim System Low Limit Bank 1	P2097 - Post Catalyst Fuel Trim System High Limit Bank 1	P212B - Throttle Position Sensor 2 Performance Bank 2	P212C - Throttle Position Sensor 2 Circuit Low Bank 2	CONTINUED NEXT LINE
	P212D - Throttle Position Sensor 2 Circuit High Bank 2	P2177 - Fuel Trim System Lean Off Idle Bank 1	P2178 - Fuel Trim System Rich Off Idle Bank 1	P2187 - Fuel Trim System Lean at Idle Bank 1	P2188 - Fuel Trim System Rich at Idle Bank 1	P2195 - Oxygen Sensor Signal Biased Lean Bank 1 Sensor 1	P2196 - Oxygen Sensor Signal Biased Rich Bank 1 Sensor 1	P2232 - Oxygen Sensor Signal Circuit Shorted to Heater Circuit Bank 1 Sensor 2	P2270 - Oxygen Sensor Signal Stuck Lean Bank 1 Sensor 2	P2271 - Oxygen Sensor Signal Stuck Rich Bank 1 Sensor 2	P2A0B - Manifold Absolute Pressure Sensor Performance Bank 2	P2A0C - Manifold Absolute Pressure Sensor Circuit Low Bank 2	P2A0D - Manifold Absolute Pressure Sensor Circuit High Bank 2	P2E68 - Fuel Trim System Lean During Cylinder Deactivation Bank 1	P2E69 - Fuel Trim System Rich During Cylinder Deactivation Bank 1	P318A - Cylinder 2 Reactivation Performance - Trapped High Pressure Exhaust Charge	P318B - Cylinder 3 Reactivation Performance - Trapped High Pressure Exhaust Charge	P318D - Cylinder 5 Reactivation Performance - Trapped High Pressure Exhaust Charge	P3190 - Cylinder 8 Reactivation Performance - Trapped High Pressure Exhaust Charge	P3409 - Cylinder 2 Deactivation Solenoid Control Circuit Open	P3411 - Cylinder 2 Deactivation Solenoid Control Circuit Low	P3412 - Cylinder 2 Deactivation Solenoid Control Circuit High	CONTINUED NEXT LINE
	P3417 - Cylinder 3 Deactivation Solenoid Control Circuit Open	P3419 - Cylinder 3 Deactivation Solenoid Control Circuit Low	P3420 - Cylinder 3 Deactivation Solenoid Control Circuit High	P3433 - Cylinder 5 Deactivation Solenoid Control Circuit Open	P3435 - Cylinder 5 Deactivation Solenoid Control Circuit Low	P3436 - Cylinder 5 Deactivation Solenoid Control Circuit High	P3457 - Cylinder 8 Deactivation Solenoid Control Circuit Open	P3459 - Cylinder 8 Deactivation Solenoid Control Circuit Low	P3460 - Cylinder 8 Deactivation Solenoid Control Circuit High	P3499 - Cylinder 2 Deactivation Performance	P349A - Cylinder 3 Deactivation Performance	P349C - Cylinder 5 Deactivation Performance	P349F - Cylinder 8 Deactivation Performance	U0607 - Lost Communication With Throttle Position Sensor Bank 1 Sensor 2	U0688 - Lost Communication With Throttle Position Sensor Bank 2 Sensor 2	U136D - Invalid Data Received From Throttle Position Sensor 2	U136F - Invalid Data Received From Throttle Position Sensor Bank 2 Sensor 2	END					
P013B - Oxygen Sensor Slow Response - Lean to Rich Bank 1 Sensor 2	P000A - Camshaft Position System Slow Response Bank 1	P000B - Exhaust Camshaft Position System Slow Response Bank 1	P000C - Intake Camshaft Position System Slow Response Bank 2	P000D - Exhaust Camshaft Position System Slow Response Bank 2	P0010 - Camshaft Position Actuator Control Circuit Open	P0011 - Camshaft Position System Performance	P0013 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 1	P0014 - Exhaust Camshaft Position System Performance Bank 1	P0020 - Intake Camshaft Position Actuator Control Circuit Open Bank 2	P0021 - Intake Camshaft Position System Performance Bank 2	P0023 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 2	P0024 - Exhaust Camshaft Position System Performance Bank 2	P0030 - Oxygen Sensor Heater Control Circuit Open Bank 1 Sensor 1	P0031 - Oxygen Sensor Heater Control Circuit Low Bank 1 Sensor 1	P0032 - Oxygen Sensor Heater Control Circuit High Bank 1 Sensor 1	P0036 - Oxygen Sensor Heater Control Circuit Open Bank 1 Sensor 2	P0037 - Oxygen Sensor Heater Control Circuit Low Bank 1 Sensor 2	P0038 - Oxygen Sensor Heater Control Circuit High Bank 1 Sensor 2	P0101 - Mass Air Flow Sensor Performance	P0102 - Mass Air Flow Sensor Circuit Low	P0103 - Mass Air Flow Sensor Circuit High	P0106 - Manifold Absolute Pressure Sensor Performance	CONTINUED NEXT LINE
	P0107 - Manifold Absolute Pressure Sensor Circuit Low	P0108 - Manifold Absolute Pressure Sensor Circuit High	P010B - Mass Air Flow Sensor 2 Performance	P010C - Mass Air Flow Sensor 2 Circuit Low	P010D - Mass Air Flow Sensor 2 Circuit High	P0116 - Engine Coolant Temperature Sensor Performance	P0117 - Engine Coolant Temperature Sensor Circuit Low	P0118 - Engine Coolant Temperature Sensor Circuit High	P0119 - Engine Coolant Temperature Sensor Circuit Erratic	P0121 - Throttle Position Sensor Performance	P0122 - Throttle Position Sensor Circuit Low	P0123 - Throttle Position Sensor Circuit High	P0128 - Engine Coolant Temperature Below Thermostat Regulating Temperature	P0130 - HO2S Circuit Bank 1 Sensor 1	P0131 - Oxygen Sensor Circuit Low Bank 1 Sensor 1	P0132 - Oxygen Sensor Circuit High Bank 1 Sensor 1	P0133 - Oxygen Sensor Slow Response Bank 1 Sensor 1	P0137 - Oxygen Sensor Circuit Low Bank 1 Sensor 2	P0138 - Oxygen Sensor Circuit High Bank 1 Sensor 2	P013A - Oxygen Sensor Slow Response - Rich to Lean Bank 1 Sensor 2	P013B - Oxygen Sensor Slow Response - Lean to Rich Bank 1 Sensor 2	P013E - Oxygen Sensor Delayed Response - Rich to Lean Bank 1 Sensor 2	CONTINUED NEXT LINE
	P013F - Oxygen Sensor Delayed Response - Lean to Rich Bank 1 Sensor 2	P0140 - Oxygen Sensor Circuit Insufficient Activity Bank 1 Sensor 2	P0141 - Oxygen Sensor Heater Performance Bank 1 Sensor 2	P0171 - Fuel Trim System Lean Bank 1	P0172 - Fuel Trim System Rich Bank 1	P0221 - Throttle Position Sensor 2 Performance	P0222 - Throttle Position Sensor 2 Circuit Low	P0223 - Throttle Position Sensor 2 Circuit High	P0226 - Throttle Position Sensor Performance Bank 2	P0227 - Throttle Position Sensor Circuit Low Bank 2	P0228 - Throttle Position Sensor Circuit High Bank 2	P0300 - Engine Misfire Detected	P0301 - Cylinder 1 Misfire Detected	P0302 - Cylinder 2 Misfire Detected	P0303 - Cylinder 3 Misfire Detected	P0304 - Cylinder 4 Misfire Detected	P0305 - Cylinder 5 Misfire Detected	P0306 - Cylinder 6 Misfire Detected	P0307 - Cylinder 7 Misfire Detected	P0308 - Cylinder 8 Misfire Detected	P0443 - Evaporative Emission Purge Solenoid Control Circuit Open	P0458 - Evaporative Emission Purge Solenoid Control Circuit Low	CONTINUED NEXT LINE
	P0459 - Evaporative Emission Purge Solenoid Control Circuit High	P0496 - Evaporative Emission System Flow During Non-Purge	P0497 - Evaporative Emission System No Flow During Purge	P04AB - Evaporative Emission Purge Solenoid Control Circuit Open Bank 2	P04AC - Evaporative Emission Purge Solenoid Control Circuit Low Bank 2	P04AD - Evaporative Emission Purge Solenoid Control Circuit High Bank 2	P04AE - Evaporative Emission Purge Solenoid Performance Bank 2	P04DF - Evaporative Emission Purge Solenoid Performance Bank 1	P0641 - Sensor Reference Voltage 1 Circuit Open	P064D - Control Module Oxygen Sensor Bank 1 Sensor 1 System Performance	P0651 - Sensor Reference Voltage 2 Circuit Open	P0697 - Sensor Reference Voltage 3 Circuit Open	P06A3 - Sensor Reference Voltage 4 Circuit Open	P2088 - Camshaft Position Actuator Control Circuit Low	P2089 - Camshaft Position Actuator Control Circuit High	P2090 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 1	P2091 - Exhaust Camshaft Position Actuator Control Circuit High Bank 1	P2092 - Intake Camshaft Position Actuator Control Circuit Low Bank 2	P2093 - Intake Camshaft Position Actuator Control Circuit High Bank 2	P2094 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 2	P2095 - Exhaust Camshaft Position Actuator Control Circuit High Bank 2	P2096 - Post Catalyst Fuel Trim System Low Limit Bank 1	CONTINUED NEXT LINE
	P2097 - Post Catalyst Fuel Trim System High Limit Bank 1	P212B - Throttle Position Sensor 2 Performance Bank 2	P212C - Throttle Position Sensor 2 Circuit Low Bank 2	P212D - Throttle Position Sensor 2 Circuit High Bank 2	P2177 - Fuel Trim System Lean Off Idle Bank 1	P2178 - Fuel Trim System Rich Off Idle Bank 1	P2187 - Fuel Trim System Lean at Idle Bank 1	P2188 - Fuel Trim System Rich at Idle Bank 1	P2195 - Oxygen Sensor Signal Biased Lean Bank 1 Sensor 1	P2196 - Oxygen Sensor Signal Biased Rich Bank 1 Sensor 1	P2232 - Oxygen Sensor Signal Circuit Shorted to Heater Circuit Bank 1 Sensor 2	P2237 - Oxygen Sensor Pumping Current Control Circuit Open Bank 1 Sensor 1	P2251 - Oxygen Sensor Low Reference Circuit Open Bank 1 Sensor 1	P2270 - Oxygen Sensor Signal Stuck Lean Bank 1 Sensor 2	P2271 - Oxygen Sensor Signal Stuck Rich Bank 1 Sensor 2	P2297 - Oxygen Sensor Out of Range During Deceleration Bank 1 Sensor 1	P2626 - Oxygen Sensor Pumping Current Trim Circuit Open Bank 1 Sensor 1	P2A0B - Manifold Absolute Pressure Sensor Performance Bank 2	P2A0C - Manifold Absolute Pressure Sensor Circuit Low Bank 2	P2A0D - Manifold Absolute Pressure Sensor Circuit High Bank 2	P2E68 - Fuel Trim System Lean During Cylinder Deactivation Bank 1	P2E69 - Fuel Trim System Rich During Cylinder Deactivation Bank 1	CONTINUED NEXT LINE
	P30D8 - Control Module Processor Serial Peripheral Interface Bus 3	P318A - Cylinder 2 Reactivation Performance - Trapped High Pressure Exhaust Charge	P318B - Cylinder 3 Reactivation Performance - Trapped High Pressure Exhaust Charge	P318D - Cylinder 5 Reactivation Performance - Trapped High Pressure Exhaust Charge	P3190 - Cylinder 8 Reactivation Performance - Trapped High Pressure Exhaust Charge	P3409 - Cylinder 2 Deactivation Solenoid Control Circuit Open	P3411 - Cylinder 2 Deactivation Solenoid Control Circuit Low	P3412 - Cylinder 2 Deactivation Solenoid Control Circuit High	P3417 - Cylinder 3 Deactivation Solenoid Control Circuit Open	P3419 - Cylinder 3 Deactivation Solenoid Control Circuit Low	P3420 - Cylinder 3 Deactivation Solenoid Control Circuit High	P3433 - Cylinder 5 Deactivation Solenoid Control Circuit Open	P3435 - Cylinder 5 Deactivation Solenoid Control Circuit Low	P3436 - Cylinder 5 Deactivation Solenoid Control Circuit High	P3457 - Cylinder 8 Deactivation Solenoid Control Circuit Open	P3459 - Cylinder 8 Deactivation Solenoid Control Circuit Low	P3460 - Cylinder 8 Deactivation Solenoid Control Circuit High	P3499 - Cylinder 2 Deactivation Performance	P349A - Cylinder 3 Deactivation Performance	P349C - Cylinder 5 Deactivation Performance	P349F - Cylinder 8 Deactivation Performance	U0607 - Lost Communication With Throttle Position Sensor Bank 1 Sensor 2	CONTINUED NEXT LINE
	U0688 - Lost Communication With Throttle Position Sensor Bank 2 Sensor 2	U136D - Invalid Data Received From Throttle Position Sensor 2	U136F - Invalid Data Received From Throttle Position Sensor Bank 2 Sensor 2	END																			
P013C - Oxygen Sensor Slow Response - Rich to Lean Bank 2 Sensor 2	P000A - Camshaft Position System Slow Response Bank 1	P000B - Exhaust Camshaft Position System Slow Response Bank 1	P000C - Intake Camshaft Position System Slow Response Bank 2	P000D - Exhaust Camshaft Position System Slow Response Bank 2	P0010 - Camshaft Position Actuator Control Circuit Open	P0011 - Camshaft Position System Performance	P0013 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 1	P0014 - Exhaust Camshaft Position System Performance Bank 1	P0020 - Intake Camshaft Position Actuator Control Circuit Open Bank 2	P0021 - Intake Camshaft Position System Performance Bank 2	P0023 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 2	P0024 - Exhaust Camshaft Position System Performance Bank 2	P0050 - Oxygen Sensor Heater Control Circuit Open Bank 2 Sensor 1	P0051 - Oxygen Sensor Heater Control Circuit Low Bank 2 Sensor 1	P0052 - Oxygen Sensor Heater Control Circuit High Bank 2 Sensor 1	P0056 - Oxygen Sensor Heater Control Circuit Open Bank 2 Sensor 2	P0057 - Oxygen Sensor Heater Control Circuit Low Bank 2 Sensor 2	P0058 - Oxygen Sensor Heater Control Circuit High Bank 2 Sensor 2	P0101 - Mass Air Flow Sensor Performance	P0102 - Mass Air Flow Sensor Circuit Low	P0103 - Mass Air Flow Sensor Circuit High	P0106 - Manifold Absolute Pressure Sensor Performance	CONTINUED NEXT LINE
	P0107 - Manifold Absolute Pressure Sensor Circuit Low	P0108 - Manifold Absolute Pressure Sensor Circuit High	P010B - Mass Air Flow Sensor 2 Performance	P010C - Mass Air Flow Sensor 2 Circuit Low	P010D - Mass Air Flow Sensor 2 Circuit High	P0116 - Engine Coolant Temperature Sensor Performance	P0117 - Engine Coolant Temperature Sensor Circuit Low	P0118 - Engine Coolant Temperature Sensor Circuit High	P0119 - Engine Coolant Temperature Sensor Circuit Erratic	P0121 - Throttle Position Sensor Performance	P0122 - Throttle Position Sensor Circuit Low	P0123 - Throttle Position Sensor Circuit High	P0128 - Engine Coolant Temperature Below Thermostat Regulating Temperature	P013C - Oxygen Sensor Slow Response - Rich to Lean Bank 2 Sensor 2	P013D - Oxygen Sensor Slow Response - Lean to Rich Bank 2 Sensor 2	P014A - Oxygen Sensor Delayed Response - Rich to Lean Bank 2 Sensor 2	P014B - Oxygen Sensor Delayed Response - Lean to Rich Bank 2 Sensor 2	P0150 - HO2S Circuit Bank 2 Sensor 1	P0153 - Oxygen Sensor Slow Response Bank 2 Sensor 1	P0157 - Oxygen Sensor Circuit Low Bank 2 Sensor 2	P0158 - Oxygen Sensor Circuit High Bank 2 Sensor 2	P0160 - Oxygen Sensor Circuit Insufficient Activity Bank 2 Sensor 2	CONTINUED NEXT LINE
	P0161 - Oxygen Sensor Heater Performance Bank 2 Sensor 2	P0174 - Fuel Trim System Lean Bank 2	P0175 - Fuel Trim System Rich Bank 2	P0221 - Throttle Position Sensor 2 Performance	P0222 - Throttle Position Sensor 2 Circuit Low	P0223 - Throttle Position Sensor 2 Circuit High	P0226 - Throttle Position Sensor Performance Bank 2	P0227 - Throttle Position Sensor Circuit Low Bank 2	P0228 - Throttle Position Sensor Circuit High Bank 2	P0300 - Engine Misfire Detected	P0301 - Cylinder 1 Misfire Detected	P0302 - Cylinder 2 Misfire Detected	P0303 - Cylinder 3 Misfire Detected	P0304 - Cylinder 4 Misfire Detected	P0305 - Cylinder 5 Misfire Detected	P0306 - Cylinder 6 Misfire Detected	P0307 - Cylinder 7 Misfire Detected	P0308 - Cylinder 8 Misfire Detected	P0443 - Evaporative Emission Purge Solenoid Control Circuit Open	P0458 - Evaporative Emission Purge Solenoid Control Circuit Low	P0459 - Evaporative Emission Purge Solenoid Control Circuit High	P0496 - Evaporative Emission System Flow During Non-Purge	CONTINUED NEXT LINE
	P0497 - Evaporative Emission System No Flow During Purge	P04AB - Evaporative Emission Purge Solenoid Control Circuit Open Bank 2	P04AC - Evaporative Emission Purge Solenoid Control Circuit Low Bank 2	P04AD - Evaporative Emission Purge Solenoid Control Circuit High Bank 2	P04AE - Evaporative Emission Purge Solenoid Performance Bank 2	P04DF - Evaporative Emission Purge Solenoid Performance Bank 1	P0641 - Sensor Reference Voltage 1 Circuit Open	P0651 - Sensor Reference Voltage 2 Circuit Open	P0697 - Sensor Reference Voltage 3 Circuit Open	P06A3 - Sensor Reference Voltage 4 Circuit Open	P2088 - Camshaft Position Actuator Control Circuit Low	P2089 - Camshaft Position Actuator Control Circuit High	P2090 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 1	P2091 - Exhaust Camshaft Position Actuator Control Circuit High Bank 1	P2092 - Intake Camshaft Position Actuator Control Circuit Low Bank 2	P2093 - Intake Camshaft Position Actuator Control Circuit High Bank 2	P2094 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 2	P2095 - Exhaust Camshaft Position Actuator Control Circuit High Bank 2	P2098 - Post Catalyst Fuel Trim System Low Limit Bank 2	P2099 - Post Catalyst Fuel Trim System High Limit Bank 2	P212B - Throttle Position Sensor 2 Performance Bank 2	P212C - Throttle Position Sensor 2 Circuit Low Bank 2	CONTINUED NEXT LINE
	P212D - Throttle Position Sensor 2 Circuit High Bank 2	P2179 - Fuel Trim System Lean Off Idle Bank 2	P2180 - Fuel Trim System Rich Off Idle Bank 2	P2189 - Fuel Trim System Lean at Idle Bank 2	P2190 - Fuel Trim System Rich at Idle Bank 2	P2197 - Oxygen Sensor Signal Biased Lean Bank 2 Sensor 1	P2198 - Oxygen Sensor Signal Biased Rich Bank 2 Sensor 1	P2235 - Oxygen Sensor Signal Circuit Shorted to Heater Circuit Bank 2 Sensor 2	P2272 - Oxygen Sensor Signal Stuck Lean Bank 2 Sensor 2	P2273 - Oxygen Sensor Signal Stuck Rich Bank 2 Sensor 2	P2A0B - Manifold Absolute Pressure Sensor Performance Bank 2	P2A0C - Manifold Absolute Pressure Sensor Circuit Low Bank 2	P2A0D - Manifold Absolute Pressure Sensor Circuit High Bank 2	P2E6A - Fuel Trim System Lean During Cylinder Deactivation Bank 2	P2E6B - Fuel Trim System Rich During Cylinder Deactivation Bank 2	P318A - Cylinder 2 Reactivation Performance - Trapped High Pressure Exhaust Charge	P318B - Cylinder 3 Reactivation Performance - Trapped High Pressure Exhaust Charge	P318D - Cylinder 5 Reactivation Performance - Trapped High Pressure Exhaust Charge	P3190 - Cylinder 8 Reactivation Performance - Trapped High Pressure Exhaust Charge	P3409 - Cylinder 2 Deactivation Solenoid Control Circuit Open	P3411 - Cylinder 2 Deactivation Solenoid Control Circuit Low	P3412 - Cylinder 2 Deactivation Solenoid Control Circuit High	CONTINUED NEXT LINE
	P3417 - Cylinder 3 Deactivation Solenoid Control Circuit Open	P3419 - Cylinder 3 Deactivation Solenoid Control Circuit Low	P3420 - Cylinder 3 Deactivation Solenoid Control Circuit High	P3433 - Cylinder 5 Deactivation Solenoid Control Circuit Open	P3435 - Cylinder 5 Deactivation Solenoid Control Circuit Low	P3436 - Cylinder 5 Deactivation Solenoid Control Circuit High	P3457 - Cylinder 8 Deactivation Solenoid Control Circuit Open	P3459 - Cylinder 8 Deactivation Solenoid Control Circuit Low	P3460 - Cylinder 8 Deactivation Solenoid Control Circuit High	P3499 - Cylinder 2 Deactivation Performance	P349A - Cylinder 3 Deactivation Performance	P349C - Cylinder 5 Deactivation Performance	P349F - Cylinder 8 Deactivation Performance	U0607 - Lost Communication With Throttle Position Sensor Bank 1 Sensor 2	U0688 - Lost Communication With Throttle Position Sensor Bank 2 Sensor 2	U136D - Invalid Data Received From Throttle Position Sensor 2	U136F - Invalid Data Received From Throttle Position Sensor Bank 2 Sensor 2	END					
P013D - Oxygen Sensor Slow Response - Lean to Rich Bank 2 Sensor 2	P000A - Camshaft Position System Slow Response Bank 1	P000B - Exhaust Camshaft Position System Slow Response Bank 1	P000C - Intake Camshaft Position System Slow Response Bank 2	P000D - Exhaust Camshaft Position System Slow Response Bank 2	P0010 - Camshaft Position Actuator Control Circuit Open	P0011 - Camshaft Position System Performance	P0013 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 1	P0014 - Exhaust Camshaft Position System Performance Bank 1	P0020 - Intake Camshaft Position Actuator Control Circuit Open Bank 2	P0021 - Intake Camshaft Position System Performance Bank 2	P0023 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 2	P0024 - Exhaust Camshaft Position System Performance Bank 2	P0050 - Oxygen Sensor Heater Control Circuit Open Bank 2 Sensor 1	P0051 - Oxygen Sensor Heater Control Circuit Low Bank 2 Sensor 1	P0052 - Oxygen Sensor Heater Control Circuit High Bank 2 Sensor 1	P0056 - Oxygen Sensor Heater Control Circuit Open Bank 2 Sensor 2	P0057 - Oxygen Sensor Heater Control Circuit Low Bank 2 Sensor 2	P0058 - Oxygen Sensor Heater Control Circuit High Bank 2 Sensor 2	P0101 - Mass Air Flow Sensor Performance	P0102 - Mass Air Flow Sensor Circuit Low	P0103 - Mass Air Flow Sensor Circuit High	P0106 - Manifold Absolute Pressure Sensor Performance	CONTINUED NEXT LINE
	P0107 - Manifold Absolute Pressure Sensor Circuit Low	P0108 - Manifold Absolute Pressure Sensor Circuit High	P010B - Mass Air Flow Sensor 2 Performance	P010C - Mass Air Flow Sensor 2 Circuit Low	P010D - Mass Air Flow Sensor 2 Circuit High	P0116 - Engine Coolant Temperature Sensor Performance	P0117 - Engine Coolant Temperature Sensor Circuit Low	P0118 - Engine Coolant Temperature Sensor Circuit High	P0119 - Engine Coolant Temperature Sensor Circuit Erratic	P0121 - Throttle Position Sensor Performance	P0122 - Throttle Position Sensor Circuit Low	P0123 - Throttle Position Sensor Circuit High	P0128 - Engine Coolant Temperature Below Thermostat Regulating Temperature	P013C - Oxygen Sensor Slow Response - Rich to Lean Bank 2 Sensor 2	P013D - Oxygen Sensor Slow Response - Lean to Rich Bank 2 Sensor 2	P014A - Oxygen Sensor Delayed Response - Rich to Lean Bank 2 Sensor 2	P014B - Oxygen Sensor Delayed Response - Lean to Rich Bank 2 Sensor 2	P0150 - HO2S Circuit Bank 2 Sensor 1	P0151 - Oxygen Sensor Circuit Low Bank 2 Sensor 1	P0152 - Oxygen Sensor Circuit High Bank 2 Sensor 1	P0153 - Oxygen Sensor Slow Response Bank 2 Sensor 1	P0157 - Oxygen Sensor Circuit Low Bank 2 Sensor 2	CONTINUED NEXT LINE
	P0158 - Oxygen Sensor Circuit High Bank 2 Sensor 2	P0160 - Oxygen Sensor Circuit Insufficient Activity Bank 2 Sensor 2	P0161 - Oxygen Sensor Heater Performance Bank 2 Sensor 2	P0174 - Fuel Trim System Lean Bank 2	P0175 - Fuel Trim System Rich Bank 2	P0221 - Throttle Position Sensor 2 Performance	P0222 - Throttle Position Sensor 2 Circuit Low	P0223 - Throttle Position Sensor 2 Circuit High	P0226 - Throttle Position Sensor Performance Bank 2	P0227 - Throttle Position Sensor Circuit Low Bank 2	P0228 - Throttle Position Sensor Circuit High Bank 2	P0300 - Engine Misfire Detected	P0301 - Cylinder 1 Misfire Detected	P0302 - Cylinder 2 Misfire Detected	P0303 - Cylinder 3 Misfire Detected	P0304 - Cylinder 4 Misfire Detected	P0305 - Cylinder 5 Misfire Detected	P0306 - Cylinder 6 Misfire Detected	P0307 - Cylinder 7 Misfire Detected	P0308 - Cylinder 8 Misfire Detected	P0443 - Evaporative Emission Purge Solenoid Control Circuit Open	P0458 - Evaporative Emission Purge Solenoid Control Circuit Low	CONTINUED NEXT LINE
	P0459 - Evaporative Emission Purge Solenoid Control Circuit High	P0496 - Evaporative Emission System Flow During Non-Purge	P0497 - Evaporative Emission System No Flow During Purge	P04AB - Evaporative Emission Purge Solenoid Control Circuit Open Bank 2	P04AC - Evaporative Emission Purge Solenoid Control Circuit Low Bank 2	P04AD - Evaporative Emission Purge Solenoid Control Circuit High Bank 2	P04AE - Evaporative Emission Purge Solenoid Performance Bank 2	P04DF - Evaporative Emission Purge Solenoid Performance Bank 1	P0641 - Sensor Reference Voltage 1 Circuit Open	P064E - Control Module Oxygen Sensor Bank 2 Sensor 1 System Performance	P0651 - Sensor Reference Voltage 2 Circuit Open	P0697 - Sensor Reference Voltage 3 Circuit Open	P06A3 - Sensor Reference Voltage 4 Circuit Open	P2088 - Camshaft Position Actuator Control Circuit Low	P2089 - Camshaft Position Actuator Control Circuit High	P2090 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 1	P2091 - Exhaust Camshaft Position Actuator Control Circuit High Bank 1	P2092 - Intake Camshaft Position Actuator Control Circuit Low Bank 2	P2093 - Intake Camshaft Position Actuator Control Circuit High Bank 2	P2094 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 2	P2095 - Exhaust Camshaft Position Actuator Control Circuit High Bank 2	P2098 - Post Catalyst Fuel Trim System Low Limit Bank 2	CONTINUED NEXT LINE
	P2099 - Post Catalyst Fuel Trim System High Limit Bank 2	P212B - Throttle Position Sensor 2 Performance Bank 2	P212C - Throttle Position Sensor 2 Circuit Low Bank 2	P212D - Throttle Position Sensor 2 Circuit High Bank 2	P2179 - Fuel Trim System Lean Off Idle Bank 2	P2180 - Fuel Trim System Rich Off Idle Bank 2	P2189 - Fuel Trim System Lean at Idle Bank 2	P2190 - Fuel Trim System Rich at Idle Bank 2	P2197 - Oxygen Sensor Signal Biased Lean Bank 2 Sensor 1	P2198 - Oxygen Sensor Signal Biased Rich Bank 2 Sensor 1	P2235 - Oxygen Sensor Signal Circuit Shorted to Heater Circuit Bank 2 Sensor 2	P2240 - Oxygen Sensor Pumping Current Control Circuit Open Bank 2 Sensor 1	P2254 - Oxygen Sensor Low Reference Circuit Open Bank 2 Sensor 1	P2272 - Oxygen Sensor Signal Stuck Lean Bank 2 Sensor 2	P2273 - Oxygen Sensor Signal Stuck Rich Bank 2 Sensor 2	P2298 - Oxygen Sensor Out of Range During Deceleration Bank 2 Sensor 1	P2629 - Oxygen Sensor Pumping Current Trim Circuit Open Bank 2 Sensor 1	P2A0B - Manifold Absolute Pressure Sensor Performance Bank 2	P2A0C - Manifold Absolute Pressure Sensor Circuit Low Bank 2	P2A0D - Manifold Absolute Pressure Sensor Circuit High Bank 2	P2E6A - Fuel Trim System Lean During Cylinder Deactivation Bank 2	P2E6B - Fuel Trim System Rich During Cylinder Deactivation Bank 2	CONTINUED NEXT LINE
	P30D9 - Control Module Processor Serial Peripheral Interface Bus 4	P318A - Cylinder 2 Reactivation Performance - Trapped High Pressure Exhaust Charge	P318B - Cylinder 3 Reactivation Performance - Trapped High Pressure Exhaust Charge	P318D - Cylinder 5 Reactivation Performance - Trapped High Pressure Exhaust Charge	P3190 - Cylinder 8 Reactivation Performance - Trapped High Pressure Exhaust Charge	P3409 - Cylinder 2 Deactivation Solenoid Control Circuit Open	P3411 - Cylinder 2 Deactivation Solenoid Control Circuit Low	P3412 - Cylinder 2 Deactivation Solenoid Control Circuit High	P3417 - Cylinder 3 Deactivation Solenoid Control Circuit Open	P3419 - Cylinder 3 Deactivation Solenoid Control Circuit Low	P3420 - Cylinder 3 Deactivation Solenoid Control Circuit High	P3433 - Cylinder 5 Deactivation Solenoid Control Circuit Open	P3435 - Cylinder 5 Deactivation Solenoid Control Circuit Low	P3436 - Cylinder 5 Deactivation Solenoid Control Circuit High	P3457 - Cylinder 8 Deactivation Solenoid Control Circuit Open	P3459 - Cylinder 8 Deactivation Solenoid Control Circuit Low	P3460 - Cylinder 8 Deactivation Solenoid Control Circuit High	P3499 - Cylinder 2 Deactivation Performance	P349A - Cylinder 3 Deactivation Performance	P349C - Cylinder 5 Deactivation Performance	P349F - Cylinder 8 Deactivation Performance	U0607 - Lost Communication With Throttle Position Sensor Bank 1 Sensor 2	CONTINUED NEXT LINE
	U0688 - Lost Communication With Throttle Position Sensor Bank 2 Sensor 2	U136D - Invalid Data Received From Throttle Position Sensor 2	U136F - Invalid Data Received From Throttle Position Sensor Bank 2 Sensor 2	END																			

19 OBDG07 ECM DTC Inhibit Tables

The DTCs in this column is inhibited by the DTCs listed to the right	The DTCs in these columns inhibit the DTC to the left						The DTCs in these columns inhibit the DTC to the left						The DTCs in these columns inhibit the DTC to the left						The DTCs in these columns inhibit the DTC to the left				
Inhibited DTC	Fault Active DTCs						Fault Active DTCs						Fault Active DTCs						Fault Active DTCs				
P013E - Oxygen Sensor Delayed Response - Rich to Lean Bank 1 Sensor 2	P000A - Camshaft Position System Slow Response Bank 1	P000B - Exhaust Camshaft Position System Slow Response Bank 1	P000C - Intake Camshaft Position System Slow Response Bank 2	P000D - Exhaust Camshaft Position System Slow Response Bank 2	P0010 - Camshaft Position Actuator Control Circuit Open	P0011 - Camshaft Position System Performance	P0013 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 1	P0014 - Exhaust Camshaft Position System Performance Bank 1	P0020 - Intake Camshaft Position Actuator Control Circuit Open Bank 2	P0021 - Intake Camshaft Position System Performance Bank 2	P0023 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 2	P0024 - Exhaust Camshaft Position System Performance Bank 2	P0030 - Oxygen Sensor Heater Control Circuit Open Bank 1 Sensor 1	P0031 - Oxygen Sensor Heater Control Circuit Low Bank 1 Sensor 1	P0032 - Oxygen Sensor Heater Control Circuit High Bank 1 Sensor 1	P0036 - Oxygen Sensor Heater Control Circuit Open Bank 1 Sensor 2	P0037 - Oxygen Sensor Heater Control Circuit Low Bank 1 Sensor 2	P0038 - Oxygen Sensor Heater Control Circuit High Bank 1 Sensor 2	P0101 - Mass Air Flow Sensor Performance	P0102 - Mass Air Flow Sensor Circuit Low	P0103 - Mass Air Flow Sensor Circuit High	P0106 - Manifold Absolute Pressure Sensor Performance	CONTINUED NEXT LINE
	P0107 - Manifold Absolute Pressure Sensor Circuit Low	P0108 - Manifold Absolute Pressure Sensor Circuit High	P010B - Mass Air Flow Sensor 2 Performance	P010C - Mass Air Flow Sensor 2 Circuit Low	P010D - Mass Air Flow Sensor 2 Circuit High	P0116 - Engine Coolant Temperature Sensor Performance	P0117 - Engine Coolant Temperature Sensor Circuit Low	P0118 - Engine Coolant Temperature Sensor Circuit High	P0119 - Engine Coolant Temperature Sensor Circuit Erratic	P0121 - Throttle Position Sensor Performance	P0122 - Throttle Position Sensor Circuit Low	P0123 - Throttle Position Sensor Circuit High	P0128 - Engine Coolant Temperature Below Thermostat Regulating Temperature	P0130 - HO2S Circuit Bank 1 Sensor 1	P0133 - Oxygen Sensor Slow Response Bank 1 Sensor 1	P0137 - Oxygen Sensor Circuit Low Bank 1 Sensor 2	P0138 - Oxygen Sensor Circuit High Bank 1 Sensor 2	P013A - Oxygen Sensor Slow Response - Rich to Lean Bank 1 Sensor 2	P013B - Oxygen Sensor Slow Response - Lean to Rich Bank 1 Sensor 2	P013E - Oxygen Sensor Delayed Response - Rich to Lean Bank 1 Sensor 2	P013F - Oxygen Sensor Delayed Response - Lean to Rich Bank 1 Sensor 2	P0140 - Oxygen Sensor Circuit Insufficient Activity Bank 1 Sensor 2	CONTINUED NEXT LINE
	P0141 - Oxygen Sensor Heater Performance Bank 1 Sensor 2	P0171 - Fuel Trim System Lean Bank 1	P0172 - Fuel Trim System Rich Bank 1	P0221 - Throttle Position Sensor 2 Performance	P0222 - Throttle Position Sensor 2 Circuit Low	P0223 - Throttle Position Sensor 2 Circuit High	P0226 - Throttle Position Sensor Performance Bank 2	P0227 - Throttle Position Sensor Circuit Low Bank 2	P0228 - Throttle Position Sensor Circuit High Bank 2	P0300 - Engine Misfire Detected	P0301 - Cylinder 1 Misfire Detected	P0302 - Cylinder 2 Misfire Detected	P0303 - Cylinder 3 Misfire Detected	P0304 - Cylinder 4 Misfire Detected	P0305 - Cylinder 5 Misfire Detected	P0306 - Cylinder 6 Misfire Detected	P0307 - Cylinder 7 Misfire Detected	P0308 - Cylinder 8 Misfire Detected	P0443 - Evaporative Emission Purge Solenoid Control Circuit Open	P0458 - Evaporative Emission Purge Solenoid Control Circuit Low	P0459 - Evaporative Emission Purge Solenoid Control Circuit High	P0496 - Evaporative Emission System Flow During Non-Purge	CONTINUED NEXT LINE
	P0497 - Evaporative Emission System No Flow During Purge	P04AB - Evaporative Emission Purge Solenoid Control Circuit Open Bank 2	P04AC - Evaporative Emission Purge Solenoid Control Circuit Low Bank 2	P04AD - Evaporative Emission Purge Solenoid Control Circuit High Bank 2	P04AE - Evaporative Emission Purge Solenoid Performance Bank 2	P04DF - Evaporative Emission Purge Solenoid Performance Bank 1	P0641 - Sensor Reference Voltage 1 Circuit Open	P0651 - Sensor Reference Voltage 2 Circuit Open	P0697 - Sensor Reference Voltage 3 Circuit Open	P06A3 - Sensor Reference Voltage 4 Circuit Open	P2088 - Camshaft Position Actuator Control Circuit Low	P2089 - Camshaft Position Actuator Control Circuit High	P2090 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 1	P2091 - Exhaust Camshaft Position Actuator Control Circuit High Bank 1	P2092 - Intake Camshaft Position Actuator Control Circuit Low Bank 2	P2093 - Intake Camshaft Position Actuator Control Circuit High Bank 2	P2094 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 2	P2095 - Exhaust Camshaft Position Actuator Control Circuit High Bank 2	P2096 - Post Catalyst Fuel Trim System Low Limit Bank 1	P2097 - Post Catalyst Fuel Trim System High Limit Bank 1	P212B - Throttle Position Sensor 2 Performance Bank 2	P212C - Throttle Position Sensor 2 Circuit Low Bank 2	CONTINUED NEXT LINE
	P212D - Throttle Position Sensor 2 Circuit High Bank 2	P2177 - Fuel Trim System Lean Off Idle Bank 1	P2178 - Fuel Trim System Rich Off Idle Bank 1	P2187 - Fuel Trim System Lean at Idle Bank 1	P2188 - Fuel Trim System Rich at Idle Bank 1	P2195 - Oxygen Sensor Signal Biased Lean Bank 1 Sensor 1	P2196 - Oxygen Sensor Signal Biased Rich Bank 1 Sensor 1	P2232 - Oxygen Sensor Signal Circuit Shorted to Heater Circuit Bank 1 Sensor 2	P2270 - Oxygen Sensor Signal Stuck Lean Bank 1 Sensor 2	P2271 - Oxygen Sensor Signal Stuck Rich Bank 1 Sensor 2	P2A0B - Manifold Absolute Pressure Sensor Performance Bank 2	P2A0C - Manifold Absolute Pressure Sensor Circuit Low Bank 2	P2A0D - Manifold Absolute Pressure Sensor Circuit High Bank 2	P2E68 - Fuel Trim System Lean During Cylinder Deactivation Bank 1	P2E69 - Fuel Trim System Rich During Cylinder Deactivation Bank 1	P318A - Cylinder 2 Reactivation Performance - Trapped High Pressure Exhaust Charge	P318B - Cylinder 3 Reactivation Performance - Trapped High Pressure Exhaust Charge	P318D - Cylinder 5 Reactivation Performance - Trapped High Pressure Exhaust Charge	P3190 - Cylinder 8 Reactivation Performance - Trapped High Pressure Exhaust Charge	P3409 - Cylinder 2 Deactivation Solenoid Control Circuit Open	P3411 - Cylinder 2 Deactivation Solenoid Control Circuit Low	P3412 - Cylinder 2 Deactivation Solenoid Control Circuit High	CONTINUED NEXT LINE
	P3417 - Cylinder 3 Deactivation Solenoid Control Circuit Open	P3419 - Cylinder 3 Deactivation Solenoid Control Circuit Low	P3420 - Cylinder 3 Deactivation Solenoid Control Circuit High	P3433 - Cylinder 5 Deactivation Solenoid Control Circuit Open	P3435 - Cylinder 5 Deactivation Solenoid Control Circuit Low	P3436 - Cylinder 5 Deactivation Solenoid Control Circuit High	P3457 - Cylinder 8 Deactivation Solenoid Control Circuit Open	P3459 - Cylinder 8 Deactivation Solenoid Control Circuit Low	P3460 - Cylinder 8 Deactivation Solenoid Control Circuit High	P3499 - Cylinder 2 Deactivation Performance	P349A - Cylinder 3 Deactivation Performance	P349C - Cylinder 5 Deactivation Performance	P349F - Cylinder 8 Deactivation Performance	U0607 - Lost Communication With Throttle Position Sensor Bank 1 Sensor 2	U0688 - Lost Communication With Throttle Position Sensor Bank 2 Sensor 2	U136D - Invalid Data Received From Throttle Position Sensor 2	U136F - Invalid Data Received From Throttle Position Sensor Bank 2 Sensor 2	END					
P013F - Oxygen Sensor Delayed Response - Lean to Rich Bank 1 Sensor 2	P000A - Camshaft Position System Slow Response Bank 1	P000B - Exhaust Camshaft Position System Slow Response Bank 1	P000C - Intake Camshaft Position System Slow Response Bank 2	P000D - Exhaust Camshaft Position System Slow Response Bank 2	P0010 - Camshaft Position Actuator Control Circuit Open	P0011 - Camshaft Position System Performance	P0013 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 1	P0014 - Exhaust Camshaft Position System Performance Bank 1	P0020 - Intake Camshaft Position Actuator Control Circuit Open Bank 2	P0021 - Intake Camshaft Position System Performance Bank 2	P0023 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 2	P0024 - Exhaust Camshaft Position System Performance Bank 2	P0030 - Oxygen Sensor Heater Control Circuit Open Bank 1 Sensor 1	P0031 - Oxygen Sensor Heater Control Circuit Low Bank 1 Sensor 1	P0032 - Oxygen Sensor Heater Control Circuit High Bank 1 Sensor 1	P0036 - Oxygen Sensor Heater Control Circuit Open Bank 1 Sensor 2	P0037 - Oxygen Sensor Heater Control Circuit Low Bank 1 Sensor 2	P0038 - Oxygen Sensor Heater Control Circuit High Bank 1 Sensor 2	P0101 - Mass Air Flow Sensor Performance	P0102 - Mass Air Flow Sensor Circuit Low	P0103 - Mass Air Flow Sensor Circuit High	P0106 - Manifold Absolute Pressure Sensor Performance	CONTINUED NEXT LINE
	P0107 - Manifold Absolute Pressure Sensor Circuit Low	P0108 - Manifold Absolute Pressure Sensor Circuit High	P010B - Mass Air Flow Sensor 2 Performance	P010C - Mass Air Flow Sensor 2 Circuit Low	P010D - Mass Air Flow Sensor 2 Circuit High	P0116 - Engine Coolant Temperature Sensor Performance	P0117 - Engine Coolant Temperature Sensor Circuit Low	P0118 - Engine Coolant Temperature Sensor Circuit High	P0119 - Engine Coolant Temperature Sensor Circuit Erratic	P0121 - Throttle Position Sensor Performance	P0122 - Throttle Position Sensor Circuit Low	P0123 - Throttle Position Sensor Circuit High	P0128 - Engine Coolant Temperature Below Thermostat Regulating Temperature	P0130 - HO2S Circuit Bank 1 Sensor 1	P0133 - Oxygen Sensor Slow Response Bank 1 Sensor 1	P0137 - Oxygen Sensor Circuit Low Bank 1 Sensor 2	P0138 - Oxygen Sensor Circuit High Bank 1 Sensor 2	P013A - Oxygen Sensor Slow Response - Rich to Lean Bank 1 Sensor 2	P013B - Oxygen Sensor Slow Response - Lean to Rich Bank 1 Sensor 2	P013E - Oxygen Sensor Delayed Response - Rich to Lean Bank 1 Sensor 2	P013F - Oxygen Sensor Delayed Response - Lean to Rich Bank 1 Sensor 2	P0140 - Oxygen Sensor Circuit Insufficient Activity Bank 1 Sensor 2	CONTINUED NEXT LINE
	P0141 - Oxygen Sensor Heater Performance Bank 1 Sensor 2	P0171 - Fuel Trim System Lean Bank 1	P0172 - Fuel Trim System Rich Bank 1	P0221 - Throttle Position Sensor 2 Performance	P0222 - Throttle Position Sensor 2 Circuit Low	P0223 - Throttle Position Sensor 2 Circuit High	P0226 - Throttle Position Sensor Performance Bank 2	P0227 - Throttle Position Sensor Circuit Low Bank 2	P0228 - Throttle Position Sensor Circuit High Bank 2	P0300 - Engine Misfire Detected	P0301 - Cylinder 1 Misfire Detected	P0302 - Cylinder 2 Misfire Detected	P0303 - Cylinder 3 Misfire Detected	P0304 - Cylinder 4 Misfire Detected	P0305 - Cylinder 5 Misfire Detected	P0306 - Cylinder 6 Misfire Detected	P0307 - Cylinder 7 Misfire Detected	P0308 - Cylinder 8 Misfire Detected	P0443 - Evaporative Emission Purge Solenoid Control Circuit Open	P0458 - Evaporative Emission Purge Solenoid Control Circuit Low	P0459 - Evaporative Emission Purge Solenoid Control Circuit High	P0496 - Evaporative Emission System Flow During Non-Purge	CONTINUED NEXT LINE
	P0497 - Evaporative Emission System No Flow During Purge	P04AB - Evaporative Emission Purge Solenoid Control Circuit Open Bank 2	P04AC - Evaporative Emission Purge Solenoid Control Circuit Low Bank 2	P04AD - Evaporative Emission Purge Solenoid Control Circuit High Bank 2	P04AE - Evaporative Emission Purge Solenoid Performance Bank 2	P04DF - Evaporative Emission Purge Solenoid Performance Bank 1	P0641 - Sensor Reference Voltage 1 Circuit Open	P0651 - Sensor Reference Voltage 2 Circuit Open	P0697 - Sensor Reference Voltage 3 Circuit Open	P06A3 - Sensor Reference Voltage 4 Circuit Open	P2088 - Camshaft Position Actuator Control Circuit Low	P2089 - Camshaft Position Actuator Control Circuit High	P2090 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 1	P2091 - Exhaust Camshaft Position Actuator Control Circuit High Bank 1	P2092 - Intake Camshaft Position Actuator Control Circuit Low Bank 2	P2093 - Intake Camshaft Position Actuator Control Circuit High Bank 2	P2094 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 2	P2095 - Exhaust Camshaft Position Actuator Control Circuit High Bank 2	P2096 - Post Catalyst Fuel Trim System Low Limit Bank 1	P2097 - Post Catalyst Fuel Trim System High Limit Bank 1	P212B - Throttle Position Sensor 2 Performance Bank 2	P212C - Throttle Position Sensor 2 Circuit Low Bank 2	CONTINUED NEXT LINE
	P212D - Throttle Position Sensor 2 Circuit High Bank 2	P2177 - Fuel Trim System Lean Off Idle Bank 1	P2178 - Fuel Trim System Rich Off Idle Bank 1	P2187 - Fuel Trim System Lean at Idle Bank 1	P2188 - Fuel Trim System Rich at Idle Bank 1	P2195 - Oxygen Sensor Signal Biased Lean Bank 1 Sensor 1	P2196 - Oxygen Sensor Signal Biased Rich Bank 1 Sensor 1	P2232 - Oxygen Sensor Signal Circuit Shorted to Heater Circuit Bank 1 Sensor 2	P2270 - Oxygen Sensor Signal Stuck Lean Bank 1 Sensor 2	P2271 - Oxygen Sensor Signal Stuck Rich Bank 1 Sensor 2	P2A0B - Manifold Absolute Pressure Sensor Performance Bank 2	P2A0C - Manifold Absolute Pressure Sensor Circuit Low Bank 2	P2A0D - Manifold Absolute Pressure Sensor Circuit High Bank 2	P2E68 - Fuel Trim System Lean During Cylinder Deactivation Bank 1	P2E69 - Fuel Trim System Rich During Cylinder Deactivation Bank 1	P318A - Cylinder 2 Reactivation Performance - Trapped High Pressure Exhaust Charge	P318B - Cylinder 3 Reactivation Performance - Trapped High Pressure Exhaust Charge	P318D - Cylinder 5 Reactivation Performance - Trapped High Pressure Exhaust Charge	P3190 - Cylinder 8 Reactivation Performance - Trapped High Pressure Exhaust Charge	P3409 - Cylinder 2 Deactivation Solenoid Control Circuit Open	P3411 - Cylinder 2 Deactivation Solenoid Control Circuit Low	P3412 - Cylinder 2 Deactivation Solenoid Control Circuit High	CONTINUED NEXT LINE
	P3417 - Cylinder 3 Deactivation Solenoid Control Circuit Open	P3419 - Cylinder 3 Deactivation Solenoid Control Circuit Low	P3420 - Cylinder 3 Deactivation Solenoid Control Circuit High	P3433 - Cylinder 5 Deactivation Solenoid Control Circuit Open	P3435 - Cylinder 5 Deactivation Solenoid Control Circuit Low	P3436 - Cylinder 5 Deactivation Solenoid Control Circuit High	P3457 - Cylinder 8 Deactivation Solenoid Control Circuit Open	P3459 - Cylinder 8 Deactivation Solenoid Control Circuit Low	P3460 - Cylinder 8 Deactivation Solenoid Control Circuit High	P3499 - Cylinder 2 Deactivation Performance	P349A - Cylinder 3 Deactivation Performance	P349C - Cylinder 5 Deactivation Performance	P349F - Cylinder 8 Deactivation Performance	U0607 - Lost Communication With Throttle Position Sensor Bank 1 Sensor 2	U0688 - Lost Communication With Throttle Position Sensor Bank 2 Sensor 2	U136D - Invalid Data Received From Throttle Position Sensor 2	U136F - Invalid Data Received From Throttle Position Sensor Bank 2 Sensor 2	END					
P0140 - Oxygen Sensor Circuit Insufficient Activity Bank 1 Sensor 2	P0036 - Oxygen Sensor Heater Control Circuit Open Bank 1 Sensor 2	P0037 - Oxygen Sensor Heater Control Circuit Low Bank 1 Sensor 2	P0038 - Oxygen Sensor Heater Control Circuit High Bank 1 Sensor 2	END																			
P0141 - Oxygen Sensor Heater Performance Bank 1 Sensor 2	P0036 - Oxygen Sensor Heater Control Circuit Open Bank 1 Sensor 2	P0037 - Oxygen Sensor Heater Control Circuit Low Bank 1 Sensor 2	P0038 - Oxygen Sensor Heater Control Circuit High Bank 1 Sensor 2	END																			
P014A - Oxygen Sensor Delayed Response - Rich to Lean Bank 2 Sensor 2	P000A - Camshaft Position System Slow Response Bank 1	P000B - Exhaust Camshaft Position System Slow Response Bank 1	P000C - Intake Camshaft Position System Slow Response Bank 2	P000D - Exhaust Camshaft Position System Slow Response Bank 2	P0010 - Camshaft Position Actuator Control Circuit Open	P0011 - Camshaft Position System Performance	P0013 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 1	P0014 - Exhaust Camshaft Position System Performance Bank 1	P0020 - Intake Camshaft Position Actuator Control Circuit Open Bank 2	P0021 - Intake Camshaft Position System Performance Bank 2	P0023 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 2	P0024 - Exhaust Camshaft Position System Performance Bank 2	P0050 - Oxygen Sensor Heater Control Circuit Open Bank 2 Sensor 1	P0051 - Oxygen Sensor Heater Control Circuit Low Bank 2 Sensor 1	P0052 - Oxygen Sensor Heater Control Circuit High Bank 2 Sensor 1	P0056 - Oxygen Sensor Heater Control Circuit Open Bank 2 Sensor 2	P0057 - Oxygen Sensor Heater Control Circuit Low Bank 2 Sensor 2	P0058 - Oxygen Sensor Heater Control Circuit High Bank 2 Sensor 2	P0101 - Mass Air Flow Sensor Performance	P0102 - Mass Air Flow Sensor Circuit Low	P0103 - Mass Air Flow Sensor Circuit High	P0106 - Manifold Absolute Pressure Sensor Performance	CONTINUED NEXT LINE
	P0107 - Manifold Absolute Pressure Sensor Circuit Low	P0108 - Manifold Absolute Pressure Sensor Circuit High	P010B - Mass Air Flow Sensor 2 Performance	P010C - Mass Air Flow Sensor 2 Circuit Low	P010D - Mass Air Flow Sensor 2 Circuit High	P0116 - Engine Coolant Temperature Sensor Performance	P0117 - Engine Coolant Temperature Sensor Circuit Low	P0118 - Engine Coolant Temperature Sensor Circuit High	P0119 - Engine Coolant Temperature Sensor Circuit Erratic	P0121 - Throttle Position Sensor Performance	P0122 - Throttle Position Sensor Circuit Low	P0123 - Throttle Position Sensor Circuit High	P0128 - Engine Coolant Temperature Below Thermostat Regulating Temperature	P013C - Oxygen Sensor Slow Response - Rich to Lean Bank 2 Sensor 2	P013D - Oxygen Sensor Slow Response - Lean to Rich Bank 2 Sensor 2	P014A - Oxygen Sensor Delayed Response - Rich to Lean Bank 2 Sensor 2	P014B - Oxygen Sensor Delayed Response - Lean to Rich Bank 2 Sensor 2	P0150 - HO2S Circuit Bank 2 Sensor 1	P0153 - Oxygen Sensor Slow Response Bank 2 Sensor 1	P0157 - Oxygen Sensor Circuit Low Bank 2 Sensor 2	P0158 - Oxygen Sensor Circuit High Bank 2 Sensor 2	P0160 - Oxygen Sensor Circuit Insufficient Activity Bank 2 Sensor 2	CONTINUED NEXT LINE
	P0161 - Oxygen Sensor Heater Performance Bank 2 Sensor 2	P0174 - Fuel Trim System Lean Bank 2	P0175 - Fuel Trim System Rich Bank 2	P0221 - Throttle Position Sensor 2 Performance	P0222 - Throttle Position Sensor 2 Circuit Low	P0223 - Throttle Position Sensor 2 Circuit High	P0226 - Throttle Position Sensor Performance Bank 2	P0227 - Throttle Position Sensor Circuit Low Bank 2	P0228 - Throttle Position Sensor Circuit High Bank 2	P0300 - Engine Misfire Detected	P0301 - Cylinder 1 Misfire Detected	P0302 - Cylinder 2 Misfire Detected	P0303 - Cylinder 3 Misfire Detected	P0304 - Cylinder 4 Misfire Detected	P0305 - Cylinder 5 Misfire Detected	P0306 - Cylinder 6 Misfire Detected	P0307 - Cylinder 7 Misfire Detected	P0308 - Cylinder 8 Misfire Detected	P0443 - Evaporative Emission Purge Solenoid Control Circuit Open	P0458 - Evaporative Emission Purge Solenoid Control Circuit Low	P0459 - Evaporative Emission Purge Solenoid Control Circuit High	P0496 - Evaporative Emission System Flow During Non-Purge	CONTINUED NEXT LINE
	P0497 - Evaporative Emission System No Flow During Purge	P04AB - Evaporative Emission Purge Solenoid Control Circuit Open Bank 2	P04AC - Evaporative Emission Purge Solenoid Control Circuit Low Bank 2	P04AD - Evaporative Emission Purge Solenoid Control Circuit High Bank 2	P04AE - Evaporative Emission Purge Solenoid Performance Bank 2	P04DF - Evaporative Emission Purge Solenoid Performance Bank 1	P0641 - Sensor Reference Voltage 1 Circuit Open	P0651 - Sensor Reference Voltage 2 Circuit Open	P0697 - Sensor Reference Voltage 3 Circuit Open	P06A3 - Sensor Reference Voltage 4 Circuit Open	P2088 - Camshaft Position Actuator Control Circuit Low	P2089 - Camshaft Position Actuator Control Circuit High	P2090 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 1	P2091 - Exhaust Camshaft Position Actuator Control Circuit High Bank 1	P2092 - Intake Camshaft Position Actuator Control Circuit Low Bank 2	P2093 - Intake Camshaft Position Actuator Control Circuit High Bank 2	P2094 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 2	P2095 - Exhaust Camshaft Position Actuator Control Circuit High Bank 2	P2098 - Post Catalyst Fuel Trim System Low Limit Bank 2	P2099 - Post Catalyst Fuel Trim System High Limit Bank 2	P212B - Throttle Position Sensor 2 Performance Bank 2	P212C - Throttle Position Sensor 2 Circuit Low Bank 2	CONTINUED NEXT LINE
	P212D - Throttle Position Sensor 2 Circuit High Bank 2	P2179 - Fuel Trim System Lean Off Idle Bank 2	P2180 - Fuel Trim System Rich Off Idle Bank 2	P2189 - Fuel Trim System Lean at Idle Bank 2	P2190 - Fuel Trim System Rich at Idle Bank 2	P2197 - Oxygen Sensor Signal Biased Lean Bank 2 Sensor 1	P2198 - Oxygen Sensor Signal Biased Rich Bank 2 Sensor 1	P2235 - Oxygen Sensor Signal Circuit Shorted to Heater Circuit Bank 2 Sensor 2	P2272 - Oxygen Sensor Signal Stuck Lean Bank 2 Sensor 2	P2273 - Oxygen Sensor Signal Stuck Rich Bank 2 Sensor 2	P2A0B - Manifold Absolute Pressure Sensor Performance Bank 2	P2A0C - Manifold Absolute Pressure Sensor Circuit Low Bank 2	P2A0D - Manifold Absolute Pressure Sensor Circuit High Bank 2	P2E6A - Fuel Trim System Lean During Cylinder Deactivation Bank 2	P2E6B - Fuel Trim System Rich During Cylinder Deactivation Bank 2	P318A - Cylinder 2 Reactivation Performance - Trapped High Pressure Exhaust Charge	P318B - Cylinder 3 Reactivation Performance - Trapped High Pressure Exhaust Charge	P318D - Cylinder 5 Reactivation Performance - Trapped High Pressure Exhaust Charge	P3190 - Cylinder 8 Reactivation Performance - Trapped High Pressure Exhaust Charge	P3409 - Cylinder 2 Deactivation Solenoid Control Circuit Open	P3411 - Cylinder 2 Deactivation Solenoid Control Circuit Low	P3412 - Cylinder 2 Deactivation Solenoid Control Circuit High	CONTINUED NEXT LINE
	P3417 - Cylinder 3 Deactivation Solenoid Control Circuit Open	P3419 - Cylinder 3 Deactivation Solenoid Control Circuit Low	P3420 - Cylinder 3 Deactivation Solenoid Control Circuit High	P3433 - Cylinder 5 Deactivation Solenoid Control Circuit Open	P3435 - Cylinder 5 Deactivation Solenoid Control Circuit Low	P3436 - Cylinder 5 Deactivation Solenoid Control Circuit High	P3457 - Cylinder 8 Deactivation Solenoid Control Circuit Open	P3459 - Cylinder 8 Deactivation Solenoid Control Circuit Low	P3460 - Cylinder 8 Deactivation Solenoid Control Circuit High	P3499 - Cylinder 2 Deactivation Performance	P349A - Cylinder 3 Deactivation Performance	P349C - Cylinder 5 Deactivation Performance	P349F - Cylinder 8 Deactivation Performance	U0607 - Lost Communication With Throttle Position Sensor Bank 1 Sensor 2	U0688 - Lost Communication With Throttle Position Sensor Bank 2 Sensor 2	U136D - Invalid Data Received From Throttle Position Sensor 2	U136F - Invalid Data Received From Throttle Position Sensor Bank 2 Sensor 2	END					
P014B - Oxygen Sensor Delayed Response - Lean to Rich Bank 2 Sensor 2	P000A - Camshaft Position System Slow Response Bank 1	P000B - Exhaust Camshaft Position System Slow Response Bank 1	P000C - Intake Camshaft Position System Slow Response Bank 2	P000D - Exhaust Camshaft Position System Slow Response Bank 2	P0010 - Camshaft Position Actuator Control Circuit Open	P0011 - Camshaft Position System Performance	P0013 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 1	P0014 - Exhaust Camshaft Position System Performance Bank 1	P0020 - Intake Camshaft Position Actuator Control Circuit Open Bank 2	P0021 - Intake Camshaft Position System Performance Bank 2	P0023 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 2	P0024 - Exhaust Camshaft Position System Performance Bank 2	P0050 - Oxygen Sensor Heater Control Circuit Open Bank 2 Sensor 1	P0051 - Oxygen Sensor Heater Control Circuit Low Bank 2 Sensor 1	P0052 - Oxygen Sensor Heater Control Circuit High Bank 2 Sensor 1	P0056 - Oxygen Sensor Heater Control Circuit Open Bank 2 Sensor 2	P0057 - Oxygen Sensor Heater Control Circuit Low Bank 2 Sensor 2	P0058 - Oxygen Sensor Heater Control Circuit High Bank 2 Sensor 2	P0101 - Mass Air Flow Sensor Performance	P0102 - Mass Air Flow Sensor Circuit Low	P0103 - Mass Air Flow Sensor Circuit High	P0106 - Manifold Absolute Pressure Sensor Performance	CONTINUED NEXT LINE
	P0107 - Manifold Absolute Pressure Sensor Circuit Low	P0108 - Manifold Absolute Pressure Sensor Circuit High	P010B - Mass Air Flow Sensor 2 Performance	P010C - Mass Air Flow Sensor 2 Circuit Low	P010D - Mass Air Flow Sensor 2 Circuit High	P0116 - Engine Coolant Temperature Sensor Performance	P0117 - Engine Coolant Temperature Sensor Circuit Low	P0118 - Engine Coolant Temperature Sensor Circuit High	P0119 - Engine Coolant Temperature Sensor Circuit Erratic	P0121 - Throttle Position Sensor Performance	P0122 - Throttle Position Sensor Circuit Low	P0123 - Throttle Position Sensor Circuit High	P0128 - Engine Coolant Temperature Below Thermostat Regulating Temperature	P013C - Oxygen Sensor Slow Response - Rich to Lean Bank 2 Sensor 2	P013D - Oxygen Sensor Slow Response - Lean to Rich Bank 2 Sensor 2	P014A - Oxygen Sensor Delayed Response - Rich to Lean Bank 2 Sensor 2	P014B - Oxygen Sensor Delayed Response - Lean to Rich Bank 2 Sensor 2	P0150 - HO2S Circuit Bank 2 Sensor 1	P0153 - Oxygen Sensor Slow Response Bank 2 Sensor 1	P0157 - Oxygen Sensor Circuit Low Bank 2 Sensor 2	P0158 - Oxygen Sensor Circuit High Bank 2 Sensor 2	P0160 - Oxygen Sensor Circuit Insufficient Activity Bank 2 Sensor 2	CONTINUED NEXT LINE
	P0161 - Oxygen Sensor Heater Performance Bank 2 Sensor 2	P0174 - Fuel Trim System Lean Bank 2	P0175 - Fuel Trim System Rich Bank 2	P0221 - Throttle Position Sensor 2 Performance	P0222 - Throttle Position Sensor 2 Circuit Low	P0223 - Throttle Position Sensor 2 Circuit High	P0226 - Throttle Position Sensor Performance Bank 2	P0227 - Throttle Position Sensor Circuit Low Bank 2	P0228 - Throttle Position Sensor Circuit High Bank 2	P0300 - Engine Misfire Detected	P0301 - Cylinder 1 Misfire Detected	P0302 - Cylinder 2 Misfire Detected	P0303 - Cylinder 3 Misfire Detected	P0304 - Cylinder 4 Misfire Detected	P0305 - Cylinder 5 Misfire Detected	P0306 - Cylinder 6 Misfire Detected	P0307 - Cylinder 7 Misfire Detected	P0308 - Cylinder 8 Misfire Detected	P0443 - Evaporative Emission Purge Solenoid Control Circuit Open	P0458 - Evaporative Emission Purge Solenoid Control Circuit Low	P0459 - Evaporative Emission Purge Solenoid Control Circuit High	P0496 - Evaporative Emission System Flow During Non-Purge	CONTINUED NEXT LINE
	P0497 - Evaporative Emission System No Flow During Purge	P04AB - Evaporative Emission Purge Solenoid Control Circuit Open Bank 2	P04AC - Evaporative Emission Purge Solenoid Control Circuit Low Bank 2	P04AD - Evaporative Emission Purge Solenoid Control Circuit High Bank 2	P04AE - Evaporative Emission Purge Solenoid Performance Bank 2	P04DF - Evaporative Emission Purge Solenoid Performance Bank 1	P0641 - Sensor Reference Voltage 1 Circuit Open	P0651 - Sensor Reference Voltage 2 Circuit Open	P0697 - Sensor Reference Voltage 3 Circuit Open	P06A3 - Sensor Reference Voltage 4 Circuit Open	P2088 - Camshaft Position Actuator Control Circuit Low	P2089 - Camshaft Position Actuator Control Circuit High	P2090 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 1	P2091 - Exhaust Camshaft Position Actuator Control Circuit High Bank 1	P2092 - Intake Camshaft Position Actuator Control Circuit Low Bank 2	P2093 - Intake Camshaft Position Actuator Control Circuit High Bank 2	P2094 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 2	P2095 - Exhaust Camshaft Position Actuator Control Circuit High Bank 2	P2098 - Post Catalyst Fuel Trim System Low Limit Bank 2	P2099 - Post Catalyst Fuel Trim System High Limit Bank 2	P212B - Throttle Position Sensor 2 Performance Bank 2	P212C - Throttle Position Sensor 2 Circuit Low Bank 2	CONTINUED NEXT LINE
	P212D - Throttle Position Sensor 2 Circuit High Bank 2	P2179 - Fuel Trim System Lean Off Idle Bank 2	P2180 - Fuel Trim System Rich Off Idle Bank 2	P2189 - Fuel Trim System Lean at Idle Bank 2	P2190 - Fuel Trim System Rich at Idle Bank 2	P2197 - Oxygen Sensor Signal Biased Lean Bank 2 Sensor 1	P2198 - Oxygen Sensor Signal Biased Rich Bank 2 Sensor 1	P2235 - Oxygen Sensor Signal Circuit Shorted to Heater Circuit Bank 2 Sensor 2	P2272 - Oxygen Sensor Signal Stuck Lean Bank 2 Sensor 2	P2273 - Oxygen Sensor Signal Stuck Rich Bank 2 Sensor 2	P2A0B - Manifold Absolute Pressure Sensor Performance Bank 2	P2A0C - Manifold Absolute Pressure Sensor Circuit Low Bank 2	P2A0D - Manifold Absolute Pressure Sensor Circuit High Bank 2	P2E6A - Fuel Trim System Lean During Cylinder Deactivation Bank 2	P2E6B - Fuel Trim System Rich During Cylinder Deactivation Bank 2	P318A - Cylinder 2 Reactivation Performance - Trapped High Pressure Exhaust Charge	P318B - Cylinder 3 Reactivation Performance - Trapped High Pressure Exhaust Charge	P318D - Cylinder 5 Reactivation Performance - Trapped High Pressure Exhaust Charge	P3190 - Cylinder 8 Reactivation Performance - Trapped High Pressure Exhaust Charge	P3409 - Cylinder 2 Deactivation Solenoid Control Circuit Open	P3411 - Cylinder 2 Deactivation Solenoid Control Circuit Low	P3412 - Cylinder 2 Deactivation Solenoid Control Circuit High	CONTINUED NEXT LINE
	P3417 - Cylinder 3 Deactivation Solenoid Control Circuit Open	P3419 - Cylinder 3 Deactivation Solenoid Control Circuit Low	P3420 - Cylinder 3 Deactivation Solenoid Control Circuit High	P3433 - Cylinder 5 Deactivation Solenoid Control Circuit Open	P3435 - Cylinder 5 Deactivation Solenoid Control Circuit Low	P3436 - Cylinder 5 Deactivation Solenoid Control Circuit High	P3457 - Cylinder 8 Deactivation Solenoid Control Circuit Open	P3459 - Cylinder 8 Deactivation Solenoid Control Circuit Low	P3460 - Cylinder 8 Deactivation Solenoid Control Circuit High	P3499 - Cylinder 2 Deactivation Performance	P349A - Cylinder 3 Deactivation Performance	P349C - Cylinder 5 Deactivation Performance	P349F - Cylinder 8 Deactivation Performance	U0607 - Lost Communication With Throttle Position Sensor Bank 1 Sensor 2	U0688 - Lost Communication With Throttle Position Sensor Bank 2 Sensor 2	U136D - Invalid Data Received From Throttle Position Sensor 2	U136F - Invalid Data Received From Throttle Position Sensor Bank 2 Sensor 2	END					
P0150 - HO2S Circuit Bank 2 Sensor 1	P0050 - Oxygen Sensor Heater Control Circuit Open Bank 2 Sensor 1	P0051 - Oxygen Sensor Heater Control Circuit Low Bank 2 Sensor 1	P0052 - Oxygen Sensor Heater Control Circuit High Bank 2 Sensor 1	P0150 - HO2S Circuit Bank 2 Sensor 1	P0151 - Oxygen Sensor Circuit Low Bank 2 Sensor 1	P0152 - Oxygen Sensor Circuit High Bank 2 Sensor 1	P0300 - Engine Misfire Detected	P0301 - Cylinder 1 Misfire Detected	P0302 - Cylinder 2 Misfire Detected	P0303 - Cylinder 3 Misfire Detected	P0304 - Cylinder 4 Misfire Detected	P0305 - Cylinder 5 Misfire Detected	P0306 - Cylinder 6 Misfire Detected	P0307 - Cylinder 7 Misfire Detected	P0308 - Cylinder 8 Misfire Detected	P064E - Control Module Oxygen Sensor Bank 2 Sensor 1 System Performance	P2240 - Oxygen Sensor Pumping Current Control Circuit Open Bank 2 Sensor 1	P2254 - Oxygen Sensor Low Reference Circuit Open Bank 2 Sensor 1	P2629 - Oxygen Sensor Pumping Current Trim Circuit Open Bank 2 Sensor 1	P30D9 - Control Module Processor Serial Peripheral Interface Bus 4	END		
P0151 - Oxygen Sensor Circuit Low Bank 2 Sensor 1	P0050 - Oxygen Sensor Heater Control Circuit Open Bank 2 Sensor 1	P0051 - Oxygen Sensor Heater Control Circuit Low Bank 2 Sensor 1	P0052 - Oxygen Sensor Heater Control Circuit High Bank 2 Sensor 1	P0150 - HO2S Circuit Bank 2 Sensor 1	P0151 - Oxygen Sensor Circuit Low Bank 2 Sensor 1	P0152 - Oxygen Sensor Circuit High Bank 2 Sensor 1	P064E - Control Module Oxygen Sensor Bank 2 Sensor 1 System Performance	P2240 - Oxygen Sensor Pumping Current Control Circuit Open Bank 2 Sensor 1	P2254 - Oxygen Sensor Low Reference Circuit Open Bank 2 Sensor 1	P2629 - Oxygen Sensor Pumping Current Trim Circuit Open Bank 2 Sensor 1	P30D9 - Control Module Processor Serial Peripheral Interface Bus 4	END											
P0152 - Oxygen Sensor Circuit High Bank 2 Sensor 1	P0050 - Oxygen Sensor Heater Control Circuit Open Bank 2 Sensor 1	P0051 - Oxygen Sensor Heater Control Circuit Low Bank 2 Sensor 1	P0052 - Oxygen Sensor Heater Control Circuit High Bank 2 Sensor 1	P0150 - HO2S Circuit Bank 2 Sensor 1	P0151 - Oxygen Sensor Circuit Low Bank 2 Sensor 1	P0152 - Oxygen Sensor Circuit High Bank 2 Sensor 1	P064E - Control Module Oxygen Sensor Bank 2 Sensor 1 System Performance	P2240 - Oxygen Sensor Pumping Current Control Circuit Open Bank 2 Sensor 1	P2254 - Oxygen Sensor Low Reference Circuit Open Bank 2 Sensor 1	P2629 - Oxygen Sensor Pumping Current Trim Circuit Open Bank 2 Sensor 1	P30D9 - Control Module Processor Serial Peripheral Interface Bus 4	END											
P0153 - Oxygen Sensor Slow Response Bank 2 Sensor 1	P000A - Camshaft Position System Slow Response Bank 1	P000B - Exhaust Camshaft Position System Slow Response Bank 1	P000C - Intake Camshaft Position System Slow Response Bank 2	P000D - Exhaust Camshaft Position System Slow Response Bank 2	P0010 - Camshaft Position Actuator Control Circuit Open	P0011 - Camshaft Position System Performance	P0013 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 1	P0014 - Exhaust Camshaft Position System Performance Bank 1	P0020 - Intake Camshaft Position Actuator Control Circuit Open Bank 2	P0021 - Intake Camshaft Position System Performance Bank 2	P0023 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 2	P0024 - Exhaust Camshaft Position System Performance Bank 2	P0050 - Oxygen Sensor Heater Control Circuit Open Bank 2 Sensor 1	P0051 - Oxygen Sensor Heater Control Circuit Low Bank 2 Sensor 1	P0052 - Oxygen Sensor Heater Control Circuit High Bank 2 Sensor 1	P0056 - Oxygen Sensor Heater Control Circuit Open Bank 2 Sensor 2	P0057 - Oxygen Sensor Heater Control Circuit Low Bank 2 Sensor 2	P0058 - Oxygen Sensor Heater Control Circuit High Bank 2 Sensor 2	P0101 - Mass Air Flow Sensor Performance	P0102 - Mass Air Flow Sensor Circuit Low	P0103 - Mass Air Flow Sensor Circuit High	P0106 - Manifold Absolute Pressure Sensor Performance	CONTINUED NEXT LINE
	P0107 - Manifold Absolute Pressure Sensor Circuit Low	P0108 - Manifold Absolute Pressure Sensor Circuit High	P010B - Mass Air Flow Sensor 2 Performance	P010C - Mass Air Flow Sensor 2 Circuit Low	P010D - Mass Air Flow Sensor 2 Circuit High	P0116 - Engine Coolant Temperature Sensor Performance	P0117 - Engine Coolant Temperature Sensor Circuit Low	P0118 - Engine Coolant Temperature Sensor Circuit High	P0119 - Engine Coolant Temperature Sensor Circuit Erratic	P0121 - Throttle Position Sensor Performance	P0122 - Throttle Position Sensor Circuit Low	P0123 - Throttle Position Sensor Circuit High	P0128 - Engine Coolant Temperature Below Thermostat Regulating Temperature	P013C - Oxygen Sensor Slow Response - Rich to Lean Bank 2 Sensor 2	P013D - Oxygen Sensor Slow Response - Lean to Rich Bank 2 Sensor 2	P014A - Oxygen Sensor Delayed Response - Rich to Lean Bank 2 Sensor 2	P014B - Oxygen Sensor Delayed Response - Lean to Rich Bank 2 Sensor 2	P0150 - HO2S Circuit Bank 2 Sensor 1	P0151 - Oxygen Sensor Circuit Low Bank 2 Sensor 1	P0152 - Oxygen Sensor Circuit High Bank 2 Sensor 1	P0153 - Oxygen Sensor Slow Response Bank 2 Sensor 1	P0157 - Oxygen Sensor Circuit Low Bank 2 Sensor 2	CONTINUED NEXT LINE
	P0158 - Oxygen Sensor Circuit High Bank 2 Sensor 2	P0160 - Oxygen Sensor Circuit Insufficient Activity Bank 2 Sensor 2	P0161 - Oxygen Sensor Heater Performance Bank 2 Sensor 2	P0174 - Fuel Trim System Lean Bank 2	P0175 - Fuel Trim System Rich Bank 2	P0221 - Throttle Position Sensor 2 Performance	P0222 - Throttle Position Sensor 2 Circuit Low	P0223 - Throttle Position Sensor 2 Circuit High	P0226 - Throttle Position Sensor Performance Bank 2	P0227 - Throttle Position Sensor Circuit Low Bank 2	P0228 - Throttle Position Sensor Circuit High Bank 2	P0300 - Engine Misfire Detected	P0301 - Cylinder 1 Misfire Detected	P0302 - Cylinder 2 Misfire Detected	P0303 - Cylinder 3 Misfire Detected	P0304 - Cylinder 4 Misfire Detected	P0305 - Cylinder 5 Misfire Detected	P0306 - Cylinder 6 Misfire Detected	P0307 - Cylinder 7 Misfire Detected	P0308 - Cylinder 8 Misfire Detected	P0443 - Evaporative Emission Purge Solenoid Control Circuit Open	P0458 - Evaporative Emission Purge Solenoid Control Circuit Low	CONTINUED NEXT LINE
	P0459 - Evaporative Emission Purge Solenoid Control Circuit High	P0496 - Evaporative Emission System Flow During Non-Purge	P0497 - Evaporative Emission System No Flow During Purge	P04AB - Evaporative Emission Purge Solenoid Control Circuit Open Bank 2	P04AC - Evaporative Emission Purge Solenoid Control Circuit Low Bank 2	P04AD - Evaporative Emission Purge Solenoid Control Circuit High Bank 2	P04AE - Evaporative Emission Purge Solenoid Performance Bank 2	P04DF - Evaporative Emission Purge Solenoid Performance Bank 1	P0641 - Sensor Reference Voltage 1 Circuit Open	P064E - Control Module Oxygen Sensor Bank 2 Sensor 1 System Performance	P0651 - Sensor Reference Voltage 2 Circuit Open	P0697 - Sensor Reference Voltage 3 Circuit Open	P06A3 - Sensor Reference Voltage 4 Circuit Open	P2088 - Camshaft Position Actuator Control Circuit Low	P2089 - Camshaft Position Actuator Control Circuit High	P2090 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 1	P2091 - Exhaust Camshaft Position Actuator Control Circuit High Bank 1	P2092 - Intake Camshaft Position Actuator Control Circuit Low Bank 2	P2093 - Intake Camshaft Position Actuator Control Circuit High Bank 2	P2094 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 2	P2095 - Exhaust Camshaft Position Actuator Control Circuit High Bank 2	P2098 - Post Catalyst Fuel Trim System Low Limit Bank 2	CONTINUED NEXT LINE
	P2099 - Post Catalyst Fuel Trim System High Limit Bank 2	P212B - Throttle Position Sensor 2 Performance Bank 2	P212C - Throttle Position Sensor 2 Circuit Low Bank 2	P212D - Throttle Position Sensor 2 Circuit High Bank 2	P2179 - Fuel Trim System Lean Off Idle Bank 2	P2180 - Fuel Trim System Rich Off Idle Bank 2	P2189 - Fuel Trim System Lean at Idle Bank 2	P2190 - Fuel Trim System Rich at Idle Bank 2	P2197 - Oxygen Sensor Signal Biased Lean Bank 2 Sensor 1	P2198 - Oxygen Sensor Signal Biased Rich Bank 2 Sensor 1	P2235 - Oxygen Sensor Signal Circuit Shorted to Heater Circuit Bank 2 Sensor 2	P2240 - Oxygen Sensor Pumping Current Control Circuit Open Bank 2 Sensor 1	P2254 - Oxygen Sensor Low Reference Circuit Open Bank 2 Sensor 1	P2272 - Oxygen Sensor Signal Stuck Lean Bank 2 Sensor 2	P2273 - Oxygen Sensor Signal Stuck Rich Bank 2 Sensor 2	P2298 - Oxygen Sensor Out of Range During Deceleration Bank 2 Sensor 1	P2629 - Oxygen Sensor Pumping Current Trim Circuit Open Bank 2 Sensor 1	P2A0B - Manifold Absolute Pressure Sensor Performance Bank 2	P2A0C - Manifold Absolute Pressure Sensor Circuit Low Bank 2	P2A0D - Manifold Absolute Pressure Sensor Circuit High Bank 2	P2E6A - Fuel Trim System Lean During Cylinder Deactivation Bank 2	P2E6B - Fuel Trim System Rich During Cylinder Deactivation Bank 2	CONTINUED NEXT LINE
	P30D9 - Control Module Processor Serial Peripheral Interface Bus 4	P318A - Cylinder 2 Reactivation Performance - Trapped High Pressure Exhaust Charge	P318B - Cylinder 3 Reactivation Performance - Trapped High Pressure Exhaust Charge	P318D - Cylinder 5 Reactivation Performance - Trapped High Pressure Exhaust Charge	P3190 - Cylinder 8 Reactivation Performance - Trapped High Pressure Exhaust Charge	P3409 - Cylinder 2 Deactivation Solenoid Control Circuit Open	P3411 - Cylinder 2 Deactivation Solenoid Control Circuit Low	P3412 - Cylinder 2 Deactivation Solenoid Control Circuit High	P3417 - Cylinder 3 Deactivation Solenoid Control Circuit Open	P3419 - Cylinder 3 Deactivation Solenoid Control Circuit Low	P3420 - Cylinder 3 Deactivation Solenoid Control Circuit High	P3433 - Cylinder 5 Deactivation Solenoid Control Circuit Open	P3435 - Cylinder 5 Deactivation Solenoid Control Circuit Low	P3436 - Cylinder 5 Deactivation Solenoid Control Circuit High	P3457 - Cylinder 8 Deactivation Solenoid Control Circuit Open	P3459 - Cylinder 8 Deactivation Solenoid Control Circuit Low	P3460 - Cylinder 8 Deactivation Solenoid Control Circuit High	P3499 - Cylinder 2 Deactivation Performance	P349A - Cylinder 3 Deactivation Performance	P349C - Cylinder 5 Deactivation Performance	P349F - Cylinder 8 Deactivation Performance	U0607 - Lost Communication With Throttle Position Sensor Bank 1 Sensor 2	CONTINUED NEXT LINE
	U0688 - Lost Communication With Throttle Position Sensor Bank 2 Sensor 2	U136D - Invalid Data Received From Throttle Position Sensor 2	U136F - Invalid Data Received From Throttle Position Sensor Bank 2 Sensor 2	END																			
P0157 - Oxygen Sensor Circuit Low Bank 2 Sensor 2	END																						
P0158 - Oxygen Sensor Circuit High Bank 2 Sensor 2	P0056 - Oxygen Sensor Heater Control Circuit Open Bank 2 Sensor 2	P0057 - Oxygen Sensor Heater Control Circuit Low Bank 2 Sensor 2	P0058 - Oxygen Sensor Heater Control Circuit High Bank 2 Sensor 2	END																			
P0160 - Oxygen Sensor Circuit Insufficient Activity Bank 2 Sensor 2	P0056 - Oxygen Sensor Heater Control Circuit Open Bank 2 Sensor 2	P0057 - Oxygen Sensor Heater Control Circuit Low Bank 2 Sensor 2	P0058 - Oxygen Sensor Heater Control Circuit High Bank 2 Sensor 2	END																			
P0161 - Oxygen Sensor Heater Performance Bank 2 Sensor 2	P0056 - Oxygen Sensor Heater Control Circuit Open Bank 2 Sensor 2	P0057 - Oxygen Sensor Heater Control Circuit Low Bank 2 Sensor 2	P0058 - Oxygen Sensor Heater Control Circuit High Bank 2 Sensor 2	END																			
P0171 - Fuel Trim System Lean Bank 1	END																						
P0172 - Fuel Trim System Rich Bank 1	END																						
P0174 - Fuel Trim System Lean Bank 2	END																						
P0175 - Fuel Trim System Rich Bank 2	END																						
P018B - Fuel Pressure Sensor Performance	P018C - Fuel Pressure Sensor Circuit Low	P018D - Fuel Pressure Sensor Circuit High	P0641 - Sensor Reference Voltage 1 Circuit Open	END																			
P018C - Fuel Pressure Sensor Circuit Low	P0641 - Sensor Reference Voltage 1 Circuit Open	END																					
P018D - Fuel Pressure Sensor Circuit High	P0641 - Sensor Reference Voltage 1 Circuit Open	END																					
P0191 - Fuel Rail Pressure Sensor Performance	P0191 - Fuel Rail Pressure Sensor Performance	P0651 - Sensor Reference Voltage 2 Circuit Open	P128A - Fuel Rail Pressure Sensor Internal Performance Bank 1 Sensor 1	P128B - Fuel Rail Pressure Sensor Internal Performance Bank 1 Sensor 2	U101B - Lost Communication With Fuel Rail Pressure Sensor Bank 1 Sensor 2	U1375 - Invalid Data Received From Fuel Rail Pressure Sensor 2	END																

The DTCs in this column is inhibited by the DTCs listed to the right	The DTCs in these columns inhibit the DTC to the left						The DTCs in these columns inhibit the DTC to the left						The DTCs in these columns inhibit the DTC to the left						The DTCs in these columns inhibit the DTC to the left				
Inhibited DTC	Fault Active DTCs						Fault Active DTCs						Fault Active DTCs						Fault Active DTCs				
P0196 - Engine Oil Temperature Sensor Performance	P0071 - Ambient Air Temperature Sensor Performance	P0072 - Ambient Air Temperature Sensor Circuit Low	P0073 - Ambient Air Temperature Sensor Circuit High	P0197 - Engine Oil Temperature Sensor Circuit Low	P0198 - Engine Oil Temperature Sensor Circuit High	P0199 - Engine Oil Temperature Sensor Erratic	END																
P0197 - Engine Oil Temperature Sensor Circuit Low	END																						
P0198 - Engine Oil Temperature Sensor Circuit High	END																						
P0199 - Engine Oil Temperature Sensor Erratic	END																						
P0201 - Fuel Injector 1 Control Circuit Open	END																						
P0202 - Fuel Injector 2 Control Circuit Open	END																						
P0203 - Fuel Injector 3 Control Circuit Open	END																						
P0204 - Fuel Injector 4 Control Circuit Open	END																						
P0205 - Fuel Injector 5 Control Circuit Open	END																						
P0206 - Fuel Injector 6 Control Circuit Open	END																						
P0207 - Fuel Injector 7 Control Circuit Open	END																						
P0208 - Fuel Injector 8 Control Circuit Open	END																						
P0221 - Throttle Position Sensor 2 Performance	P0641 - Sensor Reference Voltage 1 Circuit Open	P06A3 - Sensor Reference Voltage 4 Circuit Open	END																				
P0222 - Throttle Position Sensor 2 Circuit Low	P0641 - Sensor Reference Voltage 1 Circuit Open	P06A3 - Sensor Reference Voltage 4 Circuit Open	END																				
P0223 - Throttle Position Sensor 2 Circuit High	P0641 - Sensor Reference Voltage 1 Circuit Open	P06A3 - Sensor Reference Voltage 4 Circuit Open	END																				
P0226 - Throttle Position Sensor Performance Bank 2	P0697 - Sensor Reference Voltage 3 Circuit Open	END																					
P0227 - Throttle Position Sensor Circuit Low Bank 2	P0697 - Sensor Reference Voltage 3 Circuit Open	END																					
P0228 - Throttle Position Sensor Circuit High Bank 2	P0697 - Sensor Reference Voltage 3 Circuit Open	END																					
P0234 - Boost System A Overboost Condition	P0106 - Manifold Absolute Pressure Sensor Performance	P0107 - Manifold Absolute Pressure Sensor Circuit Low	P0108 - Manifold Absolute Pressure Sensor Circuit High	P0234 - Boost System A Overboost Condition	P0236 - Turbocharger Boost Sensor Performance	P0237 - Turbocharger Boost Sensor Circuit Low	P0238 - Turbocharger Boost Sensor Circuit High	P0240 - Turbocharger Boost Sensor Performance Bank 2	P0241 - Turbocharger Boost Sensor Circuit Low Bank 2	P0242 - Turbocharger Boost Sensor Circuit High Bank 2	P0243 - Turbocharger A Wastegate Control Circuit Open	P0245 - Turbocharger A Wastegate Control Circuit Low	P0246 - Turbocharger A Wastegate Control Circuit High	P0247 - Turbocharger B Wastegate Control Circuit Open	P0249 - Turbocharger B Wastegate Control Circuit Low	P0250 - Turbocharger B Wastegate Control Circuit High	P0299 - Boost System A Underboost Condition	P02CA - Boost System B Overboost Condition	P02CB - Boost System B Underboost Condition	P1038 - Turbocharger A Wastegate Actuator Supply Voltage Circuit Low	P103A - Turbocharger A Wastegate Control Circuit Shorted	P10BD - Turbocharger B Wastegate Actuator Supply Voltage Circuit Low	CONTINUED NEXT LINE
	P10BE - Turbocharger B Wastegate Control Circuit Shorted	P2227 - Barometric Pressure Sensor Performance Bank 1 Sensor 1	P2228 - Barometric Pressure Sensor Circuit Low Bank 1 Sensor 1	P2229 - Barometric Pressure Sensor Circuit High Bank 1 Sensor 1	P2A0B - Manifold Absolute Pressure Sensor Performance Bank 2	P2A0C - Manifold Absolute Pressure Sensor Circuit Low Bank 2	P2A0D - Manifold Absolute Pressure Sensor Circuit High Bank 2	P2ABD - Turbocharger Wastegate Actuator A Driver Current/Temperature Too High	P2ABE - Turbocharger Wastegate Actuator B Driver Current/Temperature Too High	P30E8 - Turbocharger A Wastegate Control Circuit 2 Low	P30E9 - Turbocharger A Wastegate Control Circuit 2 High	P30EA - Turbocharger B Wastegate Control Circuit 2 Low	P30EB - Turbocharger B Wastegate Control Circuit 2 High	END									
P0236 - Turbocharger Boost Sensor Performance	P0121 - Throttle Position Sensor Performance	P0122 - Throttle Position Sensor Circuit Low	P0123 - Throttle Position Sensor Circuit High	P0221 - Throttle Position Sensor 2 Performance	P0222 - Throttle Position Sensor 2 Circuit Low	P0223 - Throttle Position Sensor 2 Circuit High	P0237 - Turbocharger Boost Sensor Circuit Low	P0238 - Turbocharger Boost Sensor Circuit High	P2176 - Minimum Throttle Position Not Learned	P2227 - Barometric Pressure Sensor Performance Bank 1 Sensor 1	P2228 - Barometric Pressure Sensor Circuit Low Bank 1 Sensor 1	P2229 - Barometric Pressure Sensor Circuit High Bank 1 Sensor 1	U0607 - Lost Communication With Throttle Position Sensor Bank 1 Sensor 2	U136D - Invalid Data Received From Throttle Position Sensor 2	END								
P0237 - Turbocharger Boost Sensor Circuit Low	P0651 - Sensor Reference Voltage 2 Circuit Open	END																					
P0238 - Turbocharger Boost Sensor Circuit High	P0651 - Sensor Reference Voltage 2 Circuit Open	END																					
P0240 - Turbocharger Boost Sensor Performance Bank 2	P0226 - Throttle Position Sensor Performance Bank 2	P0227 - Throttle Position Sensor Circuit Low Bank 2	P0228 - Throttle Position Sensor Circuit High Bank 2	P0241 - Turbocharger Boost Sensor Circuit Low Bank 2	P0242 - Turbocharger Boost Sensor Circuit High Bank 2	P212B - Throttle Position Sensor 2 Performance Bank 2	P212C - Throttle Position Sensor 2 Circuit Low Bank 2	P212D - Throttle Position Sensor 2 Circuit High Bank 2	P218A - Minimum Throttle Position Not Learned Bank 2	P2227 - Barometric Pressure Sensor Performance Bank 1 Sensor 1	P2228 - Barometric Pressure Sensor Circuit Low Bank 1 Sensor 1	P2229 - Barometric Pressure Sensor Circuit High Bank 1 Sensor 1	U0688 - Lost Communication With Throttle Position Sensor Bank 2 Sensor 2	U136F - Invalid Data Received From Throttle Position Sensor Bank 2 Sensor 2	END								
P0241 - Turbocharger Boost Sensor Circuit Low Bank 2	P0651 - Sensor Reference Voltage 2 Circuit Open	END																					
P0242 - Turbocharger Boost Sensor Circuit High Bank 2	P0651 - Sensor Reference Voltage 2 Circuit Open	END																					
P0243 - Turbocharger A Wastegate Control Circuit Open	P2B81 - Turbocharger A Wastegate Position Sensor Performance	P2B93 - Turbocharger A Wastegate Position Sensor Exceeded Learning Limit	END																				
P0245 - Turbocharger A Wastegate Control Circuit Low	END																						
P0246 - Turbocharger A Wastegate Control Circuit High	END																						
P0247 - Turbocharger B Wastegate Control Circuit Open	P2B82 - Turbocharger B Wastegate Position Sensor Performance	P2B94 - Turbocharger B Wastegate Position Sensor Exceeded Learning Limit	END																				
P0249 - Turbocharger B Wastegate Control Circuit Low	END																						
P0250 - Turbocharger B Wastegate Control Circuit High	END																						
P0299 - Boost System A Underboost Condition	P0106 - Manifold Absolute Pressure Sensor Performance	P0107 - Manifold Absolute Pressure Sensor Circuit Low	P0108 - Manifold Absolute Pressure Sensor Circuit High	P0234 - Boost System A Overboost Condition	P0236 - Turbocharger Boost Sensor Performance	P0237 - Turbocharger Boost Sensor Circuit Low	P0238 - Turbocharger Boost Sensor Circuit High	P0240 - Turbocharger Boost Sensor Performance Bank 2	P0241 - Turbocharger Boost Sensor Circuit Low Bank 2	P0242 - Turbocharger Boost Sensor Circuit High Bank 2	P0243 - Turbocharger A Wastegate Control Circuit Open	P0245 - Turbocharger A Wastegate Control Circuit Low	P0246 - Turbocharger A Wastegate Control Circuit High	P0247 - Turbocharger B Wastegate Control Circuit Open	P0249 - Turbocharger B Wastegate Control Circuit Low	P0250 - Turbocharger B Wastegate Control Circuit High	P0299 - Boost System A Underboost Condition	P02CA - Boost System B Overboost Condition	P02CB - Boost System B Underboost Condition	P1038 - Turbocharger A Wastegate Actuator Supply Voltage Circuit Low	P103A - Turbocharger A Wastegate Control Circuit Shorted	P10BD - Turbocharger B Wastegate Actuator Supply Voltage Circuit Low	CONTINUED NEXT LINE
	P10BE - Turbocharger B Wastegate Control Circuit Shorted	P2227 - Barometric Pressure Sensor Performance Bank 1 Sensor 1	P2228 - Barometric Pressure Sensor Circuit Low Bank 1 Sensor 1	P2229 - Barometric Pressure Sensor Circuit High Bank 1 Sensor 1	P2A0B - Manifold Absolute Pressure Sensor Performance Bank 2	P2A0C - Manifold Absolute Pressure Sensor Circuit Low Bank 2	P2A0D - Manifold Absolute Pressure Sensor Circuit High Bank 2	P2ABD - Turbocharger Wastegate Actuator A Driver Current/Temperature Too High	P2ABE - Turbocharger Wastegate Actuator B Driver Current/Temperature Too High	P30E8 - Turbocharger A Wastegate Control Circuit 2 Low	P30E9 - Turbocharger A Wastegate Control Circuit 2 High	P30EA - Turbocharger B Wastegate Control Circuit 2 Low	P30EB - Turbocharger B Wastegate Control Circuit 2 High	END									
P029D - Fuel Injector 1 Leak	END																						
P02A1 - Fuel Injector 2 Leak	END																						
P02A5 - Fuel Injector 3 Leak	END																						
P02A9 - Fuel Injector 4 Leak	END																						
P02AD - Fuel Injector 5 Leak	END																						
P02B1 - Fuel Injector 6 Leak	END																						
P02B5 - Fuel Injector 7 Leak	END																						
P02B9 - Fuel Injector 8 Leak	END																						
P02CA - Boost System B Overboost Condition	P0106 - Manifold Absolute Pressure Sensor Performance	P0107 - Manifold Absolute Pressure Sensor Circuit Low	P0108 - Manifold Absolute Pressure Sensor Circuit High	P0234 - Boost System A Overboost Condition	P0236 - Turbocharger Boost Sensor Performance	P0237 - Turbocharger Boost Sensor Circuit Low	P0238 - Turbocharger Boost Sensor Circuit High	P0240 - Turbocharger Boost Sensor Performance Bank 2	P0241 - Turbocharger Boost Sensor Circuit Low Bank 2	P0242 - Turbocharger Boost Sensor Circuit High Bank 2	P0243 - Turbocharger A Wastegate Control Circuit Open	P0245 - Turbocharger A Wastegate Control Circuit Low	P0246 - Turbocharger A Wastegate Control Circuit High	P0247 - Turbocharger B Wastegate Control Circuit Open	P0249 - Turbocharger B Wastegate Control Circuit Low	P0250 - Turbocharger B Wastegate Control Circuit High	P0299 - Boost System A Underboost Condition	P02CA - Boost System B Overboost Condition	P02CB - Boost System B Underboost Condition	P1038 - Turbocharger A Wastegate Actuator Supply Voltage Circuit Low	P103A - Turbocharger A Wastegate Control Circuit Shorted	P10BD - Turbocharger B Wastegate Actuator Supply Voltage Circuit Low	CONTINUED NEXT LINE
	P10BE - Turbocharger B Wastegate Control Circuit Shorted	P2227 - Barometric Pressure Sensor Performance Bank 1 Sensor 1	P2228 - Barometric Pressure Sensor Circuit Low Bank 1 Sensor 1	P2229 - Barometric Pressure Sensor Circuit High Bank 1 Sensor 1	P2A0B - Manifold Absolute Pressure Sensor Performance Bank 2	P2A0C - Manifold Absolute Pressure Sensor Circuit Low Bank 2	P2A0D - Manifold Absolute Pressure Sensor Circuit High Bank 2	P2ABD - Turbocharger Wastegate Actuator A Driver Current/Temperature Too High	P2ABE - Turbocharger Wastegate Actuator B Driver Current/Temperature Too High	P30E8 - Turbocharger A Wastegate Control Circuit 2 Low	P30E9 - Turbocharger A Wastegate Control Circuit 2 High	P30EA - Turbocharger B Wastegate Control Circuit 2 Low	P30EB - Turbocharger B Wastegate Control Circuit 2 High	END									
P02CB - Boost System B Underboost Condition	P0106 - Manifold Absolute Pressure Sensor Performance	P0107 - Manifold Absolute Pressure Sensor Circuit Low	P0108 - Manifold Absolute Pressure Sensor Circuit High	P0234 - Boost System A Overboost Condition	P0236 - Turbocharger Boost Sensor Performance	P0237 - Turbocharger Boost Sensor Circuit Low	P0238 - Turbocharger Boost Sensor Circuit High	P0240 - Turbocharger Boost Sensor Performance Bank 2	P0241 - Turbocharger Boost Sensor Circuit Low Bank 2	P0242 - Turbocharger Boost Sensor Circuit High Bank 2	P0243 - Turbocharger A Wastegate Control Circuit Open	P0245 - Turbocharger A Wastegate Control Circuit Low	P0246 - Turbocharger A Wastegate Control Circuit High	P0247 - Turbocharger B Wastegate Control Circuit Open	P0249 - Turbocharger B Wastegate Control Circuit Low	P0250 - Turbocharger B Wastegate Control Circuit High	P0299 - Boost System A Underboost Condition	P02CA - Boost System B Overboost Condition	P02CB - Boost System B Underboost Condition	P1038 - Turbocharger A Wastegate Actuator Supply Voltage Circuit Low	P103A - Turbocharger A Wastegate Control Circuit Shorted	P10BD - Turbocharger B Wastegate Actuator Supply Voltage Circuit Low	CONTINUED NEXT LINE
	P10BE - Turbocharger B Wastegate Control Circuit Shorted	P2227 - Barometric Pressure Sensor Performance Bank 1 Sensor 1	P2228 - Barometric Pressure Sensor Circuit Low Bank 1 Sensor 1	P2229 - Barometric Pressure Sensor Circuit High Bank 1 Sensor 1	P2A0B - Manifold Absolute Pressure Sensor Performance Bank 2	P2A0C - Manifold Absolute Pressure Sensor Circuit Low Bank 2	P2A0D - Manifold Absolute Pressure Sensor Circuit High Bank 2	P2ABD - Turbocharger Wastegate Actuator A Driver Current/Temperature Too High	P2ABE - Turbocharger Wastegate Actuator B Driver Current/Temperature Too High	P30E8 - Turbocharger A Wastegate Control Circuit 2 Low	P30E9 - Turbocharger A Wastegate Control Circuit 2 High	P30EA - Turbocharger B Wastegate Control Circuit 2 Low	P30EB - Turbocharger B Wastegate Control Circuit 2 High	END									
P02EE - Cylinder 1 Injector Control Performance	END																						
P02EF - Cylinder 2 Injector Control Performance	END																						

The DTCs in this column is inhibited by the DTCs listed to the right	The DTCs in these columns inhibit the DTC to the left						The DTCs in these columns inhibit the DTC to the left			The DTCs in these columns inhibit the DTC to the left	The DTCs in these columns inhibit the DTC to the left
Inhibited DTC	Fault Active DTCs						Fault Active DTCs			Fault Active DTCs	Fault Active DTCs
P02F0 - Cylinder 3 Injector Control Performance	END										
P02F1 - Cylinder 4 Injector Control Performance	END										
P02F2 - Cylinder 5 Injector Control Performance	END										
P02F3 - Cylinder 6 Injector Control Performance	END										
P02F4 - Cylinder 7 Injector Control Performance	END										
P02F5 - Cylinder 8 Injector Control Performance	END										
P0300 - Engine Misfire Detected	END										
P0301 - Cylinder 1 Misfire Detected	END										
P0302 - Cylinder 2 Misfire Detected	END										
P0303 - Cylinder 3 Misfire Detected	END										
P0304 - Cylinder 4 Misfire Detected	END										
P0305 - Cylinder 5 Misfire Detected	END										
P0306 - Cylinder 6 Misfire Detected	END										
P0307 - Cylinder 7 Misfire Detected	END										
P0308 - Cylinder 8 Misfire Detected	END										
P0315 - Crankshaft Position System Variation Not Learned	END										
P0325 - Knock Sensor Circuit Open	END										
P0326 - Knock Sensor Performance	END										
P0327 - Knock Sensor Circuit Low	END										
P0328 - Knock Sensor Circuit High	END										
P032A - Knock Sensor 3 Circuit Open	END										
P032B - Knock Sensor 3 Performance	END										
P032C - Knock Sensor 3 Circuit Low	END										
P032D - Knock Sensor 3 Circuit High	END										
P0330 - Knock Sensor 2 Circuit Open	END										
P0331 - Knock Sensor 2 Performance	END										
P0332 - Knock Sensor 2 Circuit Low	END										
P0333 - Knock Sensor 2 Circuit High	END										
P0335 - Crankshaft Position Sensor Circuit	P0651 - Sensor Reference Voltage 2 Circuit Open	END									
P0336 - Crankshaft Position Sensor Performance	P0651 - Sensor Reference Voltage 2 Circuit Open	END									
P033A - Knock Sensor 4 Circuit Open	END										
P033B - Knock Sensor 4 Performance	END										
P033C - Knock Sensor 4 Circuit Low	END										
P033D - Knock Sensor 4 Circuit High	END										
P0341 - Camshaft Position Sensor Performance	P0010 - Camshaft Position Actuator Control Circuit Open	P0335 - Crankshaft Position Sensor Circuit	P0336 - Crankshaft Position Sensor Performance	P034A - Crankshaft Position Sensor Start Position Incorrect	P034B - Crankshaft Position Sensor Direction Incorrect	P0641 - Sensor Reference Voltage 1 Circuit Open	P2088 - Camshaft Position Actuator Control Circuit Low	P2089 - Camshaft Position Actuator Control Circuit High	END		
P0342 - Camshaft Position Sensor Circuit Low	P0010 - Camshaft Position Actuator Control Circuit Open	P0335 - Crankshaft Position Sensor Circuit	P0336 - Crankshaft Position Sensor Performance	P034A - Crankshaft Position Sensor Start Position Incorrect	P034B - Crankshaft Position Sensor Direction Incorrect	P0641 - Sensor Reference Voltage 1 Circuit Open	P2088 - Camshaft Position Actuator Control Circuit Low	P2089 - Camshaft Position Actuator Control Circuit High	END		
P0343 - Camshaft Position Sensor Circuit High	P0010 - Camshaft Position Actuator Control Circuit Open	P0335 - Crankshaft Position Sensor Circuit	P0336 - Crankshaft Position Sensor Performance	P034A - Crankshaft Position Sensor Start Position Incorrect	P034B - Crankshaft Position Sensor Direction Incorrect	P0641 - Sensor Reference Voltage 1 Circuit Open	P2088 - Camshaft Position Actuator Control Circuit Low	P2089 - Camshaft Position Actuator Control Circuit High	END		
P0346 - Intake Camshaft Position Sensor Performance Bank 2	P0020 - Intake Camshaft Position Actuator Control Circuit Open Bank 2	P0335 - Crankshaft Position Sensor Circuit	P0336 - Crankshaft Position Sensor Performance	P034A - Crankshaft Position Sensor Start Position Incorrect	P034B - Crankshaft Position Sensor Direction Incorrect	P0641 - Sensor Reference Voltage 1 Circuit Open	P2092 - Intake Camshaft Position Actuator Control Circuit Low Bank 2	P2093 - Intake Camshaft Position Actuator Control Circuit High Bank 2	END		
P0347 - Intake Camshaft Position Sensor Circuit Low Bank 2	P0020 - Intake Camshaft Position Actuator Control Circuit Open Bank 2	P0335 - Crankshaft Position Sensor Circuit	P0336 - Crankshaft Position Sensor Performance	P034A - Crankshaft Position Sensor Start Position Incorrect	P034B - Crankshaft Position Sensor Direction Incorrect	P0641 - Sensor Reference Voltage 1 Circuit Open	P2092 - Intake Camshaft Position Actuator Control Circuit Low Bank 2	P2093 - Intake Camshaft Position Actuator Control Circuit High Bank 2	END		
P0348 - Intake Camshaft Position Sensor Circuit High Bank 2	P0020 - Intake Camshaft Position Actuator Control Circuit Open Bank 2	P0335 - Crankshaft Position Sensor Circuit	P0336 - Crankshaft Position Sensor Performance	P034A - Crankshaft Position Sensor Start Position Incorrect	P034B - Crankshaft Position Sensor Direction Incorrect	P0641 - Sensor Reference Voltage 1 Circuit Open	P2092 - Intake Camshaft Position Actuator Control Circuit Low Bank 2	P2093 - Intake Camshaft Position Actuator Control Circuit High Bank 2	END		
P034A - Crankshaft Position Sensor Start Position Incorrect	END										
P034B - Crankshaft Position Sensor Direction Incorrect	END										
P0351 - Ignition Coil 1 Control Circuit Open	END										
P0352 - Ignition Coil 2 Control Circuit Open	END										
P0353 - Ignition Coil 3 Control Circuit Open	END										
P0354 - Ignition Coil 4 Control Circuit Open	END										
P0355 - Ignition Coil 5 Control Circuit Open	END										
P0356 - Ignition Coil 6 Control Circuit Open	END										

19 OBDG07 ECM DTC Inhibit Tables

The DTCs in this column is inhibited by the DTCs listed to the right	The DTCs in these columns inhibit the DTC to the left						The DTCs in these columns inhibit the DTC to the left						The DTCs in these columns inhibit the DTC to the left						The DTCs in these columns inhibit the DTC to the left				
Inhibited DTC	Fault Active DTCs						Fault Active DTCs						Fault Active DTCs						Fault Active DTCs				
P0357 - Ignition Coil 7 Control Circuit Open	END																						
P0358 - Ignition Coil 8 Control Circuit Open	END																						
P0366 - Exhaust Camshaft Position Sensor Performance Bank 1	P0013 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 1	P0335 - Crankshaft Position Sensor Circuit	P0336 - Crankshaft Position Sensor Performance	P034A - Crankshaft Position Sensor Start Position Incorrect	P034B - Crankshaft Position Sensor Direction Incorrect	P0641 - Sensor Reference Voltage 1 Circuit Open	P2090 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 1	P2091 - Exhaust Camshaft Position Actuator Control Circuit High Bank 1	END														
P0367 - Exhaust Camshaft Position Sensor Circuit Low Bank 1	P0013 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 1	P0335 - Crankshaft Position Sensor Circuit	P0336 - Crankshaft Position Sensor Performance	P034A - Crankshaft Position Sensor Start Position Incorrect	P034B - Crankshaft Position Sensor Direction Incorrect	P0641 - Sensor Reference Voltage 1 Circuit Open	P2090 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 1	P2091 - Exhaust Camshaft Position Actuator Control Circuit High Bank 1	END														
P0368 - Exhaust Camshaft Position Sensor Circuit High Bank 1	P0013 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 1	P0335 - Crankshaft Position Sensor Circuit	P0336 - Crankshaft Position Sensor Performance	P034A - Crankshaft Position Sensor Start Position Incorrect	P034B - Crankshaft Position Sensor Direction Incorrect	P0641 - Sensor Reference Voltage 1 Circuit Open	P2090 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 1	P2091 - Exhaust Camshaft Position Actuator Control Circuit High Bank 1	END														
P0391 - Exhaust Camshaft Position Sensor Performance Bank 2	P0023 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 2	P0335 - Crankshaft Position Sensor Circuit	P0336 - Crankshaft Position Sensor Performance	P034A - Crankshaft Position Sensor Start Position Incorrect	P034B - Crankshaft Position Sensor Direction Incorrect	P0641 - Sensor Reference Voltage 1 Circuit Open	P2094 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 2	P2095 - Exhaust Camshaft Position Actuator Control Circuit High Bank 2	END														
P0392 - Exhaust Camshaft Position Sensor Circuit Low Bank 2	P0023 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 2	P0335 - Crankshaft Position Sensor Circuit	P0336 - Crankshaft Position Sensor Performance	P034A - Crankshaft Position Sensor Start Position Incorrect	P034B - Crankshaft Position Sensor Direction Incorrect	P0641 - Sensor Reference Voltage 1 Circuit Open	P2094 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 2	P2095 - Exhaust Camshaft Position Actuator Control Circuit High Bank 2	END														
P0393 - Exhaust Camshaft Position Sensor Circuit High Bank 2	P0023 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 2	P0335 - Crankshaft Position Sensor Circuit	P0336 - Crankshaft Position Sensor Performance	P034A - Crankshaft Position Sensor Start Position Incorrect	P034B - Crankshaft Position Sensor Direction Incorrect	P0641 - Sensor Reference Voltage 1 Circuit Open	P2094 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 2	P2095 - Exhaust Camshaft Position Actuator Control Circuit High Bank 2	END														
P0420 - Catalyst System Low Efficiency	P000A - Camshaft Position System Slow Response Bank 1	P000B - Exhaust Camshaft Position System Slow Response Bank 1	P000C - Intake Camshaft Position System Slow Response Bank 2	P000D - Exhaust Camshaft Position System Slow Response Bank 2	P0010 - Camshaft Position Actuator Control Circuit Open	P0011 - Camshaft Position System Performance	P0013 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 1	P0014 - Exhaust Camshaft Position System Performance Bank 1	P0020 - Intake Camshaft Position Actuator Control Circuit Open Bank 2	P0021 - Intake Camshaft Position System Performance Bank 2	P0023 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 2	P0024 - Exhaust Camshaft Position System Performance Bank 2	P0030 - Oxygen Sensor Heater Control Circuit Open Bank 1 Sensor 1	P0031 - Oxygen Sensor Heater Control Circuit Low Bank 1 Sensor 1	P0032 - Oxygen Sensor Heater Control Circuit High Bank 1 Sensor 1	P0036 - Oxygen Sensor Heater Control Circuit Open Bank 1 Sensor 2	P0037 - Oxygen Sensor Heater Control Circuit Low Bank 1 Sensor 2	P0038 - Oxygen Sensor Heater Control Circuit High Bank 1 Sensor 2	P0101 - Mass Air Flow Sensor Performance	P0102 - Mass Air Flow Sensor Circuit Low	P0103 - Mass Air Flow Sensor Circuit High	P0106 - Manifold Absolute Pressure Sensor Performance	CONTINUED NEXT LINE
	P0107 - Manifold Absolute Pressure Sensor Circuit Low	P0108 - Manifold Absolute Pressure Sensor Circuit High	P010B - Mass Air Flow Sensor 2 Performance	P010C - Mass Air Flow Sensor 2 Circuit Low	P010D - Mass Air Flow Sensor 2 Circuit High	P0116 - Engine Coolant Temperature Sensor Performance	P0117 - Engine Coolant Temperature Sensor Circuit Low	P0118 - Engine Coolant Temperature Sensor Circuit High	P0119 - Engine Coolant Temperature Sensor Circuit Erratic	P0121 - Throttle Position Sensor Performance	P0122 - Throttle Position Sensor Circuit Low	P0123 - Throttle Position Sensor Circuit High	P0128 - Engine Coolant Temperature Below Thermostat Regulating Temperature	P0130 - HO2S Circuit Bank 1 Sensor 1	P0131 - Oxygen Sensor Circuit Low Bank 1 Sensor 1	P0132 - Oxygen Sensor Circuit High Bank 1 Sensor 1	P0133 - Oxygen Sensor Slow Response Bank 1 Sensor 1	P0137 - Oxygen Sensor Circuit Low Bank 1 Sensor 2	P0138 - Oxygen Sensor Circuit High Bank 1 Sensor 2	P013A - Oxygen Sensor Slow Response - Rich to Lean Bank 1 Sensor 2	P013B - Oxygen Sensor Slow Response - Lean to Rich Bank 1 Sensor 2	P013E - Oxygen Sensor Delayed Response - Rich to Lean Bank 1 Sensor 2	CONTINUED NEXT LINE
	P013F - Oxygen Sensor Delayed Response - Lean to Rich Bank 1 Sensor 2	P0140 - Oxygen Sensor Circuit Insufficient Activity Bank 1 Sensor 2	P0141 - Oxygen Sensor Heater Performance Bank 1 Sensor 2	P0171 - Fuel Trim System Lean Bank 1	P0172 - Fuel Trim System Rich Bank 1	P0221 - Throttle Position Sensor 2 Performance	P0222 - Throttle Position Sensor 2 Circuit Low	P0223 - Throttle Position Sensor 2 Circuit High	P0226 - Throttle Position Sensor Performance Bank 2	P0227 - Throttle Position Sensor Circuit Low Bank 2	P0228 - Throttle Position Sensor Circuit High Bank 2	P0300 - Engine Misfire Detected	P0301 - Cylinder 1 Misfire Detected	P0302 - Cylinder 2 Misfire Detected	P0303 - Cylinder 3 Misfire Detected	P0304 - Cylinder 4 Misfire Detected	P0305 - Cylinder 5 Misfire Detected	P0306 - Cylinder 6 Misfire Detected	P0307 - Cylinder 7 Misfire Detected	P0308 - Cylinder 8 Misfire Detected	P0443 - Evaporative Emission Purge Solenoid Control Circuit Open	P0458 - Evaporative Emission Purge Solenoid Control Circuit Low	CONTINUED NEXT LINE
	P0459 - Evaporative Emission Purge Solenoid Control Circuit High	P0496 - Evaporative Emission System Flow During Non-Purge	P0497 - Evaporative Emission System No Flow During Purge	P04AB - Evaporative Emission Purge Solenoid Control Circuit Open Bank 2	P04AC - Evaporative Emission Purge Solenoid Control Circuit Low Bank 2	P04AD - Evaporative Emission Purge Solenoid Control Circuit High Bank 2	P04AE - Evaporative Emission Purge Solenoid Performance Bank 2	P04DF - Evaporative Emission Purge Solenoid Performance Bank 1	P0641 - Sensor Reference Voltage 1 Circuit Open	P064D - Control Module Oxygen Sensor Bank 1 Sensor 1 System Performance	P0651 - Sensor Reference Voltage 2 Circuit Open	P0697 - Sensor Reference Voltage 3 Circuit Open	P06A3 - Sensor Reference Voltage 4 Circuit Open	P2088 - Camshaft Position Actuator Control Circuit Low	P2089 - Camshaft Position Actuator Control Circuit High	P2090 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 1	P2091 - Exhaust Camshaft Position Actuator Control Circuit High Bank 1	P2092 - Intake Camshaft Position Actuator Control Circuit Low Bank 2	P2093 - Intake Camshaft Position Actuator Control Circuit High Bank 2	P2094 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 2	P2095 - Exhaust Camshaft Position Actuator Control Circuit High Bank 2	P2096 - Post Catalyst Fuel Trim System Low Limit Bank 1	CONTINUED NEXT LINE
	P2097 - Post Catalyst Fuel Trim System High Limit Bank 1	P212B - Throttle Position Sensor 2 Performance Bank 2	P212C - Throttle Position Sensor 2 Circuit Low Bank 2	P212D - Throttle Position Sensor 2 Circuit High Bank 2	P2177 - Fuel Trim System Lean Off Idle Bank 1	P2178 - Fuel Trim System Rich Off Idle Bank 1	P2187 - Fuel Trim System Lean at Idle Bank 1	P2188 - Fuel Trim System Rich at Idle Bank 1	P2195 - Oxygen Sensor Signal Biased Lean Bank 1 Sensor 1	P2196 - Oxygen Sensor Signal Biased Rich Bank 1 Sensor 1	P2232 - Oxygen Sensor Signal Circuit Shorted to Heater Circuit Bank 1 Sensor 2	P2237 - Oxygen Sensor Pumping Current Control Circuit Open Bank 1 Sensor 1	P2251 - Oxygen Sensor Low Reference Circuit Open Bank 1 Sensor 1	P2270 - Oxygen Sensor Signal Stuck Lean Bank 1 Sensor 2	P2271 - Oxygen Sensor Signal Stuck Rich Bank 1 Sensor 2	P2297 - Oxygen Sensor Out of Range During Deceleration Bank 1 Sensor 1	P2626 - Oxygen Sensor Pumping Current Trim Circuit Open Bank 1 Sensor 1	P2A0B - Manifold Absolute Pressure Sensor Performance Bank 2	P2A0C - Manifold Absolute Pressure Sensor Circuit Low Bank 2	P2A0D - Manifold Absolute Pressure Sensor Circuit High Bank 2	P2E68 - Fuel Trim System Lean During Cylinder Deactivation Bank 1	P2E69 - Fuel Trim System Rich During Cylinder Deactivation Bank 1	CONTINUED NEXT LINE
	P30D8 - Control Module Processor Serial Peripheral Interface Bus 3	P318A - Cylinder 2 Reactivation Performance - Trapped High Pressure Exhaust Charge	P318B - Cylinder 3 Reactivation Performance - Trapped High Pressure Exhaust Charge	P318D - Cylinder 5 Reactivation Performance - Trapped High Pressure Exhaust Charge	P3190 - Cylinder 8 Reactivation Performance - Trapped High Pressure Exhaust Charge	P3409 - Cylinder 2 Deactivation Solenoid Control Circuit Open	P3411 - Cylinder 2 Deactivation Solenoid Control Circuit Low	P3412 - Cylinder 2 Deactivation Solenoid Control Circuit High	P3417 - Cylinder 3 Deactivation Solenoid Control Circuit Open	P3419 - Cylinder 3 Deactivation Solenoid Control Circuit Low	P3420 - Cylinder 3 Deactivation Solenoid Control Circuit High	P3433 - Cylinder 5 Deactivation Solenoid Control Circuit Open	P3435 - Cylinder 5 Deactivation Solenoid Control Circuit Low	P3436 - Cylinder 5 Deactivation Solenoid Control Circuit High	P3457 - Cylinder 8 Deactivation Solenoid Control Circuit Open	P3459 - Cylinder 8 Deactivation Solenoid Control Circuit Low	P3460 - Cylinder 8 Deactivation Solenoid Control Circuit High	P3499 - Cylinder 2 Deactivation Performance	P349A - Cylinder 3 Deactivation Performance	P349C - Cylinder 5 Deactivation Performance	P349F - Cylinder 8 Deactivation Performance	U0607 - Lost Communication With Throttle Position Sensor Bank 1 Sensor 2	CONTINUED NEXT LINE
	U0688 - Lost Communication With Throttle Position Sensor Bank 2 Sensor 2	U136D - Invalid Data Received From Throttle Position Sensor 2	U136F - Invalid Data Received From Throttle Position Sensor Bank 2 Sensor 2	END																			
P0430 - Catalyst System Low Efficiency Bank 2	P000A - Camshaft Position System Slow Response Bank 1	P000B - Exhaust Camshaft Position System Slow Response Bank 1	P000C - Intake Camshaft Position System Slow Response Bank 2	P000D - Exhaust Camshaft Position System Slow Response Bank 2	P0010 - Camshaft Position Actuator Control Circuit Open	P0011 - Camshaft Position System Performance	P0013 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 1	P0014 - Exhaust Camshaft Position System Performance Bank 1	P0020 - Intake Camshaft Position Actuator Control Circuit Open Bank 2	P0021 - Intake Camshaft Position System Performance Bank 2	P0023 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 2	P0024 - Exhaust Camshaft Position System Performance Bank 2	P0050 - Oxygen Sensor Heater Control Circuit Open Bank 2 Sensor 1	P0051 - Oxygen Sensor Heater Control Circuit Low Bank 2 Sensor 1	P0052 - Oxygen Sensor Heater Control Circuit High Bank 2 Sensor 1	P0056 - Oxygen Sensor Heater Control Circuit Open Bank 2 Sensor 2	P0057 - Oxygen Sensor Heater Control Circuit Low Bank 2 Sensor 2	P0058 - Oxygen Sensor Heater Control Circuit High Bank 2 Sensor 2	P0101 - Mass Air Flow Sensor Performance	P0102 - Mass Air Flow Sensor Circuit Low	P0103 - Mass Air Flow Sensor Circuit High	P0106 - Manifold Absolute Pressure Sensor Performance	CONTINUED NEXT LINE
	P0107 - Manifold Absolute Pressure Sensor Circuit Low	P0108 - Manifold Absolute Pressure Sensor Circuit High	P010B - Mass Air Flow Sensor 2 Performance	P010C - Mass Air Flow Sensor 2 Circuit Low	P010D - Mass Air Flow Sensor 2 Circuit High	P0116 - Engine Coolant Temperature Sensor Performance	P0117 - Engine Coolant Temperature Sensor Circuit Low	P0118 - Engine Coolant Temperature Sensor Circuit High	P0119 - Engine Coolant Temperature Sensor Circuit Erratic	P0121 - Throttle Position Sensor Performance	P0122 - Throttle Position Sensor Circuit Low	P0123 - Throttle Position Sensor Circuit High	P0128 - Engine Coolant Temperature Below Thermostat Regulating Temperature	P013C - Oxygen Sensor Slow Response - Rich to Lean Bank 2 Sensor 2	P013D - Oxygen Sensor Slow Response - Lean to Rich Bank 2 Sensor 2	P014A - Oxygen Sensor Delayed Response - Rich to Lean Bank 2 Sensor 2	P014B - Oxygen Sensor Delayed Response - Lean to Rich Bank 2 Sensor 2	P0150 - HO2S Circuit Bank 2 Sensor 1	P0151 - Oxygen Sensor Circuit Low Bank 2 Sensor 1	P0152 - Oxygen Sensor Circuit High Bank 2 Sensor 1	P0153 - Oxygen Sensor Slow Response Bank 2 Sensor 1	P0157 - Oxygen Sensor Circuit Low Bank 2 Sensor 2	CONTINUED NEXT LINE
	P0158 - Oxygen Sensor Circuit High Bank 2 Sensor 2	P0160 - Oxygen Sensor Circuit Insufficient Activity Bank 2 Sensor 2	P0161 - Oxygen Sensor Heater Performance Bank 2 Sensor 2	P0174 - Fuel Trim System Lean Bank 2	P0175 - Fuel Trim System Rich Bank 2	P0221 - Throttle Position Sensor 2 Performance	P0222 - Throttle Position Sensor 2 Circuit Low	P0223 - Throttle Position Sensor 2 Circuit High	P0226 - Throttle Position Sensor Performance Bank 2	P0227 - Throttle Position Sensor Circuit Low Bank 2	P0228 - Throttle Position Sensor Circuit High Bank 2	P0300 - Engine Misfire Detected	P0301 - Cylinder 1 Misfire Detected	P0302 - Cylinder 2 Misfire Detected	P0303 - Cylinder 3 Misfire Detected	P0304 - Cylinder 4 Misfire Detected	P0305 - Cylinder 5 Misfire Detected	P0306 - Cylinder 6 Misfire Detected	P0307 - Cylinder 7 Misfire Detected	P0308 - Cylinder 8 Misfire Detected	P0443 - Evaporative Emission Purge Solenoid Control Circuit Open	P0458 - Evaporative Emission Purge Solenoid Control Circuit Low	CONTINUED NEXT LINE
	P0459 - Evaporative Emission Purge Solenoid Control Circuit High	P0496 - Evaporative Emission System Flow During Non-Purge	P0497 - Evaporative Emission System No Flow During Purge	P04AB - Evaporative Emission Purge Solenoid Control Circuit Open Bank 2	P04AC - Evaporative Emission Purge Solenoid Control Circuit Low Bank 2	P04AD - Evaporative Emission Purge Solenoid Control Circuit High Bank 2	P04AE - Evaporative Emission Purge Solenoid Performance Bank 2	P04DF - Evaporative Emission Purge Solenoid Performance Bank 1	P0641 - Sensor Reference Voltage 1 Circuit Open	P064E - Control Module Oxygen Sensor Bank 2 Sensor 1 System Performance	P0651 - Sensor Reference Voltage 2 Circuit Open	P0697 - Sensor Reference Voltage 3 Circuit Open	P06A3 - Sensor Reference Voltage 4 Circuit Open	P2088 - Camshaft Position Actuator Control Circuit Low	P2089 - Camshaft Position Actuator Control Circuit High	P2090 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 1	P2091 - Exhaust Camshaft Position Actuator Control Circuit High Bank 1	P2092 - Intake Camshaft Position Actuator Control Circuit Low Bank 2	P2093 - Intake Camshaft Position Actuator Control Circuit High Bank 2	P2094 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 2	P2095 - Exhaust Camshaft Position Actuator Control Circuit High Bank 2	P2098 - Post Catalyst Fuel Trim System Low Limit Bank 2	CONTINUED NEXT LINE
	P2099 - Post Catalyst Fuel Trim System High Limit Bank 2	P212B - Throttle Position Sensor 2 Performance Bank 2	P212C - Throttle Position Sensor 2 Circuit Low Bank 2	P212D - Throttle Position Sensor 2 Circuit High Bank 2	P2179 - Fuel Trim System Lean Off Idle Bank 2	P2180 - Fuel Trim System Rich Off Idle Bank 2	P2189 - Fuel Trim System Lean at Idle Bank 2	P2190 - Fuel Trim System Rich at Idle Bank 2	P2197 - Oxygen Sensor Signal Biased Lean Bank 2 Sensor 1	P2198 - Oxygen Sensor Signal Biased Rich Bank 2 Sensor 1	P2235 - Oxygen Sensor Signal Circuit Shorted to Heater Circuit Bank 2 Sensor 2	P2240 - Oxygen Sensor Pumping Current Control Circuit Open Bank 2 Sensor 1	P2254 - Oxygen Sensor Low Reference Circuit Open Bank 2 Sensor 1	P2272 - Oxygen Sensor Signal Stuck Lean Bank 2 Sensor 2	P2273 - Oxygen Sensor Signal Stuck Rich Bank 2 Sensor 2	P2298 - Oxygen Sensor Out of Range During Deceleration Bank 2 Sensor 1	P2629 - Oxygen Sensor Pumping Current Trim Circuit Open Bank 2 Sensor 1	P2A0B - Manifold Absolute Pressure Sensor Performance Bank 2	P2A0C - Manifold Absolute Pressure Sensor Circuit Low Bank 2	P2A0D - Manifold Absolute Pressure Sensor Circuit High Bank 2	P2E6A - Fuel Trim System Lean During Cylinder Deactivation Bank 2	P2E6B - Fuel Trim System Rich During Cylinder Deactivation Bank 2	CONTINUED NEXT LINE
	P30D9 - Control Module Processor Serial Peripheral Interface Bus 4	P318A - Cylinder 2 Reactivation Performance - Trapped High Pressure Exhaust Charge	P318B - Cylinder 3 Reactivation Performance - Trapped High Pressure Exhaust Charge	P318D - Cylinder 5 Reactivation Performance - Trapped High Pressure Exhaust Charge	P3190 - Cylinder 8 Reactivation Performance - Trapped High Pressure Exhaust Charge	P3409 - Cylinder 2 Deactivation Solenoid Control Circuit Open	P3411 - Cylinder 2 Deactivation Solenoid Control Circuit Low	P3412 - Cylinder 2 Deactivation Solenoid Control Circuit High	P3417 - Cylinder 3 Deactivation Solenoid Control Circuit Open	P3419 - Cylinder 3 Deactivation Solenoid Control Circuit Low	P3420 - Cylinder 3 Deactivation Solenoid Control Circuit High	P3433 - Cylinder 5 Deactivation Solenoid Control Circuit Open	P3435 - Cylinder 5 Deactivation Solenoid Control Circuit Low	P3436 - Cylinder 5 Deactivation Solenoid Control Circuit High	P3457 - Cylinder 8 Deactivation Solenoid Control Circuit Open	P3459 - Cylinder 8 Deactivation Solenoid Control Circuit Low	P3460 - Cylinder 8 Deactivation Solenoid Control Circuit High	P3499 - Cylinder 2 Deactivation Performance	P349A - Cylinder 3 Deactivation Performance	P349C - Cylinder 5 Deactivation Performance	P349F - Cylinder 8 Deactivation Performance	U0607 - Lost Communication With Throttle Position Sensor Bank 1 Sensor 2	CONTINUED NEXT LINE
	U0688 - Lost Communication With Throttle Position Sensor Bank 2 Sensor 2	U136D - Invalid Data Received From Throttle Position Sensor 2	U136F - Invalid Data Received From Throttle Position Sensor Bank 2 Sensor 2	END																			
P0442 - Evaporative Emission System Small Leak Detected	P0071 - Ambient Air Temperature Sensor Performance	P0072 - Ambient Air Temperature Sensor Circuit Low	P0073 - Ambient Air Temperature Sensor Circuit High	P0074 - Ambient Air Temperature Sensor Circuit Intermittent	P0116 - Engine Coolant Temperature Sensor Performance	P0117 - Engine Coolant Temperature Sensor Circuit Low	P0118 - Engine Coolant Temperature Sensor Circuit High	P0119 - Engine Coolant Temperature Sensor Circuit Erratic	P0443 - Evaporative Emission Purge Solenoid Control Circuit Open	P0446 - Evaporative Emission Vent System Performance	P0449 - Evaporative Emission Vent Solenoid Control Circuit Open	P0451 - Fuel Tank Pressure Sensor Performance	P0452 - Fuel Tank Pressure Sensor Circuit Low	P0453 - Fuel Tank Pressure Sensor Circuit High	P0454 - Fuel Tank Pressure Sensor Circuit Intermittent	P0455 - Evaporative Emission System Large Leak Detected	P0458 - Evaporative Emission Purge Solenoid Control Circuit Low	P0459 - Evaporative Emission Purge Solenoid Control Circuit High	P0496 - Evaporative Emission System Flow During Non-Purge	P0497 - Evaporative Emission System No Flow During Purge	P0498 - Evaporative Emission Vent Solenoid Control Circuit Low	P0499 - Evaporative Emission Vent Solenoid Control Circuit High	CONTINUED NEXT LINE
	P04AB - Evaporative Emission Purge Solenoid Control Circuit Open Bank 2	P04AC - Evaporative Emission Purge Solenoid Control Circuit Low Bank 2	P04AD - Evaporative Emission Purge Solenoid Control Circuit High Bank 2	P04AE - Evaporative Emission Purge Solenoid Performance Bank 2	P04DF - Evaporative Emission Purge Solenoid Performance Bank 1	P1176 - Fuel Pump Driver Control Module 5V Reference 1 Circuit	U0073 - Control Module Communication High Speed CAN Bus Off	U0076 - Control Module Communication Powertrain Sensor CAN Bus Off	U131D - Invalid Data Received From Fuel Pump Driver Control Module	U18A2 - Lost Communication With Fuel Pump Driver Control Module	END												
P0443 - Evaporative Emission Purge Solenoid Control Circuit Open	END																						
P0446 - Evaporative Emission Vent System Performance	P0106 - Manifold Absolute Pressure Sensor Performance	P0107 - Manifold Absolute Pressure Sensor Circuit Low	P0108 - Manifold Absolute Pressure Sensor Circuit High	P0443 - Evaporative Emission Purge Solenoid Control Circuit Open	P0451 - Fuel Tank Pressure Sensor Performance	P0452 - Fuel Tank Pressure Sensor Circuit Low	P0453 - Fuel Tank Pressure Sensor Circuit High	P0454 - Fuel Tank Pressure Sensor Circuit Intermittent	P0458 - Evaporative Emission Purge Solenoid Control Circuit Low	P0459 - Evaporative Emission Purge Solenoid Control Circuit High	P04AB - Evaporative Emission Purge Solenoid Control Circuit Open Bank 2	P04AC - Evaporative Emission Purge Solenoid Control Circuit Low Bank 2	P04AD - Evaporative Emission Purge Solenoid Control Circuit High Bank 2	P0641 - Sensor Reference Voltage 1 Circuit Open	P0651 - Sensor Reference Voltage 2 Circuit Open	P0697 - Sensor Reference Voltage 3 Circuit Open	P06A3 - Sensor Reference Voltage 4 Circuit Open	P2227 - Barometric Pressure Sensor Performance Bank 1 Sensor 1	P2228 - Barometric Pressure Sensor Circuit Low Bank 1 Sensor 1	P2229 - Barometric Pressure Sensor Circuit High Bank 1 Sensor 1	CONTINUED NEXT LINE		
	P2A0B - Manifold Absolute Pressure Sensor Performance Bank 2	P2A0C - Manifold Absolute Pressure Sensor Circuit Low Bank 2	P2A0D - Manifold Absolute Pressure Sensor Circuit High Bank 2	END																			
P0449 - Evaporative Emission Vent Solenoid Control Circuit Open	END																						
P0451 - Fuel Tank Pressure Sensor Performance	P0106 - Manifold Absolute Pressure Sensor Performance	P0107 - Manifold Absolute Pressure Sensor Circuit Low	P0108 - Manifold Absolute Pressure Sensor Circuit High	P0443 - Evaporative Emission Purge Solenoid Control Circuit Open	P0446 - Evaporative Emission Vent System Performance	P0449 - Evaporative Emission Vent Solenoid Control Circuit Open	P0452 - Fuel Tank Pressure Sensor Circuit Low	P0453 - Fuel Tank Pressure Sensor Circuit High	P0458 - Evaporative Emission Purge Solenoid Control Circuit Low	P0459 - Evaporative Emission Purge Solenoid Control Circuit High	P0496 - Evaporative Emission System Flow During Non-Purge	P0497 - Evaporative Emission System No Flow During Purge	P0498 - Evaporative Emission Vent Solenoid Control Circuit Low	P0499 - Evaporative Emission Vent Solenoid Control Circuit High	P04AB - Evaporative Emission Purge Solenoid Control Circuit Open Bank 2	P04AC - Evaporative Emission Purge Solenoid Control Circuit Low Bank 2	P04AD - Evaporative Emission Purge Solenoid Control Circuit High Bank 2	P04AE - Evaporative Emission Purge Solenoid Performance Bank 2	P04DF - Evaporative Emission Purge Solenoid Performance Bank 1	P0641 - Sensor Reference Voltage 1 Circuit Open	P0651 - Sensor Reference Voltage 2 Circuit Open	P0697 - Sensor Reference Voltage 3 Circuit Open	CONTINUED NEXT LINE
	P06A3 - Sensor Reference Voltage 4 Circuit Open	P1176 - Fuel Pump Driver Control Module 5V Reference 1 Circuit	P2227 - Barometric Pressure Sensor Performance Bank 1 Sensor 1	P2228 - Barometric Pressure Sensor Circuit Low Bank 1 Sensor 1	P2229 - Barometric Pressure Sensor Circuit High Bank 1 Sensor 1	P2A0B - Manifold Absolute Pressure Sensor Performance Bank 2	P2A0C - Manifold Absolute Pressure Sensor Circuit Low Bank 2	P2A0D - Manifold Absolute Pressure Sensor Circuit High Bank 2	U0073 - Control Module Communication High Speed CAN Bus Off	U0076 - Control Module Communication Powertrain Sensor CAN Bus Off	U131D - Invalid Data Received From Fuel Pump Driver Control Module	U18A2 - Lost Communication With Fuel Pump Driver Control Module	END										
P0452 - Fuel Tank Pressure Sensor Circuit Low	END																						
P0453 - Fuel Tank Pressure Sensor Circuit High	END																						
P0454 - Fuel Tank Pressure Sensor Circuit Intermittent	P0106 - Manifold Absolute Pressure Sensor Performance	P0107 - Manifold Absolute Pressure Sensor Circuit Low	P0108 - Manifold Absolute Pressure Sensor Circuit High	P0443 - Evaporative Emission Purge Solenoid Control Circuit Open	P0449 - Evaporative Emission Vent Solenoid Control Circuit Open	P0452 - Fuel Tank Pressure Sensor Circuit Low	P0453 - Fuel Tank Pressure Sensor Circuit High	P0458 - Evaporative Emission Purge Solenoid Control Circuit Low	P0459 - Evaporative Emission Purge Solenoid Control Circuit High	P0496 - Evaporative Emission System Flow During Non-Purge	P0497 - Evaporative Emission System No Flow During Purge	P0498 - Evaporative Emission Vent Solenoid Control Circuit Low	P0499 - Evaporative Emission Vent Solenoid Control Circuit High	P04AB - Evaporative Emission Purge Solenoid Control Circuit Open Bank 2	P04AC - Evaporative Emission Purge Solenoid Control Circuit Low Bank 2	P04AD - Evaporative Emission Purge Solenoid Control Circuit High Bank 2	P04AE - Evaporative Emission Purge Solenoid Performance Bank 2	P04DF - Evaporative Emission Purge Solenoid Performance Bank 1	P0641 - Sensor Reference Voltage 1 Circuit Open	P0651 - Sensor Reference Voltage 2 Circuit Open	P0697 - Sensor Reference Voltage 3 Circuit Open	P06A3 - Sensor Reference Voltage 4 Circuit Open	CONTINUED NEXT LINE
	P1176 - Fuel Pump Driver Control Module 5V Reference 1 Circuit	P2227 - Barometric Pressure Sensor Performance Bank 1 Sensor 1	P2228 - Barometric Pressure Sensor Circuit Low Bank 1 Sensor 1	P2229 - Barometric Pressure Sensor Circuit High Bank 1 Sensor 1	P2A0B - Manifold Absolute Pressure Sensor Performance Bank 2	P2A0C - Manifold Absolute Pressure Sensor Circuit Low Bank 2	P2A0D - Manifold Absolute Pressure Sensor Circuit High Bank 2	U0073 - Control Module Communication High Speed CAN Bus Off	U0076 - Control Module Communication Powertrain Sensor CAN Bus Off	U131D - Invalid Data Received From Fuel Pump Driver Control Module	U18A2 - Lost Communication With Fuel Pump Driver Control Module	END											
P0455 - Evaporative Emission System Large Leak Detected	P0106 - Manifold Absolute Pressure Sensor Performance	P0107 - Manifold Absolute Pressure Sensor Circuit Low	P0108 - Manifold Absolute Pressure Sensor Circuit High	P0443 - Evaporative Emission Purge Solenoid Control Circuit Open	P0446 - Evaporative Emission Vent System Performance	P0451 - Fuel Tank Pressure Sensor Performance	P0452 - Fuel Tank Pressure Sensor Circuit Low	P0453 - Fuel Tank Pressure Sensor Circuit High	P0454 - Fuel Tank Pressure Sensor Circuit Intermittent	P0458 - Evaporative Emission Purge Solenoid Control Circuit Low	P0459 - Evaporative Emission Purge Solenoid Control Circuit High	P0496 - Evaporative Emission System Flow During Non-Purge	P0497 - Evaporative Emission System No Flow During Purge	P04AB - Evaporative Emission Purge Solenoid Control Circuit Open Bank 2	P04AC - Evaporative Emission Purge Solenoid Control Circuit Low Bank 2	P04AD - Evaporative Emission Purge Solenoid Control Circuit High Bank 2	P04DF - Evaporative Emission Purge Solenoid Performance Bank 1	P0641 - Sensor Reference Voltage 1 Circuit Open	P0651 - Sensor Reference Voltage 2 Circuit Open	P0697 - Sensor Reference Voltage 3 Circuit Open	P06A3 - Sensor Reference Voltage 4 Circuit Open	P2227 - Barometric Pressure Sensor Performance Bank 1 Sensor 1	CONTINUED NEXT LINE
	P2228 - Barometric Pressure Sensor Circuit Low Bank 1 Sensor 1	P2229 - Barometric Pressure Sensor Circuit High Bank 1 Sensor 1	P2A0B - Manifold Absolute Pressure Sensor Performance Bank 2	P2A0C - Manifold Absolute Pressure Sensor Circuit Low Bank 2	P2A0D - Manifold Absolute Pressure Sensor Circuit High Bank 2	END																	
P0458 - Evaporative Emission Purge Solenoid Control Circuit Low	END																						
P0459 - Evaporative Emission Purge Solenoid Control Circuit High	END																						
P0461 - Fuel Level Sensor Performance	P0462 - Fuel Level Sensor Circuit Low	P0463 - Fuel Level Sensor Circuit High	P1178 - Fuel Pump Driver Control Module Fuel Level Sensor 1 Internal Supply Circuit	P1179 - Fuel Pump Driver Control Module Fuel Level Sensor 2 Internal Supply Circuit	U131D - Invalid Data Received From Fuel Pump Driver Control Module	U18A2 - Lost Communication With Fuel Pump Driver Control Module	END																
P0462 - Fuel Level Sensor Circuit Low	P1178 - Fuel Pump Driver Control Module Fuel Level Sensor 1 Internal Supply Circuit	P1179 - Fuel Pump Driver Control Module Fuel Level Sensor 2 Internal Supply Circuit	U131D - Invalid Data Received From Fuel Pump Driver Control Module	U18A2 - Lost Communication With Fuel Pump Driver Control Module	END																		
P0463 - Fuel Level Sensor Circuit High	P1178 - Fuel Pump Driver Control Module Fuel Level Sensor 1 Internal Supply Circuit	P1179 - Fuel Pump Driver Control Module Fuel Level Sensor 2 Internal Supply Circuit	U131D - Invalid Data Received From Fuel Pump Driver Control Module	U18A2 - Lost Communication With Fuel Pump Driver Control Module	END																		
P0480 - Cooling Fan Relay 1 Control Circuit Open	END																						
P0496 - Evaporative Emission System Flow During Non-Purge	P0106 - Manifold Absolute Pressure Sensor Performance	P0107 - Manifold Absolute Pressure Sensor Circuit Low	P0108 - Manifold Absolute Pressure Sensor Circuit High	P0443 - Evaporative Emission Purge Solenoid Control Circuit Open	P0449 - Evaporative Emission Vent Solenoid Control Circuit Open	P0458 - Evaporative Emission Purge Solenoid Control Circuit Low	P0459 - Evaporative Emission Purge Solenoid Control Circuit High	P0498 - Evaporative Emission Vent Solenoid Control Circuit Low	P0499 - Evaporative Emission Vent Solenoid Control Circuit High	P04AB - Evaporative Emission Purge Solenoid Control Circuit Open Bank 2	P04AC - Evaporative Emission Purge Solenoid Control Circuit Low Bank 2	P04AD - Evaporative Emission Purge Solenoid Control Circuit High Bank 2	P0506 - Idle Speed Low	P0507 - Idle Speed High	P2227 - Barometric Pressure Sensor Performance Bank 1 Sensor 1	P2228 - Barometric Pressure Sensor Circuit Low Bank 1 Sensor 1	P2229 - Barometric Pressure Sensor Circuit High Bank 1 Sensor 1	P2A0B - Manifold Absolute Pressure Sensor Performance Bank 2	P2A0C - Manifold Absolute Pressure Sensor Circuit Low Bank 2	P2A0D - Manifold Absolute Pressure Sensor Circuit High Bank 2	END		
P0497 - Evaporative Emission System No Flow During Purge	P0106 - Manifold Absolute Pressure Sensor Performance	P0107 - Manifold Absolute Pressure Sensor Circuit Low	P0108 - Manifold Absolute Pressure Sensor Circuit High	P0443 - Evaporative Emission Purge Solenoid Control Circuit Open	P0449 - Evaporative Emission Vent Solenoid Control Circuit Open	P0458 - Evaporative Emission Purge Solenoid Control Circuit Low	P0459 - Evaporative Emission Purge Solenoid Control Circuit High	P0498 - Evaporative Emission Vent Solenoid Control Circuit Low	P0499 - Evaporative Emission Vent Solenoid Control Circuit High	P04AB - Evaporative Emission Purge Solenoid Control Circuit Open Bank 2	P04AC - Evaporative Emission Purge Solenoid Control Circuit Low Bank 2	P04AD - Evaporative Emission Purge Solenoid Control Circuit High Bank 2	P0506 - Idle Speed Low	P0507 - Idle Speed High	P2227 - Barometric Pressure Sensor Performance Bank 1 Sensor 1	P2228 - Barometric Pressure Sensor Circuit Low Bank 1 Sensor 1	P2229 - Barometric Pressure Sensor Circuit High Bank 1 Sensor 1	P2A0B - Manifold Absolute Pressure Sensor Performance Bank 2	P2A0C - Manifold Absolute Pressure Sensor Circuit Low Bank 2	P2A0D - Manifold Absolute Pressure Sensor Circuit High Bank 2	END		
P0498 - Evaporative Emission Vent Solenoid Control Circuit Low	END																						
P0499 - Evaporative Emission Vent Solenoid Control Circuit High	END																						
P04AB - Evaporative Emission Purge Solenoid Control Circuit Open Bank 2	END																						
P04AC - Evaporative Emission Purge Solenoid Control Circuit Low Bank 2	END																						

The DTCs in this column is inhibited by the DTCs listed to the right	The DTCs in these columns inhibit the DTC to the left						The DTCs in these columns inhibit the DTC to the left						The DTCs in these columns inhibit the DTC to the left						The DTCs in these columns inhibit the DTC to the left				
Inhibited DTC	Fault Active DTCs						Fault Active DTCs						Fault Active DTCs						Fault Active DTCs				
P04AD - Evaporative Emission Purge Solenoid Control Circuit High Bank 2	END																						
P04AE - Evaporative Emission Purge Solenoid Performance Bank 2	P0030 - Oxygen Sensor Heater Control Circuit Open Bank 1 Sensor 1	P0031 - Oxygen Sensor Heater Control Circuit Low Bank 1 Sensor 1	P0032 - Oxygen Sensor Heater Control Circuit High Bank 1 Sensor 1	P0050 - Oxygen Sensor Heater Control Circuit Open Bank 2 Sensor 1	P0051 - Oxygen Sensor Heater Control Circuit Low Bank 2 Sensor 1	P0052 - Oxygen Sensor Heater Control Circuit High Bank 2 Sensor 1	P0101 - Mass Air Flow Sensor Performance	P0102 - Mass Air Flow Sensor Circuit Low	P0103 - Mass Air Flow Sensor Circuit High	P0106 - Manifold Absolute Pressure Sensor Performance	P0107 - Manifold Absolute Pressure Sensor Circuit Low	P0108 - Manifold Absolute Pressure Sensor Circuit High	P010B - Mass Air Flow Sensor 2 Performance	P010C - Mass Air Flow Sensor 2 Circuit Low	P010D - Mass Air Flow Sensor 2 Circuit High	P0130 - HO2S Circuit Bank 1 Sensor 1	P0131 - Oxygen Sensor Circuit Low Bank 1 Sensor 1	P0132 - Oxygen Sensor Circuit High Bank 1 Sensor 1	P0133 - Oxygen Sensor Slow Response Bank 1 Sensor 1	P0150 - HO2S Circuit Bank 2 Sensor 1	P0151 - Oxygen Sensor Circuit Low Bank 2 Sensor 1	P0152 - Oxygen Sensor Circuit High Bank 2 Sensor 1	CONTINUED NEXT LINE
	P0153 - Oxygen Sensor Slow Response Bank 2 Sensor 1	P0443 - Evaporative Emission Purge Solenoid Control Circuit Open	P0458 - Evaporative Emission Purge Solenoid Control Circuit Low	P0459 - Evaporative Emission Purge Solenoid Control Circuit High	P04AB - Evaporative Emission Purge Solenoid Control Circuit Open Bank 2	P04AC - Evaporative Emission Purge Solenoid Control Circuit Low Bank 2	P04AD - Evaporative Emission Purge Solenoid Control Circuit High Bank 2	P0641 - Sensor Reference Voltage 1 Circuit Open	P064D - Control Module Oxygen Sensor Bank 1 Sensor 1 System Performance	P064E - Control Module Oxygen Sensor Bank 2 Sensor 1 System Performance	P0651 - Sensor Reference Voltage 2 Circuit Open	P0697 - Sensor Reference Voltage 3 Circuit Open	P06A3 - Sensor Reference Voltage 4 Circuit Open	P2096 - Post Catalyst Fuel Trim System Low Limit Bank 1	P2097 - Post Catalyst Fuel Trim System High Limit Bank 1	P2098 - Post Catalyst Fuel Trim System Low Limit Bank 2	P2099 - Post Catalyst Fuel Trim System High Limit Bank 2	P2195 - Oxygen Sensor Signal Biased Lean Bank 1 Sensor 1	P2196 - Oxygen Sensor Signal Biased Rich Bank 1 Sensor 1	P2197 - Oxygen Sensor Signal Biased Lean Bank 2 Sensor 1	P2198 - Oxygen Sensor Signal Biased Rich Bank 2 Sensor 1	P2227 - Barometric Pressure Sensor Performance Bank 1 Sensor 1	CONTINUED NEXT LINE
	P2228 - Barometric Pressure Sensor Circuit Low Bank 1 Sensor 1	P2229 - Barometric Pressure Sensor Circuit High Bank 1 Sensor 1	P2237 - Oxygen Sensor Pumping Current Control Circuit Open Bank 1 Sensor 1	P2240 - Oxygen Sensor Pumping Current Control Circuit Open Bank 2 Sensor 1	P2251 - Oxygen Sensor Low Reference Circuit Open Bank 1 Sensor 1	P2254 - Oxygen Sensor Low Reference Circuit Open Bank 2 Sensor 1	P2297 - Oxygen Sensor Out of Range During Deceleration Bank 1 Sensor 1	P2298 - Oxygen Sensor Out of Range During Deceleration Bank 2 Sensor 1	P2626 - Oxygen Sensor Pumping Current Trim Circuit Open Bank 1 Sensor 1	P2629 - Oxygen Sensor Pumping Current Trim Circuit Open Bank 2 Sensor 1	P2A0B - Manifold Absolute Pressure Sensor Performance Bank 2	P2A0C - Manifold Absolute Pressure Sensor Circuit Low Bank 2	P2A0D - Manifold Absolute Pressure Sensor Circuit High Bank 2	P30D8 - Control Module Processor Serial Peripheral Interface Bus 3	P30D9 - Control Module Processor Serial Peripheral Interface Bus 4	END							
P04DB - Crankcase Ventilation System Disconnected	P0071 - Ambient Air Temperature Sensor Performance	P0072 - Ambient Air Temperature Sensor Circuit Low	P0073 - Ambient Air Temperature Sensor Circuit High	P0074 - Ambient Air Temperature Sensor Circuit Intermittent	P0101 - Mass Air Flow Sensor Performance	P0102 - Mass Air Flow Sensor Circuit Low	P0103 - Mass Air Flow Sensor Circuit High	P010B - Mass Air Flow Sensor 2 Performance	P010C - Mass Air Flow Sensor 2 Circuit Low	P010D - Mass Air Flow Sensor 2 Circuit High	P0116 - Engine Coolant Temperature Sensor Performance	P0117 - Engine Coolant Temperature Sensor Circuit Low	P0118 - Engine Coolant Temperature Sensor Circuit High	P0119 - Engine Coolant Temperature Sensor Circuit Erratic	P0121 - Throttle Position Sensor Performance	P0122 - Throttle Position Sensor Circuit Low	P0123 - Throttle Position Sensor Circuit High	P0221 - Throttle Position Sensor 2 Performance	P0222 - Throttle Position Sensor 2 Circuit Low	P0223 - Throttle Position Sensor 2 Circuit High	P0226 - Throttle Position Sensor Performance Bank 2	P0227 - Throttle Position Sensor Circuit Low Bank 2	CONTINUED NEXT LINE
	P0228 - Throttle Position Sensor Circuit High Bank 2	P0236 - Turbocharger Boost Sensor Performance	P0237 - Turbocharger Boost Sensor Circuit Low	P0238 - Turbocharger Boost Sensor Circuit High	P0240 - Turbocharger Boost Sensor Performance Bank 2	P0241 - Turbocharger Boost Sensor Circuit Low Bank 2	P0242 - Turbocharger Boost Sensor Circuit High Bank 2	P0335 - Crankshaft Position Sensor Circuit	P0336 - Crankshaft Position Sensor Performance	P034A - Crankshaft Position Sensor Start Position Incorrect	P034B - Crankshaft Position Sensor Direction Incorrect	P051B - Crankcase Vapor Pressure Sensor Performance	P051C - Crankcase Vapor Pressure Sensor Circuit Low	P051D - Crankcase Vapor Pressure Sensor Circuit High	P0638 - Throttle Actuator Control Command Performance	P0639 - Throttle Actuator Control Command Performance Bank 2	P0641 - Sensor Reference Voltage 1 Circuit Open	P0651 - Sensor Reference Voltage 2 Circuit Open	P0697 - Sensor Reference Voltage 3 Circuit Open	P06A3 - Sensor Reference Voltage 4 Circuit Open	P1551 - Throttle Rest Position Not Reached During Learn	P2100 - Throttle Actuator Control Motor Control Circuit Open	CONTINUED NEXT LINE
	P2101 - Throttle Actuator Position Performance	P210A - Throttle Actuator Control Motor Control Circuit Open Bank 2	P210B - Throttle Actuator Position Performance Bank 2	P2119 - Throttle Closed Position Performance	P211D - Throttle Closed Position Performance Bank 2	P212B - Throttle Position Sensor 2 Performance Bank 2	P212C - Throttle Position Sensor 2 Circuit Low Bank 2	P212D - Throttle Position Sensor 2 Circuit High Bank 2	P2176 - Minimum Throttle Position Not Learned	P218A - Minimum Throttle Position Not Learned Bank 2	P2227 - Barometric Pressure Sensor Performance Bank 1 Sensor 1	P2228 - Barometric Pressure Sensor Circuit Low Bank 1 Sensor 1	P2229 - Barometric Pressure Sensor Circuit High Bank 1 Sensor 1	P30D6 - Control Module Processor Serial Peripheral Interface Bus 1	P30D7 - Control Module Processor Serial Peripheral Interface Bus 2	P30E3 - Closed Throttle Position Exceeded Maximum Learning Limit	P30E4 - Closed Throttle Position Exceeded Minimum Learning Limit	P30E5 - Closed Throttle Position Exceeded Maximum Learning Limit Bank 2	P30E6 - Closed Throttle Position Exceeded Minimum Learning Limit Bank 2	P30E7 - Throttle Rest Position Not Reached During Learn Bank 2	U0607 - Lost Communication With Throttle Position Sensor Bank 1 Sensor 2	U0688 - Lost Communication With Throttle Position Sensor Bank 2 Sensor 2	CONTINUED NEXT LINE
	U136D - Invalid Data Received From Throttle Position Sensor 2	U136F - Invalid Data Received From Throttle Position Sensor Bank 2 Sensor 2	END																				
P04DF - Evaporative Emission Purge Solenoid Performance Bank 1	P0030 - Oxygen Sensor Heater Control Circuit Open Bank 1 Sensor 1	P0031 - Oxygen Sensor Heater Control Circuit Low Bank 1 Sensor 1	P0032 - Oxygen Sensor Heater Control Circuit High Bank 1 Sensor 1	P0050 - Oxygen Sensor Heater Control Circuit Open Bank 2 Sensor 1	P0051 - Oxygen Sensor Heater Control Circuit Low Bank 2 Sensor 1	P0052 - Oxygen Sensor Heater Control Circuit High Bank 2 Sensor 1	P0101 - Mass Air Flow Sensor Performance	P0102 - Mass Air Flow Sensor Circuit Low	P0103 - Mass Air Flow Sensor Circuit High	P0106 - Manifold Absolute Pressure Sensor Performance	P0107 - Manifold Absolute Pressure Sensor Circuit Low	P0108 - Manifold Absolute Pressure Sensor Circuit High	P010B - Mass Air Flow Sensor 2 Performance	P010C - Mass Air Flow Sensor 2 Circuit Low	P010D - Mass Air Flow Sensor 2 Circuit High	P0116 - Engine Coolant Temperature Sensor Performance	P0117 - Engine Coolant Temperature Sensor Circuit Low	P0118 - Engine Coolant Temperature Sensor Circuit High	P0119 - Engine Coolant Temperature Sensor Circuit Erratic	P0130 - HO2S Circuit Bank 1 Sensor 1	P0131 - Oxygen Sensor Circuit Low Bank 1 Sensor 1	P0132 - Oxygen Sensor Circuit High Bank 1 Sensor 1	CONTINUED NEXT LINE
	P0133 - Oxygen Sensor Slow Response Bank 1 Sensor 1	P0150 - HO2S Circuit Bank 2 Sensor 1	P0151 - Oxygen Sensor Circuit Low Bank 2 Sensor 1	P0152 - Oxygen Sensor Circuit High Bank 2 Sensor 1	P0153 - Oxygen Sensor Slow Response Bank 2 Sensor 1	P0443 - Evaporative Emission Purge Solenoid Control Circuit Open	P0458 - Evaporative Emission Purge Solenoid Control Circuit Low	P0459 - Evaporative Emission Purge Solenoid Control Circuit High	P04AB - Evaporative Emission Purge Solenoid Control Circuit Open Bank 2	P04AC - Evaporative Emission Purge Solenoid Control Circuit Low Bank 2	P04AD - Evaporative Emission Purge Solenoid Control Circuit High Bank 2	P0641 - Sensor Reference Voltage 1 Circuit Open	P064D - Control Module Oxygen Sensor Bank 1 Sensor 1 System Performance	P064E - Control Module Oxygen Sensor Bank 2 Sensor 1 System Performance	P0651 - Sensor Reference Voltage 2 Circuit Open	P0697 - Sensor Reference Voltage 3 Circuit Open	P06A3 - Sensor Reference Voltage 4 Circuit Open	P2096 - Post Catalyst Fuel Trim System Low Limit Bank 1	P2097 - Post Catalyst Fuel Trim System High Limit Bank 1	P2098 - Post Catalyst Fuel Trim System Low Limit Bank 2	P2099 - Post Catalyst Fuel Trim System High Limit Bank 2	P2195 - Oxygen Sensor Signal Biased Lean Bank 1 Sensor 1	CONTINUED NEXT LINE
	P2196 - Oxygen Sensor Signal Biased Rich Bank 1 Sensor 1	P2197 - Oxygen Sensor Signal Biased Lean Bank 2 Sensor 1	P2198 - Oxygen Sensor Signal Biased Rich Bank 2 Sensor 1	P2227 - Barometric Pressure Sensor Performance Bank 1 Sensor 1	P2228 - Barometric Pressure Sensor Circuit Low Bank 1 Sensor 1	P2229 - Barometric Pressure Sensor Circuit High Bank 1 Sensor 1	P2237 - Oxygen Sensor Pumping Current Control Circuit Open Bank 1 Sensor 1	P2240 - Oxygen Sensor Pumping Current Control Circuit Open Bank 2 Sensor 1	P2251 - Oxygen Sensor Low Reference Circuit Open Bank 1 Sensor 1	P2254 - Oxygen Sensor Low Reference Circuit Open Bank 2 Sensor 1	P2297 - Oxygen Sensor Out of Range During Deceleration Bank 1 Sensor 1	P2298 - Oxygen Sensor Out of Range During Deceleration Bank 2 Sensor 1	P2626 - Oxygen Sensor Pumping Current Trim Circuit Open Bank 1 Sensor 1	P2629 - Oxygen Sensor Pumping Current Trim Circuit Open Bank 2 Sensor 1	P2A0B - Manifold Absolute Pressure Sensor Performance Bank 2	P2A0C - Manifold Absolute Pressure Sensor Circuit Low Bank 2	P2A0D - Manifold Absolute Pressure Sensor Circuit High Bank 2	P30D8 - Control Module Processor Serial Peripheral Interface Bus 3	P30D9 - Control Module Processor Serial Peripheral Interface Bus 4	END			
P0506 - Idle Speed Low	P0096 - Intake Air Temperature Sensor 2 Performance	P0097 - Intake Air Temperature Sensor 2 Circuit Low	P0098 - Intake Air Temperature Sensor 2 Circuit High	P0099 - Intake Air Temperature Sensor 2 Circuit Erratic	P00A6 - Intake Air Temperature Sensor 2 Performance Bank 2	P00A7 - Intake Air Temperature Sensor 2 Circuit Low Bank 2	P00A8 - Intake Air Temperature Sensor 2 Circuit High Bank 2	P00A9 - Intake Air Temperature Sensor 2 Circuit Erratic Bank 2	P0116 - Engine Coolant Temperature Sensor Performance	P0117 - Engine Coolant Temperature Sensor Circuit Low	P0118 - Engine Coolant Temperature Sensor Circuit High	P0119 - Engine Coolant Temperature Sensor Circuit Erratic	P0121 - Throttle Position Sensor Performance	P0122 - Throttle Position Sensor Circuit Low	P0123 - Throttle Position Sensor Circuit High	P0221 - Throttle Position Sensor 2 Performance	P0222 - Throttle Position Sensor 2 Circuit Low	P0223 - Throttle Position Sensor 2 Circuit High	P0226 - Throttle Position Sensor Performance Bank 2	P0227 - Throttle Position Sensor Circuit Low Bank 2	P0228 - Throttle Position Sensor Circuit High Bank 2	P0443 - Evaporative Emission Purge Solenoid Control Circuit Open	CONTINUED NEXT LINE
	P0458 - Evaporative Emission Purge Solenoid Control Circuit Low	P0459 - Evaporative Emission Purge Solenoid Control Circuit High	P04AB - Evaporative Emission Purge Solenoid Control Circuit Open Bank 2	P04AC - Evaporative Emission Purge Solenoid Control Circuit Low Bank 2	P04AD - Evaporative Emission Purge Solenoid Control Circuit High Bank 2	P0638 - Throttle Actuator Control Command Performance	P0639 - Throttle Actuator Control Command Performance Bank 2	P0641 - Sensor Reference Voltage 1 Circuit Open	P0651 - Sensor Reference Voltage 2 Circuit Open	P0697 - Sensor Reference Voltage 3 Circuit Open	P06A3 - Sensor Reference Voltage 4 Circuit Open	P1551 - Throttle Rest Position Not Reached During Learn	P2100 - Throttle Actuator Control Motor Control Circuit Open	P2101 - Throttle Actuator Position Performance	P210A - Throttle Actuator Control Motor Control Circuit Open Bank 2	P210B - Throttle Actuator Position Performance Bank 2	P212B - Throttle Position Sensor 2 Performance Bank 2	P212C - Throttle Position Sensor 2 Circuit Low Bank 2	P212D - Throttle Position Sensor 2 Circuit High Bank 2	P2176 - Minimum Throttle Position Not Learned	P218A - Minimum Throttle Position Not Learned Bank 2	P30D6 - Control Module Processor Serial Peripheral Interface Bus 1	CONTINUED NEXT LINE
	P30D7 - Control Module Processor Serial Peripheral Interface Bus 2	P30E3 - Closed Throttle Position Exceeded Maximum Learning Limit	P30E4 - Closed Throttle Position Exceeded Minimum Learning Limit	P30E5 - Closed Throttle Position Exceeded Maximum Learning Limit Bank 2	P30E6 - Closed Throttle Position Exceeded Minimum Learning Limit Bank 2	P30E7 - Throttle Rest Position Not Reached During Learn Bank 2	U0607 - Lost Communication With Throttle Position Sensor Bank 1 Sensor 2	U0688 - Lost Communication With Throttle Position Sensor Bank 2 Sensor 2	U136D - Invalid Data Received From Throttle Position Sensor 2	U136F - Invalid Data Received From Throttle Position Sensor Bank 2 Sensor 2	END												
P0507 - Idle Speed High	P0096 - Intake Air Temperature Sensor 2 Performance	P0097 - Intake Air Temperature Sensor 2 Circuit Low	P0098 - Intake Air Temperature Sensor 2 Circuit High	P0099 - Intake Air Temperature Sensor 2 Circuit Erratic	P00A6 - Intake Air Temperature Sensor 2 Performance Bank 2	P00A7 - Intake Air Temperature Sensor 2 Circuit Low Bank 2	P00A8 - Intake Air Temperature Sensor 2 Circuit High Bank 2	P00A9 - Intake Air Temperature Sensor 2 Circuit Erratic Bank 2	P0116 - Engine Coolant Temperature Sensor Performance	P0117 - Engine Coolant Temperature Sensor Circuit Low	P0118 - Engine Coolant Temperature Sensor Circuit High	P0119 - Engine Coolant Temperature Sensor Circuit Erratic	P0121 - Throttle Position Sensor Performance	P0122 - Throttle Position Sensor Circuit Low	P0123 - Throttle Position Sensor Circuit High	P0221 - Throttle Position Sensor 2 Performance	P0222 - Throttle Position Sensor 2 Circuit Low	P0223 - Throttle Position Sensor 2 Circuit High	P0226 - Throttle Position Sensor Performance Bank 2	P0227 - Throttle Position Sensor Circuit Low Bank 2	P0228 - Throttle Position Sensor Circuit High Bank 2	P0443 - Evaporative Emission Purge Solenoid Control Circuit Open	CONTINUED NEXT LINE
	P0458 - Evaporative Emission Purge Solenoid Control Circuit Low	P0459 - Evaporative Emission Purge Solenoid Control Circuit High	P04AB - Evaporative Emission Purge Solenoid Control Circuit Open Bank 2	P04AC - Evaporative Emission Purge Solenoid Control Circuit Low Bank 2	P04AD - Evaporative Emission Purge Solenoid Control Circuit High Bank 2	P0638 - Throttle Actuator Control Command Performance	P0639 - Throttle Actuator Control Command Performance Bank 2	P0641 - Sensor Reference Voltage 1 Circuit Open	P0651 - Sensor Reference Voltage 2 Circuit Open	P0697 - Sensor Reference Voltage 3 Circuit Open	P06A3 - Sensor Reference Voltage 4 Circuit Open	P1551 - Throttle Rest Position Not Reached During Learn	P2100 - Throttle Actuator Control Motor Control Circuit Open	P2101 - Throttle Actuator Position Performance	P210A - Throttle Actuator Control Motor Control Circuit Open Bank 2	P210B - Throttle Actuator Position Performance Bank 2	P212B - Throttle Position Sensor 2 Performance Bank 2	P212C - Throttle Position Sensor 2 Circuit Low Bank 2	P212D - Throttle Position Sensor 2 Circuit High Bank 2	P2176 - Minimum Throttle Position Not Learned	P218A - Minimum Throttle Position Not Learned Bank 2	P30D6 - Control Module Processor Serial Peripheral Interface Bus 1	CONTINUED NEXT LINE
	P30D7 - Control Module Processor Serial Peripheral Interface Bus 2	P30E3 - Closed Throttle Position Exceeded Maximum Learning Limit	P30E4 - Closed Throttle Position Exceeded Minimum Learning Limit	P30E5 - Closed Throttle Position Exceeded Maximum Learning Limit Bank 2	P30E6 - Closed Throttle Position Exceeded Minimum Learning Limit Bank 2	P30E7 - Throttle Rest Position Not Reached During Learn Bank 2	U0607 - Lost Communication With Throttle Position Sensor Bank 1 Sensor 2	U0688 - Lost Communication With Throttle Position Sensor Bank 2 Sensor 2	U136D - Invalid Data Received From Throttle Position Sensor 2	U136F - Invalid Data Received From Throttle Position Sensor Bank 2 Sensor 2	END												
P050A - Cold Start Idle Speed System	P0096 - Intake Air Temperature Sensor 2 Performance	P0097 - Intake Air Temperature Sensor 2 Circuit Low	P0098 - Intake Air Temperature Sensor 2 Circuit High	P0099 - Intake Air Temperature Sensor 2 Circuit Erratic	P00A6 - Intake Air Temperature Sensor 2 Performance Bank 2	P00A7 - Intake Air Temperature Sensor 2 Circuit Low Bank 2	P00A8 - Intake Air Temperature Sensor 2 Circuit High Bank 2	P00A9 - Intake Air Temperature Sensor 2 Circuit Erratic Bank 2	P0116 - Engine Coolant Temperature Sensor Performance	P0117 - Engine Coolant Temperature Sensor Circuit Low	P0118 - Engine Coolant Temperature Sensor Circuit High	P0119 - Engine Coolant Temperature Sensor Circuit Erratic	P0121 - Throttle Position Sensor Performance	P0122 - Throttle Position Sensor Circuit Low	P0123 - Throttle Position Sensor Circuit High	P0221 - Throttle Position Sensor 2 Performance	P0222 - Throttle Position Sensor 2 Circuit Low	P0223 - Throttle Position Sensor 2 Circuit High	P0226 - Throttle Position Sensor Performance Bank 2	P0227 - Throttle Position Sensor Circuit Low Bank 2	P0228 - Throttle Position Sensor Circuit High Bank 2	P0443 - Evaporative Emission Purge Solenoid Control Circuit Open	CONTINUED NEXT LINE
	P0458 - Evaporative Emission Purge Solenoid Control Circuit Low	P0459 - Evaporative Emission Purge Solenoid Control Circuit High	P04AB - Evaporative Emission Purge Solenoid Control Circuit Open Bank 2	P04AC - Evaporative Emission Purge Solenoid Control Circuit Low Bank 2	P04AD - Evaporative Emission Purge Solenoid Control Circuit High Bank 2	P0638 - Throttle Actuator Control Command Performance	P0639 - Throttle Actuator Control Command Performance Bank 2	P0641 - Sensor Reference Voltage 1 Circuit Open	P0651 - Sensor Reference Voltage 2 Circuit Open	P0697 - Sensor Reference Voltage 3 Circuit Open	P06A3 - Sensor Reference Voltage 4 Circuit Open	P1551 - Throttle Rest Position Not Reached During Learn	P2100 - Throttle Actuator Control Motor Control Circuit Open	P2101 - Throttle Actuator Position Performance	P210A - Throttle Actuator Control Motor Control Circuit Open Bank 2	P210B - Throttle Actuator Position Performance Bank 2	P212B - Throttle Position Sensor 2 Performance Bank 2	P212C - Throttle Position Sensor 2 Circuit Low Bank 2	P212D - Throttle Position Sensor 2 Circuit High Bank 2	P2176 - Minimum Throttle Position Not Learned	P218A - Minimum Throttle Position Not Learned Bank 2	P30D6 - Control Module Processor Serial Peripheral Interface Bus 1	CONTINUED NEXT LINE
	P30D7 - Control Module Processor Serial Peripheral Interface Bus 2	P30E3 - Closed Throttle Position Exceeded Maximum Learning Limit	P30E4 - Closed Throttle Position Exceeded Minimum Learning Limit	P30E5 - Closed Throttle Position Exceeded Maximum Learning Limit Bank 2	P30E6 - Closed Throttle Position Exceeded Minimum Learning Limit Bank 2	P30E7 - Throttle Rest Position Not Reached During Learn Bank 2	U0607 - Lost Communication With Throttle Position Sensor Bank 1 Sensor 2	U0688 - Lost Communication With Throttle Position Sensor Bank 2 Sensor 2	U136D - Invalid Data Received From Throttle Position Sensor 2	U136F - Invalid Data Received From Throttle Position Sensor Bank 2 Sensor 2	END												
P050B - Cold Start Ignition Timing System	P2227 - Barometric Pressure Sensor Performance Bank 1 Sensor 1	P2228 - Barometric Pressure Sensor Circuit Low Bank 1 Sensor 1	P2229 - Barometric Pressure Sensor Circuit High Bank 1 Sensor 1	END																			
P0513 - Theft Deterrent Key Incorrect	END																						
P051B - Crankcase Vapor Pressure Sensor Performance	P051C - Crankcase Vapor Pressure Sensor Circuit Low	P051D - Crankcase Vapor Pressure Sensor Circuit High	END																				
P051C - Crankcase Vapor Pressure Sensor Circuit Low	END																						
P051D - Crankcase Vapor Pressure Sensor Circuit High	END																						
P0521 - Engine Oil Pressure Sensor 1 Performance	P0522 - Engine Oil Pressure Sensor 1 Circuit Low	P0523 - Engine Oil Pressure Sensor 1 Circuit High	P2228 - Barometric Pressure Sensor Circuit Low Bank 1 Sensor 1	P2229 - Barometric Pressure Sensor Circuit High Bank 1 Sensor 1	END																		
P0522 - Engine Oil Pressure Sensor 1 Circuit Low	P0651 - Sensor Reference Voltage 2 Circuit Open	END																					
P0523 - Engine Oil Pressure Sensor 1 Circuit High	P0651 - Sensor Reference Voltage 2 Circuit Open	END																					
P0524 - Engine Oil Pressure Too Low	P0521 - Engine Oil Pressure Sensor 1 Performance	P0522 - Engine Oil Pressure Sensor 1 Circuit Low	P0651 - Sensor Reference Voltage 2 Circuit Open	END																			
P0532 - Air Conditioning Refrigerant Pressure Sensor Circuit Low	END																						
P0533 - Air Conditioning Refrigerant Pressure Sensor Circuit High	END																						
P053F - Cold Start Fuel Pressure Performance	P0090 - Fuel Pressure Regulator Control Circuit Open	P0191 - Fuel Rail Pressure Sensor Performance	P10E8 - Fuel Pressure Regulator High Control Circuit Shorted to Control Circuit	P2C02 - Fuel Pressure Regulator Control Circuit Open Bank 2	P313A - Fuel Pressure Regulator High Control Circuit Shorted to Control Circuit Bank 2	END																	
P0562 - System Voltage Low	END																						
P0563 - System Voltage High	END																						
P0564 - Cruise Control Multi-Function Switch 1 Circuit	U0140 - Lost Communication With Body Control Module	U0422 - Invalid Data Received From Body Control Module	END																				
P0565 - Cruise Control Switch Circuit	U0140 - Lost Communication With Body Control Module	U0422 - Invalid Data Received From Body Control Module	END																				
P0567 - Cruise Control Resume Switch 1 Circuit	U0140 - Lost Communication With Body Control Module	U0422 - Invalid Data Received From Body Control Module	END																				
P0568 - Cruise Control Set Switch 1 Circuit	U0140 - Lost Communication With Body Control Module	U0422 - Invalid Data Received From Body Control Module	END																				
P056C - Cruise Control Cancel Switch Circuit	U0140 - Lost Communication With Body Control Module	U0422 - Invalid Data Received From Body Control Module	END																				
P0572 - Brake Switch Circuit 1 Low	END																						
P0573 - Brake Switch Circuit 1 High	END																						
P057B - Brake Pedal Position Sensor Performance	P057B - Brake Pedal Position Sensor Performance	P057C - Brake Pedal Position Sensor Circuit Low	P057D - Brake Pedal Position Sensor Circuit High	END																			
P057C - Brake Pedal Position Sensor Circuit Low	END																						
P057D - Brake Pedal Position Sensor Circuit High	END																						
P0580 - Cruise Control Multi-Function Switch 1 Circuit Low	END																						
P0581 - Cruise Control Multi-Function Switch 1 Circuit High	U0140 - Lost Communication With Body Control Module	U0422 - Invalid Data Received From Body Control Module	END																				
P0589 - Cruise Control Multi-Function Switch 2 Circuit	END																						
P058A - Battery Sensor Module Performance	END																						

The DTCs in this column is inhibited by the DTCs listed to the right	The DTCs in these columns inhibit the DTC to the left						The DTCs in these columns inhibit the DTC to the left		The DTCs in these columns inhibit the DTC to the left	The DTCs in these columns inhibit the DTC to the left
Inhibited DTC	Fault Active DTCs						Fault Active DTCs		Fault Active DTCs	Fault Active DTCs
P058B - Battery Sensor Module Current Sensor Performance	END									
P058C - Battery Sensor Module Temperature Sensor Performance	END									
P058D - Battery Sensor Module Voltage Sensing Performance	END									
P058E - Battery Sensor Module Temperature High	END									
P058F - Battery Sensor Module Temperature Low	END									
P0592 - Cruise Control Multi-Function Switch 2 Circuit Low	END									
P0593 - Cruise Control Multi-Function Switch 2 Circuit High	END									
P05CC - Cold Start Intake Camshaft Position System Performance Bank 1	P05CC - Cold Start Intake Camshaft Position System Performance Bank 1	END								
P05CD - Cold Start Intake Camshaft Position System Performance Bank 2	P05CD - Cold Start Intake Camshaft Position System Performance Bank 2	END								
P05D1 - Driver Mode Select Switch Circuit Low	END									
P05D2 - Driver Mode Select Switch Circuit High	END									
P05D3 - Driver Mode Select Switch Performance	END									
P0602 - Control Module Not Programmed	END									
P0603 - Control Module Long Term Memory Reset	END									
P0604 - Control Module Random Access Memory	END									
P0606 - Control Module Internal Performance	END									
P0607 - Control Module Internal Performance	END									
P060A - Control Module Monitoring Processor Performance	END									
P060B - Control Module Analog to Digital Performance	END									
P060D - Control Module Accelerator Pedal Position System Performance	END									
P0615 - Starter Relay Control Circuit Open	END									
P0616 - Starter Relay Control Circuit Low	END									
P0617 - Starter Relay Control Circuit High	END									
P061C - Control Module Engine Speed Performance	END									
P0621 - Generator L-Terminal Circuit Open	END									
P0625 - Generator F-Terminal Circuit Low	END									
P0626 - Generator F-Terminal Circuit High	END									
P0627 - Fuel Pump Relay Control Circuit Open	END									
P0628 - Fuel Pump Relay Control Circuit Low	END									
P0629 - Fuel Pump Relay Control Circuit High	END									
P062B - Control Module Fuel Injector Control Performance	END									
P0630 - VIN Not Programmed or Mismatched - Engine Control Module	END									
P0633 - Theft Deterrent Key Not Programmed	END									
P0638 - Throttle Actuator Control Command Performance	END									
P0639 - Throttle Actuator Control Command Performance Bank 2	END									
P0641 - Sensor Reference Voltage 1 Circuit Open	END									
P0645 - Air Conditioning Clutch Relay Control Circuit Open	END									
P0646 - Air Conditioning Clutch Relay Control Circuit Low	END									
P0647 - Air Conditioning Clutch Relay Control Circuit High	END									
P064D - Control Module Oxygen Sensor Bank 1 Sensor 1 System Performance	P0130 - HO2S Circuit Bank 1 Sensor 1	P0131 - Oxygen Sensor Circuit Low Bank 1 Sensor 1	P0132 - Oxygen Sensor Circuit High Bank 1 Sensor 1	P2237 - Oxygen Sensor Pumping Current Control Circuit Open Bank 1 Sensor 1	P2251 - Oxygen Sensor Low Reference Circuit Open Bank 1 Sensor 1	P2626 - Oxygen Sensor Pumping Current Trim Circuit Open Bank 1 Sensor 1	P30D8 - Control Module Processor Serial Peripheral Interface Bus 3	END		
P064E - Control Module Oxygen Sensor Bank 2 Sensor 1 System Performance	P0150 - HO2S Circuit Bank 2 Sensor 1	P0151 - Oxygen Sensor Circuit Low Bank 2 Sensor 1	P0152 - Oxygen Sensor Circuit High Bank 2 Sensor 1	P2240 - Oxygen Sensor Pumping Current Control Circuit Open Bank 2 Sensor 1	P2254 - Oxygen Sensor Low Reference Circuit Open Bank 2 Sensor 1	P2629 - Oxygen Sensor Pumping Current Trim Circuit Open Bank 2 Sensor 1	P30D9 - Control Module Processor Serial Peripheral Interface Bus 4	END		
P0650 - Malfunction Indicator Lamp Control Circuit Open	END									
P0651 - Sensor Reference Voltage 2 Circuit Open	END									
P0689 - Engine Controls Ignition Relay Feedback Circuit Low	END									
P0690 - Engine Controls Ignition Relay Feedback Circuit High	END									
P0691 - Cooling Fan Relay 1 Control Circuit Low	END									
P0692 - Cooling Fan Relay 1 Control Circuit High	END									
P0697 - Sensor Reference Voltage 3 Circuit Open	END									

The DTCs in this column is inhibited by the DTCs listed to the right	The DTCs in these columns inhibit the DTC to the left						The DTCs in these columns inhibit the DTC to the left						The DTCs in these columns inhibit the DTC to the left						The DTCs in these columns inhibit the DTC to the left				
Inhibited DTC	Fault Active DTCs						Fault Active DTCs						Fault Active DTCs						Fault Active DTCs				
P06A3 - Sensor Reference Voltage 4 Circuit Open	END																						
P06AF - Torque Management System - Forced Engine Shutdown	END																						
P06B6 - Control Module Knock Sensor Processor 1 Performance	P0335 - Crankshaft Position Sensor Circuit	P0336 - Crankshaft Position Sensor Performance	P034A - Crankshaft Position Sensor Start Position Incorrect	P034B - Crankshaft Position Sensor Direction Incorrect	P0651 - Sensor Reference Voltage 2 Circuit Open	END																	
P06D1 - Control Module Ignition Coil Internal Circuit	END																						
P06DA - Engine Oil Pressure Control Circuit Open	END																						
P06DB - Engine Oil Pressure Control Circuit Low	END																						
P06DC - Engine Oil Pressure Control Circuit High	END																						
P06DD - Engine Oil Pressure Control Performance	P0335 - Crankshaft Position Sensor Circuit	P0336 - Crankshaft Position Sensor Performance	P034A - Crankshaft Position Sensor Start Position Incorrect	P034B - Crankshaft Position Sensor Direction Incorrect	P0521 - Engine Oil Pressure Sensor 1 Performance	P0524 - Engine Oil Pressure Too Low	P06DD - Engine Oil Pressure Control Performance	P2227 - Barometric Pressure Sensor Performance Bank 1 Sensor 1	P2228 - Barometric Pressure Sensor Circuit Low Bank 1 Sensor 1	P2229 - Barometric Pressure Sensor Circuit High Bank 1 Sensor 1	END												
P06E9 - Starter Performance	END																						
P0700 - Transmission Control Module Requested Malfunction Indicator Lamp Illumination	END																						
P073D - Unable to Engage Neutral	END																						
P073E - Unable to Engage Reverse	END																						
P07B3 - Transmission Range Selector Park Position Switch 1 Circuit Low	END																						
P07B4 - Transmission Range Selector Park Position Switch 1 Circuit High	END																						
P07B5 - Transmission Range Selector Park Position Switch 1 Performance	END																						
P07B9 - Transmission Range Selector Park Position Switch 2 Circuit Low	END																						
P07BA - Transmission Range Selector Park Position Switch 2 Circuit High	END																						
P07BB - Transmission Range Selector Park Position Switch 2 Circuit Performance	END																						
P07BE - Transmission Range Selector Park Position Switch 1/2 Correlation	END																						
P07E4 - Unable to Engage Park	END																						
P07E5 - Unable to Engage Drive	END																						
P082A - Transmission Range Selector X-Axis Position Sensor 1 Performance	END																						
P082B - Transmission Range Selector X-Axis Position Sensor 1 Circuit Low	END																						
P082C - Transmission Range Selector X-Axis Position Sensor 1 Circuit High	END																						
P082D - Transmission Range Selector Y-Axis Position Sensor 1 Performance	END																						
P082E - Transmission Range Selector Y-Axis Position Sensor 1 Circuit Low	END																						
P082F - Transmission Range Selector Y-Axis Position Sensor 1 Circuit High	END																						
P089B - Transmission Range Selector X-Axis Position Sensor 2 Performance	END																						
P089C - Transmission Range Selector X-Axis Position Sensor 2 Circuit Low	END																						
P089D - Transmission Range Selector X-Axis Position Sensor 2 Circuit High	END																						
P08A0 - Transmission Range Selector Y-Axis Position Sensor 2 Performance	END																						
P08A1 - Transmission Range Selector Y-Axis Position Sensor 2 Circuit Low	END																						
P08A2 - Transmission Range Selector Y-Axis Position Sensor 2 Circuit High	END																						
P1002 - Fuel Pump Driver Control Module System Voltage Performance	END																						
P1005 - Fuel Pump Driver Control Module Too Many Resets	END																						
P1007 - Fuel Pump Driver Control Module Ignition On/Start Switch Circuit High	END																						
P100C - Battery Sensor Module Temperature Erratic	END																						
P100D - Battery Sensor Module Internal Temperature Circuit Erratic	END																						
P1011 - Camshaft Position Actuator Park Position	P000A - Camshaft Position System Slow Response Bank 1	P000C - Intake Camshaft Position System Slow Response Bank 2	P0010 - Camshaft Position Actuator Control Circuit Open	P0011 - Camshaft Position System Performance	P0016 - Crankshaft to Camshaft Correlation	P0017 - Crankshaft to Exhaust Camshaft Correlation Bank 1	P0018 - Crankshaft to Intake Camshaft Correlation Bank 2	P0019 - Crankshaft to Exhaust Camshaft Correlation Bank 2	P0021 - Intake Camshaft Position System Performance Bank 2	P0335 - Crankshaft Position Sensor Circuit	P0336 - Crankshaft Position Sensor Performance	P0341 - Camshaft Position Sensor Performance	P0342 - Camshaft Position Sensor Circuit Low	P0343 - Camshaft Position Sensor Circuit High	P0346 - Intake Camshaft Position Sensor Performance Bank 2	P0347 - Intake Camshaft Position Sensor Circuit Low Bank 2	P0348 - Intake Camshaft Position Sensor Circuit High Bank 2	P034A - Crankshaft Position Sensor Start Position Incorrect	P034B - Crankshaft Position Sensor Direction Incorrect	P0641 - Sensor Reference Voltage 1 Circuit Open	P2088 - Camshaft Position Actuator Control Circuit Low	P2089 - Camshaft Position Actuator Control Circuit High	END
P1012 - Exhaust Camshaft Position Actuator Park Position Bank 1	P000B - Exhaust Camshaft Position System Slow Response Bank 1	P000D - Exhaust Camshaft Position System Slow Response Bank 2	P0013 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 1	P0014 - Exhaust Camshaft Position System Performance Bank 1	P0016 - Crankshaft to Camshaft Correlation	P0017 - Crankshaft to Exhaust Camshaft Correlation Bank 1	P0018 - Crankshaft to Intake Camshaft Correlation Bank 2	P0019 - Crankshaft to Exhaust Camshaft Correlation Bank 2	P0024 - Exhaust Camshaft Position System Performance Bank 2	P0335 - Crankshaft Position Sensor Circuit	P0336 - Crankshaft Position Sensor Performance	P034A - Crankshaft Position Sensor Start Position Incorrect	P034B - Crankshaft Position Sensor Direction Incorrect	P0366 - Exhaust Camshaft Position Sensor Performance Bank 1	P0367 - Exhaust Camshaft Position Sensor Circuit Low Bank 1	P0368 - Exhaust Camshaft Position Sensor Circuit High Bank 1	P0391 - Exhaust Camshaft Position Sensor Performance Bank 2	P0392 - Exhaust Camshaft Position Sensor Circuit Low Bank 2	P0393 - Exhaust Camshaft Position Sensor Circuit High Bank 2	P0641 - Sensor Reference Voltage 1 Circuit Open	P2090 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 1	P2091 - Exhaust Camshaft Position Actuator Control Circuit High Bank 1	END
P1013 - Intake Camshaft Position Actuator Park Position Bank 2	P000A - Camshaft Position System Slow Response Bank 1	P000C - Intake Camshaft Position System Slow Response Bank 2	P0011 - Camshaft Position System Performance	P0016 - Crankshaft to Camshaft Correlation	P0017 - Crankshaft to Exhaust Camshaft Correlation Bank 1	P0018 - Crankshaft to Intake Camshaft Correlation Bank 2	P0019 - Crankshaft to Exhaust Camshaft Correlation Bank 2	P0020 - Intake Camshaft Position Actuator Control Circuit Open Bank 2	P0021 - Intake Camshaft Position System Performance Bank 2	P0335 - Crankshaft Position Sensor Circuit	P0336 - Crankshaft Position Sensor Performance	P0341 - Camshaft Position Sensor Performance	P0342 - Camshaft Position Sensor Circuit Low	P0343 - Camshaft Position Sensor Circuit High	P0346 - Intake Camshaft Position Sensor Performance Bank 2	P0347 - Intake Camshaft Position Sensor Circuit Low Bank 2	P0348 - Intake Camshaft Position Sensor Circuit High Bank 2	P034A - Crankshaft Position Sensor Start Position Incorrect	P034B - Crankshaft Position Sensor Direction Incorrect	P0641 - Sensor Reference Voltage 1 Circuit Open	P2092 - Intake Camshaft Position Actuator Control Circuit Low Bank 2	P2093 - Intake Camshaft Position Actuator Control Circuit High Bank 2	END
P1014 - Exhaust Camshaft Position Actuator Park Position Bank 2	P000B - Exhaust Camshaft Position System Slow Response Bank 1	P000D - Exhaust Camshaft Position System Slow Response Bank 2	P0013 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 1	P0014 - Exhaust Camshaft Position System Performance Bank 1	P0016 - Crankshaft to Camshaft Correlation	P0017 - Crankshaft to Exhaust Camshaft Correlation Bank 1	P0018 - Crankshaft to Intake Camshaft Correlation Bank 2	P0019 - Crankshaft to Exhaust Camshaft Correlation Bank 2	P0024 - Exhaust Camshaft Position System Performance Bank 2	P0335 - Crankshaft Position Sensor Circuit	P0336 - Crankshaft Position Sensor Performance	P034A - Crankshaft Position Sensor Start Position Incorrect	P034B - Crankshaft Position Sensor Direction Incorrect	P0366 - Exhaust Camshaft Position Sensor Performance Bank 1	P0367 - Exhaust Camshaft Position Sensor Circuit Low Bank 1	P0368 - Exhaust Camshaft Position Sensor Circuit High Bank 1	P0391 - Exhaust Camshaft Position Sensor Performance Bank 2	P0392 - Exhaust Camshaft Position Sensor Circuit Low Bank 2	P0393 - Exhaust Camshaft Position Sensor Circuit High Bank 2	P0641 - Sensor Reference Voltage 1 Circuit Open	P2090 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 1	P2091 - Exhaust Camshaft Position Actuator Control Circuit High Bank 1	END
P1029 - Fuel Pump Phase U-V-W Circuits Open	END																						
P102A - Fuel Pump Phase U-V-W Circuits Low	END																						
P102B - Fuel Pump Phase U-V-W Circuits High	END																						
P102C - Fuel Pump Phase U-V-W Circuits Shorted	END																						
P1038 - Turbocharger A Wastegate Actuator Supply Voltage Circuit Low	END																						
P103A - Turbocharger A Wastegate Control Circuit Shorted	END																						

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Inhibited DTC	Fault Active DTCs						Fault Active DTCs					Fault Active DTCs	Fault Active DTCs
P10A3 - Cylinder 1 Injection Pulse Offset Exceeded Minimum Learning Limit	END												
P10A4 - Cylinder 1 Injection Pulse Offset Exceeded Maximum Learning Limit	END												
P10A5 - Cylinder 2 Injection Pulse Offset Exceeded Minimum Learning Limit	END												
P10A6 - Cylinder 2 Injection Pulse Offset Exceeded Maximum Learning Limit	END												
P10A7 - Cylinder 3 Injection Pulse Offset Exceeded Minimum Learning Limit	END												
P10A8 - Cylinder 3 Injection Pulse Offset Exceeded Maximum Learning Limit	END												
P10A9 - Cylinder 4 Injection Pulse Offset Exceeded Minimum Learning Limit	END												
P10AA - Cylinder 4 Injection Pulse Offset Exceeded Maximum Learning Limit	END												
P10AB - Cylinder 5 Injection Pulse Offset Exceeded Minimum Learning Limit	END												
P10AC - Cylinder 5 Injection Pulse Offset Exceeded Maximum Learning Limit	END												
P10AD - Cylinder 6 Injection Pulse Offset Exceeded Minimum Learning Limit	END												
P10AE - Cylinder 6 Injection Pulse Offset Exceeded Maximum Learning Limit	END												
P10AF - Cylinder 7 Injection Pulse Offset Exceeded Minimum Learning Limit	END												
P10B0 - Cylinder 7 Injection Pulse Offset Exceeded Maximum Learning Limit	END												
P10B1 - Cylinder 8 Injection Pulse Offset Exceeded Minimum Learning Limit	END												
P10B2 - Cylinder 8 Injection Pulse Offset Exceeded Maximum Learning Limit	END												
P10BD - Turbocharger B Wastegate Actuator Supply Voltage Circuit Low	END												
P10BE - Turbocharger B Wastegate Control Circuit Shorted	END												
P10E8 - Fuel Pressure Regulator High Control Circuit Shorted to Control Circuit	END												
P1176 - Fuel Pump Driver Control Module 5V Reference 1 Circuit	END												
P1177 - Fuel Pump Driver Control Module 5V Reference 2 Circuit	END												
P1178 - Fuel Pump Driver Control Module Fuel Level Sensor 1 Internal Supply Circuit	END												
P1179 - Fuel Pump Driver Control Module Fuel Level Sensor 2 Internal Supply Circuit	END												
P1248 - Fuel Injector 1 High Control Circuit Shorted to Control Circuit	END												
P1249 - Fuel Injector 2 High Control Circuit Shorted to Control Circuit	END												
P124A - Fuel Injector 3 High Control Circuit Shorted to Control Circuit	END												
P124B - Fuel Injector 4 High Control Circuit Shorted to Control Circuit	END												
P124C - Fuel Injector 5 High Control Circuit Shorted to Control Circuit	END												
P124D - Fuel Injector 6 High Control Circuit Shorted to Control Circuit	END												
P124E - Fuel Injector 7 High Control Circuit Shorted to Control Circuit	END												
P124F - Fuel Injector 8 High Control Circuit Shorted to Control Circuit	END												
P1255 - Fuel Pump Control Module Driver High Temperature	END												
P128A - Fuel Rail Pressure Sensor Internal Performance Bank 1 Sensor 1	P0651 - Sensor Reference Voltage 2 Circuit Open	END											
P128B - Fuel Rail Pressure Sensor Internal Performance Bank 1 Sensor 2	P0651 - Sensor Reference Voltage 2 Circuit Open	END											
P129B - Fuel Pump Driver Control Module System Voltage Low	END												
P129C - Fuel Pump Driver Control Module System Voltage High	END												
P129D - Fuel Pump Driver Control Module Ignition On/Start Switch Circuit Low	END												
P129F - Fuel Pump Driver Control Module Fuel Pump Speed Signal Incorrect	P0627 - Fuel Pump Relay Control Circuit Open	P0628 - Fuel Pump Relay Control Circuit Low	P0629 - Fuel Pump Relay Control Circuit High	P1029 - Fuel Pump Phase U-V-W Circuits Open	P102A - Fuel Pump Phase U-V W Circuits Low	P102B - Fuel Pump Phase U-V-W Circuits High	P102C - Fuel Pump Phase U-V W Circuits Shorted	P1255 - Fuel Pump Control Module Driver High Temperature	END				
P12A6 - Fuel Pump Driver Control Module Enable Circuit Performance	P0627 - Fuel Pump Relay Control Circuit Open	P0628 - Fuel Pump Relay Control Circuit Low	P0629 - Fuel Pump Relay Control Circuit High	P1029 - Fuel Pump Phase U-V-W Circuits Open	P102A - Fuel Pump Phase U-V W Circuits Low	P102B - Fuel Pump Phase U-V-W Circuits High	P102C - Fuel Pump Phase U-V W Circuits Shorted	P1255 - Fuel Pump Control Module Driver High Temperature	END				
P135A - Ignition Coil Supply Voltage Circuit Bank 1	END												
P135B - Ignition Coil Supply Voltage Circuit Bank 2	END												
P138B - Brake Pedal Position Sensor "A" Exceeded Learning Limit	END												
P1434 - Fuel Level Sensor 1 Reference Feedback Performance	END												
P143E - Fuel Level Sensor 2 Reference Feedback Performance	END												
P1551 - Throttle Rest Position Not Reached During Learn	P0121 - Throttle Position Sensor Performance	P0122 - Throttle Position Sensor Circuit Low	P0123 - Throttle Position Sensor Circuit High	P0221 - Throttle Position Sensor 2 Performance	P0222 - Throttle Position Sensor 2 Circuit Low	P0223 - Throttle Position Sensor 2 Circuit High	P0638 - Throttle Actuator Control Command Performance	P2100 - Throttle Actuator Control Motor Control Circuit Open	P2101 - Throttle Actuator Position Performance	P30D6 - Control Module Processor Serial Peripheral Interface Bus 1	END		
P155A - Cruise Control Switch State Undetermined	U0140 - Lost Communication With Body Control Module	U0422 - Invalid Data Received From Body Control Module	END										
P155B - Cruise Control Set Switch 2 Circuit	END												
P155C - Cruise Control Resume Switch 2 Circuit	END												

19 OBDG07 ECM DTC Inhibit Tables

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Inhibited DTC	Fault Active DTCs						Fault Active DTCs	Fault Active DTCs	Fault Active DTCs
P1589 - Cruise Control Lane Center Switch Circuit	END								
P1631 - Theft Deterrent Fuel Enable Signal Not Correct	END								
P1649 - Theft Deterrent Security Code Not Programmed	END								
P16D4 - Battery Sensor Module Voltage Sensing Circuit Low	END								
P16D5 - Battery Sensor Module Voltage Sensing Circuit High	END								
P16D6 - Battery Sensor Module Current Sensor Low	END								
P16D7 - Sensor Supply Voltage Relay Control Circuit Open	END								
P16D8 - Sensor Supply Voltage Relay Control Circuit Low	END								
P16D9 - Sensor Supply Voltage Relay Control Circuit High	END								
P16DD - Battery Sensor Module Current Sensor High	END								
P16DE - Battery Sensor Module Internal Temperature Circuit Low	END								
P16DF - Battery Sensor Module Internal Temperature Circuit High	END								
P16E1 - Battery Sensor Module Random Access Memory	END								
P16E2 - Battery Sensor Module Read Only Memory	END								
P16E3 - Battery Sensor Module Calibration Incorrect	END								
P16F3 - Control Module Redundant Memory Performance	END								
P16F4 - Internal Control Module Transmission Range Control Performance	END								
P1787 - Unexpected Range Change Detected	END								
P1789 - Current Transmission Range Unknown	END								
P17A3 - Transmission Range Selector Shift Interlock Switch 1 Circuit Low	END								
P17A4 - Transmission Range Selector Shift Interlock Switch 1 Circuit High	END								
P17A5 - Transmission Range Selector Shift Interlock Switch 1 Performance	END								
P17A6 - Transmission Range Selector Shift Interlock Switch 1/2 Correlation	END								
P17A7 - Transmission Range Selector Shift Interlock Switch 2 Circuit Low	END								
P17A8 - Transmission Range Selector Shift Interlock Switch 2 Circuit High	END								
P17A9 - Transmission Range Selector Shift Interlock Switch 2 Performance	END								
P17D8 - Transmission Range Selector Control Module Memory Checksum Error	END								
P17D9 - Transmission Range Selector Control Module Read Only Memory (ROM) Error	END								
P17DA - Transmission Range Selector Control Module Internal Random Access Memory (RAM) Error	END								
P17DB - Transmission Range Selector Control Module Processor	END								
P17DC - Transmission Range Selector Control Module Keep Alive Memory (KAM) Performance	END								
P17DD - Transmission Range Selector Control Module System Voltage Low	END								
P17DE - Transmission Range Selector Control Module System Voltage High	END								
P17DF - Transmission Range Selector Control Module System Voltage Performance	END								
P17E0 - Transmission Range Selector Control Module Ignition On/Start Switch Circuit Low	END								
P17E1 - Transmission Range Selector Control Module Ignition On/Start Switch Circuit High	END								
P17E2 - Transmission Range Selector Control Module Ignition Accessory Circuit Low	END								
P17F3 - Transmission Range Selector Park Position Switch 1/2 Stuck On	END								
P17F4 - Transmission Range Selector Shift Interlock Switch 1/2 Stuck On	END								
P189D - Transmission Range Selector Park Position Switch 1/2 Stuck Off	END								
P2066 - Fuel Level Sensor 2 Performance	P1178 - Fuel Pump Driver Control Module Fuel Level Sensor 1 Internal Supply Circuit	P1179 - Fuel Pump Driver Control Module Fuel Level Sensor 2 Internal Supply Circuit	P2067 - Fuel Level Sensor 2 Circuit Low	P2068 - Fuel Level Sensor 2 Circuit High	U131D - Invalid Data Received From Fuel Pump Driver Control Module	U18A2 - Lost Communication With Fuel Pump Driver Control Module	END		
P2067 - Fuel Level Sensor 2 Circuit Low	P1178 - Fuel Pump Driver Control Module Fuel Level Sensor 1 Internal Supply Circuit	P1179 - Fuel Pump Driver Control Module Fuel Level Sensor 2 Internal Supply Circuit	U131D - Invalid Data Received From Fuel Pump Driver Control Module	U18A2 - Lost Communication With Fuel Pump Driver Control Module	END				
P2068 - Fuel Level Sensor 2 Circuit High	P1178 - Fuel Pump Driver Control Module Fuel Level Sensor 1 Internal Supply Circuit	P1179 - Fuel Pump Driver Control Module Fuel Level Sensor 2 Internal Supply Circuit	U131D - Invalid Data Received From Fuel Pump Driver Control Module	U18A2 - Lost Communication With Fuel Pump Driver Control Module	END				
P2088 - Camshaft Position Actuator Control Circuit Low	P0010 - Camshaft Position Actuator Control Circuit Open	P2088 - Camshaft Position Actuator Control Circuit Low	P2089 - Camshaft Position Actuator Control Circuit High	END					
P2089 - Camshaft Position Actuator Control Circuit High	P0010 - Camshaft Position Actuator Control Circuit Open	P2088 - Camshaft Position Actuator Control Circuit Low	P2089 - Camshaft Position Actuator Control Circuit High	END					
P2090 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 1	P0013 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 1	P2090 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 1	P2091 - Exhaust Camshaft Position Actuator Control Circuit High Bank 1	END					
P2091 - Exhaust Camshaft Position Actuator Control Circuit High Bank 1	P0013 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 1	P2090 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 1	P2091 - Exhaust Camshaft Position Actuator Control Circuit High Bank 1	END					
P2092 - Intake Camshaft Position Actuator Control Circuit Low Bank 2	P0020 - Intake Camshaft Position Actuator Control Circuit Open Bank 2	P2092 - Intake Camshaft Position Actuator Control Circuit Low Bank 2	P2093 - Intake Camshaft Position Actuator Control Circuit High Bank 2	END					

19 OBDG07 ECM DTC Inhibit Tables

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Inhibited DTC	Fault Active DTCs						Fault Active DTCs						Fault Active DTCs						Fault Active DTCs				
P2093 - Intake Camshaft Position Actuator Control Circuit High Bank 2	P0020 - Intake Camshaft Position Actuator Control Circuit Open Bank 2	P2092 - Intake Camshaft Position Actuator Control Circuit Low Bank 2	P2093 - Intake Camshaft Position Actuator Control Circuit High Bank 2	END																			
P2094 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 2	P0023 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 2	P2094 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 2	P2095 - Exhaust Camshaft Position Actuator Control Circuit High Bank 2	END																			
P2095 - Exhaust Camshaft Position Actuator Control Circuit High Bank 2	P0023 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 2	P2094 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 2	P2095 - Exhaust Camshaft Position Actuator Control Circuit High Bank 2	END																			
P2096 - Post Catalyst Fuel Trim System Low Limit Bank 1	P0030 - Oxygen Sensor Heater Control Circuit Open Bank 1 Sensor 1	P0031 - Oxygen Sensor Heater Control Circuit Low Bank 1 Sensor 1	P0032 - Oxygen Sensor Heater Control Circuit High Bank 1 Sensor 1	P0036 - Oxygen Sensor Heater Control Circuit Open Bank 1 Sensor 2	P0037 - Oxygen Sensor Heater Control Circuit Low Bank 1 Sensor 2	P0038 - Oxygen Sensor Heater Control Circuit High Bank 1 Sensor 2	P0101 - Mass Air Flow Sensor Performance	P0102 - Mass Air Flow Sensor Circuit Low	P0103 - Mass Air Flow Sensor Circuit High	P0106 - Manifold Absolute Pressure Sensor Performance	P0107 - Manifold Absolute Pressure Sensor Circuit Low	P0108 - Manifold Absolute Pressure Sensor Circuit High	P010B - Mass Air Flow Sensor 2 Performance	P010C - Mass Air Flow Sensor 2 Circuit Low	P010D - Mass Air Flow Sensor 2 Circuit High	P0130 - HO2S Circuit Bank 1 Sensor 1	P0131 - Oxygen Sensor Circuit Low Bank 1 Sensor 1	P0132 - Oxygen Sensor Circuit High Bank 1 Sensor 1	P0133 - Oxygen Sensor Slow Response Bank 1 Sensor 1	P0137 - Oxygen Sensor Circuit Low Bank 1 Sensor 2	P0138 - Oxygen Sensor Circuit High Bank 1 Sensor 2	P0140 - Oxygen Sensor Circuit Insufficient Activity Bank 1 Sensor 2	CONTINUED NEXT LINE
	P0141 - Oxygen Sensor Heater Performance Bank 1 Sensor 2	P0300 - Engine Misfire Detected	P0301 - Cylinder 1 Misfire Detected	P0302 - Cylinder 2 Misfire Detected	P0303 - Cylinder 3 Misfire Detected	P0304 - Cylinder 4 Misfire Detected	P0305 - Cylinder 5 Misfire Detected	P0306 - Cylinder 6 Misfire Detected	P0307 - Cylinder 7 Misfire Detected	P0308 - Cylinder 8 Misfire Detected	P0443 - Evaporative Emission Purge Solenoid Control Circuit Open	P0458 - Evaporative Emission Purge Solenoid Control Circuit Low	P0459 - Evaporative Emission Purge Solenoid Control Circuit High	P0496 - Evaporative Emission System Flow During Non-Purge	P0497 - Evaporative Emission System No Flow During Purge	P04AB - Evaporative Emission Purge Solenoid Control Circuit Open Bank 2	P04AC - Evaporative Emission Purge Solenoid Control Circuit Low Bank 2	P04AD - Evaporative Emission Purge Solenoid Control Circuit High Bank 2	P04AE - Evaporative Emission Purge Solenoid Performance Bank 2	P04DF - Evaporative Emission Purge Solenoid Performance Bank 1	P0641 - Sensor Reference Voltage 1 Circuit Open	P064D - Control Module Oxygen Sensor Bank 1 Sensor 1 System Performance	CONTINUED NEXT LINE
	P0651 - Sensor Reference Voltage 2 Circuit Open	P0697 - Sensor Reference Voltage 3 Circuit Open	P06A3 - Sensor Reference Voltage 4 Circuit Open	P2232 - Oxygen Sensor Signal Circuit Shorted to Heater Circuit Bank 1 Sensor 2	P2237 - Oxygen Sensor Pumping Current Control Circuit Open Bank 1 Sensor 1	P2251 - Oxygen Sensor Low Reference Circuit Open Bank 1 Sensor 1	P2270 - Oxygen Sensor Signal Stuck Lean Bank 1 Sensor 2	P2271 - Oxygen Sensor Signal Stuck Rich Bank 1 Sensor 2	P2297 - Oxygen Sensor Out of Range During Deceleration Bank 1 Sensor 1	P2626 - Oxygen Sensor Pumping Current Trim Circuit Open Bank 1 Sensor 1	P2A0B - Manifold Absolute Pressure Sensor Performance Bank 2	P2A0C - Manifold Absolute Pressure Sensor Circuit Low Bank 2	P2A0D - Manifold Absolute Pressure Sensor Circuit High Bank 2	P30D8 - Control Module Processor Serial Peripheral Interface Bus 3	P318A - Cylinder 2 Reactivation Performance - Trapped High Pressure Exhaust Charge	P318B - Cylinder 3 Reactivation Performance - Trapped High Pressure Exhaust Charge	P318D - Cylinder 5 Reactivation Performance - Trapped High Pressure Exhaust Charge	P3190 - Cylinder 8 Reactivation Performance - Trapped High Pressure Exhaust Charge	P3409 - Cylinder 2 Deactivation Solenoid Control Circuit Open	P3411 - Cylinder 2 Deactivation Solenoid Control Circuit Low	P3412 - Cylinder 2 Deactivation Solenoid Control Circuit High	P3417 - Cylinder 3 Deactivation Solenoid Control Circuit Open	CONTINUED NEXT LINE
	P3419 - Cylinder 3 Deactivation Solenoid Control Circuit Low	P3420 - Cylinder 3 Deactivation Solenoid Control Circuit High	P3433 - Cylinder 5 Deactivation Solenoid Control Circuit Open	P3435 - Cylinder 5 Deactivation Solenoid Control Circuit Low	P3436 - Cylinder 5 Deactivation Solenoid Control Circuit High	P3457 - Cylinder 8 Deactivation Solenoid Control Circuit Open	P3459 - Cylinder 8 Deactivation Solenoid Control Circuit Low	P3460 - Cylinder 8 Deactivation Solenoid Control Circuit High	P3499 - Cylinder 2 Deactivation Performance	P349A - Cylinder 3 Deactivation Performance	P349C - Cylinder 5 Deactivation Performance	P349F - Cylinder 8 Deactivation Performance	END										
P2097 - Post Catalyst Fuel Trim System High Limit Bank 1	P0030 - Oxygen Sensor Heater Control Circuit Open Bank 1 Sensor 1	P0031 - Oxygen Sensor Heater Control Circuit Low Bank 1 Sensor 1	P0032 - Oxygen Sensor Heater Control Circuit High Bank 1 Sensor 1	P0036 - Oxygen Sensor Heater Control Circuit Open Bank 1 Sensor 2	P0037 - Oxygen Sensor Heater Control Circuit Low Bank 1 Sensor 2	P0038 - Oxygen Sensor Heater Control Circuit High Bank 1 Sensor 2	P0101 - Mass Air Flow Sensor Performance	P0102 - Mass Air Flow Sensor Circuit Low	P0103 - Mass Air Flow Sensor Circuit High	P0106 - Manifold Absolute Pressure Sensor Performance	P0107 - Manifold Absolute Pressure Sensor Circuit Low	P0108 - Manifold Absolute Pressure Sensor Circuit High	P010B - Mass Air Flow Sensor 2 Performance	P010C - Mass Air Flow Sensor 2 Circuit Low	P010D - Mass Air Flow Sensor 2 Circuit High	P0130 - HO2S Circuit Bank 1 Sensor 1	P0131 - Oxygen Sensor Circuit Low Bank 1 Sensor 1	P0132 - Oxygen Sensor Circuit High Bank 1 Sensor 1	P0133 - Oxygen Sensor Slow Response Bank 1 Sensor 1	P0137 - Oxygen Sensor Circuit Low Bank 1 Sensor 2	P0138 - Oxygen Sensor Circuit High Bank 1 Sensor 2	P0140 - Oxygen Sensor Circuit Insufficient Activity Bank 1 Sensor 2	CONTINUED NEXT LINE
	P0141 - Oxygen Sensor Heater Performance Bank 1 Sensor 2	P0300 - Engine Misfire Detected	P0301 - Cylinder 1 Misfire Detected	P0302 - Cylinder 2 Misfire Detected	P0303 - Cylinder 3 Misfire Detected	P0304 - Cylinder 4 Misfire Detected	P0305 - Cylinder 5 Misfire Detected	P0306 - Cylinder 6 Misfire Detected	P0307 - Cylinder 7 Misfire Detected	P0308 - Cylinder 8 Misfire Detected	P0443 - Evaporative Emission Purge Solenoid Control Circuit Open	P0458 - Evaporative Emission Purge Solenoid Control Circuit Low	P0459 - Evaporative Emission Purge Solenoid Control Circuit High	P0496 - Evaporative Emission System Flow During Non-Purge	P0497 - Evaporative Emission System No Flow During Purge	P04AB - Evaporative Emission Purge Solenoid Control Circuit Open Bank 2	P04AC - Evaporative Emission Purge Solenoid Control Circuit Low Bank 2	P04AD - Evaporative Emission Purge Solenoid Control Circuit High Bank 2	P04AE - Evaporative Emission Purge Solenoid Performance Bank 2	P04DF - Evaporative Emission Purge Solenoid Performance Bank 1	P0641 - Sensor Reference Voltage 1 Circuit Open	P064D - Control Module Oxygen Sensor Bank 1 Sensor 1 System Performance	CONTINUED NEXT LINE
	P0651 - Sensor Reference Voltage 2 Circuit Open	P0697 - Sensor Reference Voltage 3 Circuit Open	P06A3 - Sensor Reference Voltage 4 Circuit Open	P2232 - Oxygen Sensor Signal Circuit Shorted to Heater Circuit Bank 1 Sensor 2	P2237 - Oxygen Sensor Pumping Current Control Circuit Open Bank 1 Sensor 1	P2251 - Oxygen Sensor Low Reference Circuit Open Bank 1 Sensor 1	P2270 - Oxygen Sensor Signal Stuck Lean Bank 1 Sensor 2	P2271 - Oxygen Sensor Signal Stuck Rich Bank 1 Sensor 2	P2297 - Oxygen Sensor Out of Range During Deceleration Bank 1 Sensor 1	P2626 - Oxygen Sensor Pumping Current Trim Circuit Open Bank 1 Sensor 1	P2A0B - Manifold Absolute Pressure Sensor Performance Bank 2	P2A0C - Manifold Absolute Pressure Sensor Circuit Low Bank 2	P2A0D - Manifold Absolute Pressure Sensor Circuit High Bank 2	P30D8 - Control Module Processor Serial Peripheral Interface Bus 3	P318A - Cylinder 2 Reactivation Performance - Trapped High Pressure Exhaust Charge	P318B - Cylinder 3 Reactivation Performance - Trapped High Pressure Exhaust Charge	P318D - Cylinder 5 Reactivation Performance - Trapped High Pressure Exhaust Charge	P3190 - Cylinder 8 Reactivation Performance - Trapped High Pressure Exhaust Charge	P3409 - Cylinder 2 Deactivation Solenoid Control Circuit Open	P3411 - Cylinder 2 Deactivation Solenoid Control Circuit Low	P3412 - Cylinder 2 Deactivation Solenoid Control Circuit High	P3417 - Cylinder 3 Deactivation Solenoid Control Circuit Open	CONTINUED NEXT LINE
	P3419 - Cylinder 3 Deactivation Solenoid Control Circuit Low	P3420 - Cylinder 3 Deactivation Solenoid Control Circuit High	P3433 - Cylinder 5 Deactivation Solenoid Control Circuit Open	P3435 - Cylinder 5 Deactivation Solenoid Control Circuit Low	P3436 - Cylinder 5 Deactivation Solenoid Control Circuit High	P3457 - Cylinder 8 Deactivation Solenoid Control Circuit Open	P3459 - Cylinder 8 Deactivation Solenoid Control Circuit Low	P3460 - Cylinder 8 Deactivation Solenoid Control Circuit High	P3499 - Cylinder 2 Deactivation Performance	P349A - Cylinder 3 Deactivation Performance	P349C - Cylinder 5 Deactivation Performance	P349F - Cylinder 8 Deactivation Performance	END										
P2098 - Post Catalyst Fuel Trim System Low Limit Bank 2	P0050 - Oxygen Sensor Heater Control Circuit Open Bank 2 Sensor 1	P0051 - Oxygen Sensor Heater Control Circuit Low Bank 2 Sensor 1	P0052 - Oxygen Sensor Heater Control Circuit High Bank 2 Sensor 1	P0056 - Oxygen Sensor Heater Control Circuit Open Bank 2 Sensor 2	P0057 - Oxygen Sensor Heater Control Circuit Low Bank 2 Sensor 2	P0058 - Oxygen Sensor Heater Control Circuit High Bank 2 Sensor 2	P0101 - Mass Air Flow Sensor Performance	P0102 - Mass Air Flow Sensor Circuit Low	P0103 - Mass Air Flow Sensor Circuit High	P0106 - Manifold Absolute Pressure Sensor Performance	P0107 - Manifold Absolute Pressure Sensor Circuit Low	P0108 - Manifold Absolute Pressure Sensor Circuit High	P010B - Mass Air Flow Sensor 2 Performance	P010C - Mass Air Flow Sensor 2 Circuit Low	P010D - Mass Air Flow Sensor 2 Circuit High	P0150 - HO2S Circuit Bank 2 Sensor 1	P0151 - Oxygen Sensor Circuit Low Bank 2 Sensor 1	P0152 - Oxygen Sensor Circuit High Bank 2 Sensor 1	P0153 - Oxygen Sensor Slow Response Bank 2 Sensor 1	P0157 - Oxygen Sensor Circuit Low Bank 2 Sensor 2	P0158 - Oxygen Sensor Circuit High Bank 2 Sensor 2	P0160 - Oxygen Sensor Circuit Insufficient Activity Bank 2 Sensor 2	CONTINUED NEXT LINE
	P0161 - Oxygen Sensor Heater Performance Bank 2 Sensor 2	P0300 - Engine Misfire Detected	P0301 - Cylinder 1 Misfire Detected	P0302 - Cylinder 2 Misfire Detected	P0303 - Cylinder 3 Misfire Detected	P0304 - Cylinder 4 Misfire Detected	P0305 - Cylinder 5 Misfire Detected	P0306 - Cylinder 6 Misfire Detected	P0307 - Cylinder 7 Misfire Detected	P0308 - Cylinder 8 Misfire Detected	P0443 - Evaporative Emission Purge Solenoid Control Circuit Open	P0458 - Evaporative Emission Purge Solenoid Control Circuit Low	P0459 - Evaporative Emission Purge Solenoid Control Circuit High	P0496 - Evaporative Emission System Flow During Non-Purge	P0497 - Evaporative Emission System No Flow During Purge	P04AB - Evaporative Emission Purge Solenoid Control Circuit Open Bank 2	P04AC - Evaporative Emission Purge Solenoid Control Circuit Low Bank 2	P04AD - Evaporative Emission Purge Solenoid Control Circuit High Bank 2	P04AE - Evaporative Emission Purge Solenoid Performance Bank 2	P04DF - Evaporative Emission Purge Solenoid Performance Bank 1	P0641 - Sensor Reference Voltage 1 Circuit Open	P064E - Control Module Oxygen Sensor Bank 2 Sensor 1 System Performance	CONTINUED NEXT LINE
	P0651 - Sensor Reference Voltage 2 Circuit Open	P0697 - Sensor Reference Voltage 3 Circuit Open	P06A3 - Sensor Reference Voltage 4 Circuit Open	P2235 - Oxygen Sensor Signal Circuit Shorted to Heater Circuit Bank 2 Sensor 2	P2240 - Oxygen Sensor Pumping Current Control Circuit Open Bank 2 Sensor 1	P2254 - Oxygen Sensor Low Reference Circuit Open Bank 2 Sensor 1	P2272 - Oxygen Sensor Signal Stuck Lean Bank 2 Sensor 2	P2273 - Oxygen Sensor Signal Stuck Rich Bank 2 Sensor 2	P2298 - Oxygen Sensor Out of Range During Deceleration Bank 2 Sensor 1	P2629 - Oxygen Sensor Pumping Current Trim Circuit Open Bank 2 Sensor 1	P2A0B - Manifold Absolute Pressure Sensor Performance Bank 2	P2A0C - Manifold Absolute Pressure Sensor Circuit Low Bank 2	P2A0D - Manifold Absolute Pressure Sensor Circuit High Bank 2	P30D9 - Control Module Processor Serial Peripheral Interface Bus 4	P318A - Cylinder 2 Reactivation Performance - Trapped High Pressure Exhaust Charge	P318B - Cylinder 3 Reactivation Performance - Trapped High Pressure Exhaust Charge	P318D - Cylinder 5 Reactivation Performance - Trapped High Pressure Exhaust Charge	P3190 - Cylinder 8 Reactivation Performance - Trapped High Pressure Exhaust Charge	P3409 - Cylinder 2 Deactivation Solenoid Control Circuit Open	P3411 - Cylinder 2 Deactivation Solenoid Control Circuit Low	P3412 - Cylinder 2 Deactivation Solenoid Control Circuit High	P3417 - Cylinder 3 Deactivation Solenoid Control Circuit Open	CONTINUED NEXT LINE
	P3419 - Cylinder 3 Deactivation Solenoid Control Circuit Low	P3420 - Cylinder 3 Deactivation Solenoid Control Circuit High	P3433 - Cylinder 5 Deactivation Solenoid Control Circuit Open	P3435 - Cylinder 5 Deactivation Solenoid Control Circuit Low	P3436 - Cylinder 5 Deactivation Solenoid Control Circuit High	P3457 - Cylinder 8 Deactivation Solenoid Control Circuit Open	P3459 - Cylinder 8 Deactivation Solenoid Control Circuit Low	P3460 - Cylinder 8 Deactivation Solenoid Control Circuit High	P3499 - Cylinder 2 Deactivation Performance	P349A - Cylinder 3 Deactivation Performance	P349C - Cylinder 5 Deactivation Performance	P349F - Cylinder 8 Deactivation Performance	END										
P2099 - Post Catalyst Fuel Trim System High Limit Bank 2	P0050 - Oxygen Sensor Heater Control Circuit Open Bank 2 Sensor 1	P0051 - Oxygen Sensor Heater Control Circuit Low Bank 2 Sensor 1	P0052 - Oxygen Sensor Heater Control Circuit High Bank 2 Sensor 1	P0056 - Oxygen Sensor Heater Control Circuit Open Bank 2 Sensor 2	P0057 - Oxygen Sensor Heater Control Circuit Low Bank 2 Sensor 2	P0058 - Oxygen Sensor Heater Control Circuit High Bank 2 Sensor 2	P0101 - Mass Air Flow Sensor Performance	P0102 - Mass Air Flow Sensor Circuit Low	P0103 - Mass Air Flow Sensor Circuit High	P0106 - Manifold Absolute Pressure Sensor Performance	P0107 - Manifold Absolute Pressure Sensor Circuit Low	P0108 - Manifold Absolute Pressure Sensor Circuit High	P010B - Mass Air Flow Sensor 2 Performance	P010C - Mass Air Flow Sensor 2 Circuit Low	P010D - Mass Air Flow Sensor 2 Circuit High	P0150 - HO2S Circuit Bank 2 Sensor 1	P0151 - Oxygen Sensor Circuit Low Bank 2 Sensor 1	P0152 - Oxygen Sensor Circuit High Bank 2 Sensor 1	P0153 - Oxygen Sensor Slow Response Bank 2 Sensor 1	P0157 - Oxygen Sensor Circuit Low Bank 2 Sensor 2	P0158 - Oxygen Sensor Circuit High Bank 2 Sensor 2	P0160 - Oxygen Sensor Circuit Insufficient Activity Bank 2 Sensor 2	CONTINUED NEXT LINE
	P0161 - Oxygen Sensor Heater Performance Bank 2 Sensor 2	P0300 - Engine Misfire Detected	P0301 - Cylinder 1 Misfire Detected	P0302 - Cylinder 2 Misfire Detected	P0303 - Cylinder 3 Misfire Detected	P0304 - Cylinder 4 Misfire Detected	P0305 - Cylinder 5 Misfire Detected	P0306 - Cylinder 6 Misfire Detected	P0307 - Cylinder 7 Misfire Detected	P0308 - Cylinder 8 Misfire Detected	P0443 - Evaporative Emission Purge Solenoid Control Circuit Open	P0458 - Evaporative Emission Purge Solenoid Control Circuit Low	P0459 - Evaporative Emission Purge Solenoid Control Circuit High	P0496 - Evaporative Emission System Flow During Non-Purge	P0497 - Evaporative Emission System No Flow During Purge	P04AB - Evaporative Emission Purge Solenoid Control Circuit Open Bank 2	P04AC - Evaporative Emission Purge Solenoid Control Circuit Low Bank 2	P04AD - Evaporative Emission Purge Solenoid Control Circuit High Bank 2	P04AE - Evaporative Emission Purge Solenoid Performance Bank 2	P04DF - Evaporative Emission Purge Solenoid Performance Bank 1	P0641 - Sensor Reference Voltage 1 Circuit Open	P064E - Control Module Oxygen Sensor Bank 2 Sensor 1 System Performance	CONTINUED NEXT LINE
	P0651 - Sensor Reference Voltage 2 Circuit Open	P0697 - Sensor Reference Voltage 3 Circuit Open	P06A3 - Sensor Reference Voltage 4 Circuit Open	P2235 - Oxygen Sensor Signal Circuit Shorted to Heater Circuit Bank 2 Sensor 2	P2240 - Oxygen Sensor Pumping Current Control Circuit Open Bank 2 Sensor 1	P2254 - Oxygen Sensor Low Reference Circuit Open Bank 2 Sensor 1	P2272 - Oxygen Sensor Signal Stuck Lean Bank 2 Sensor 2	P2273 - Oxygen Sensor Signal Stuck Rich Bank 2 Sensor 2	P2298 - Oxygen Sensor Out of Range During Deceleration Bank 2 Sensor 1	P2629 - Oxygen Sensor Pumping Current Trim Circuit Open Bank 2 Sensor 1	P2A0B - Manifold Absolute Pressure Sensor Performance Bank 2	P2A0C - Manifold Absolute Pressure Sensor Circuit Low Bank 2	P2A0D - Manifold Absolute Pressure Sensor Circuit High Bank 2	P30D9 - Control Module Processor Serial Peripheral Interface Bus 4	P318A - Cylinder 2 Reactivation Performance - Trapped High Pressure Exhaust Charge	P318B - Cylinder 3 Reactivation Performance - Trapped High Pressure Exhaust Charge	P318D - Cylinder 5 Reactivation Performance - Trapped High Pressure Exhaust Charge	P3190 - Cylinder 8 Reactivation Performance - Trapped High Pressure Exhaust Charge	P3409 - Cylinder 2 Deactivation Solenoid Control Circuit Open	P3411 - Cylinder 2 Deactivation Solenoid Control Circuit Low	P3412 - Cylinder 2 Deactivation Solenoid Control Circuit High	P3417 - Cylinder 3 Deactivation Solenoid Control Circuit Open	CONTINUED NEXT LINE
	P3419 - Cylinder 3 Deactivation Solenoid Control Circuit Low	P3420 - Cylinder 3 Deactivation Solenoid Control Circuit High	P3433 - Cylinder 5 Deactivation Solenoid Control Circuit Open	P3435 - Cylinder 5 Deactivation Solenoid Control Circuit Low	P3436 - Cylinder 5 Deactivation Solenoid Control Circuit High	P3457 - Cylinder 8 Deactivation Solenoid Control Circuit Open	P3459 - Cylinder 8 Deactivation Solenoid Control Circuit Low	P3460 - Cylinder 8 Deactivation Solenoid Control Circuit High	P3499 - Cylinder 2 Deactivation Performance	P349A - Cylinder 3 Deactivation Performance	P349C - Cylinder 5 Deactivation Performance	P349F - Cylinder 8 Deactivation Performance	END										
P2100 - Throttle Actuator Control Motor Control Circuit Open	END																						
P2101 - Throttle Actuator Position Performance	END																						
P210A - Throttle Actuator Control Motor Control Circuit Open Bank 2	END																						
P210B - Throttle Actuator Position Performance Bank 2	END																						
P2119 - Throttle Closed Position Performance	P0121 - Throttle Position Sensor Performance	P0122 - Throttle Position Sensor Circuit Low	P0123 - Throttle Position Sensor Circuit High	P0221 - Throttle Position Sensor 2 Performance	P0222 - Throttle Position Sensor 2 Circuit Low	P0223 - Throttle Position Sensor 2 Circuit High	P0638 - Throttle Actuator Control Command Performance	P2100 - Throttle Actuator Control Motor Control Circuit Open	P2101 - Throttle Actuator Position Performance	P30D6 - Control Module Processor Serial Peripheral Interface Bus 1	END												
P211D - Throttle Closed Position Performance Bank 2	P0226 - Throttle Position Sensor Performance Bank 2	P0227 - Throttle Position Sensor Circuit Low Bank 2	P0228 - Throttle Position Sensor Circuit High Bank 2	P0639 - Throttle Actuator Control Command Performance Bank 2	P210A - Throttle Actuator Control Motor Control Circuit Open Bank 2	P210B - Throttle Actuator Position Performance Bank 2	P212B - Throttle Position Sensor 2 Performance Bank 2	P212C - Throttle Position Sensor 2 Circuit Low Bank 2	P212D - Throttle Position Sensor 2 Circuit High Bank 2	P30D7 - Control Module Processor Serial Peripheral Interface Bus 2	END												
P2122 - Accelerator Pedal Position Sensor 1 Circuit Low	P06A3 - Sensor Reference Voltage 4 Circuit Open	END																					
P2123 - Accelerator Pedal Position Sensor 1 Circuit High	P06A3 - Sensor Reference Voltage 4 Circuit Open	END																					
P2127 - Accelerator Pedal Position Sensor 2 Circuit Low	P0697 - Sensor Reference Voltage 3 Circuit Open	END																					
P2128 - Accelerator Pedal Position Sensor 2 Circuit High	P0697 - Sensor Reference Voltage 3 Circuit Open	END																					
P212B - Throttle Position Sensor 2 Performance Bank 2	P0697 - Sensor Reference Voltage 3 Circuit Open	END																					
P212C - Throttle Position Sensor 2 Circuit Low Bank 2	P0697 - Sensor Reference Voltage 3 Circuit Open	END																					
P212D - Throttle Position Sensor 2 Circuit High Bank 2	P0697 - Sensor Reference Voltage 3 Circuit Open	END																					
P2138 - Accelerator Pedal Position Sensor 1-2 Correlation	END																						
P2146 - Fuel Injector High Control Circuit 1 Open	END																						
P2149 - Fuel Injector High Control Circuit 2 Open	END																						
P2152 - Fuel Injector High Control Circuit 3 Open	END																						
P2155 - Fuel Injector High Control Circuit 4 Open	END																						
P216A - Fuel Injector High Control Circuit 5 Open	END																						
P216D - Fuel Injector High Control Circuit 6 Open	END																						
P2176 - Minimum Throttle Position Not Learned	P0121 - Throttle Position Sensor Performance	P0122 - Throttle Position Sensor Circuit Low	P0123 - Throttle Position Sensor Circuit High	P0221 - Throttle Position Sensor 2 Performance	P0222 - Throttle Position Sensor 2 Circuit Low	P0223 - Throttle Position Sensor 2 Circuit High	P0638 - Throttle Actuator Control Command Performance	P2100 - Throttle Actuator Control Motor Control Circuit Open	P2101 - Throttle Actuator Position Performance	P30D6 - Control Module Processor Serial Peripheral Interface Bus 1	END												
P2177 - Fuel Trim System Lean Off Idle Bank 1	P000A - Camshaft Position System Slow Response Bank 1	P000B - Exhaust Camshaft Position System Slow Response Bank 1	P000C - Intake Camshaft Position System Slow Response Bank 2	P000D - Exhaust Camshaft Position System Slow Response Bank 2	P0010 - Camshaft Position Actuator Control Circuit Open	P0011 - Camshaft Position System Performance	P0013 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 1	P0014 - Exhaust Camshaft Position System Performance Bank 1	P0016 - Crankshaft to Camshaft Correlation	P0017 - Crankshaft to Exhaust Camshaft Correlation Bank 1	P0018 - Crankshaft to Intake Camshaft Correlation Bank 2	P0019 - Crankshaft to Exhaust Camshaft Correlation Bank 2	P0020 - Intake Camshaft Position Actuator Control Circuit Open Bank 2	P0021 - Intake Camshaft Position System Performance Bank 2	P0023 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 2	P0024 - Exhaust Camshaft Position System Performance Bank 2	P0030 - Oxygen Sensor Heater Control Circuit Open Bank 1 Sensor 1	P0031 - Oxygen Sensor Heater Control Circuit Low Bank 1 Sensor 1	P0032 - Oxygen Sensor Heater Control Circuit High Bank 1 Sensor 1	P0050 - Oxygen Sensor Heater Control Circuit Open Bank 2 Sensor 1	P0051 - Oxygen Sensor Heater Control Circuit Low Bank 2 Sensor 1	P0052 - Oxygen Sensor Heater Control Circuit High Bank 2 Sensor 1	CONTINUED NEXT LINE
	P0096 - Intake Air Temperature Sensor 2 Performance	P0097 - Intake Air Temperature Sensor 2 Circuit Low	P0098 - Intake Air Temperature Sensor 2 Circuit High	P0099 - Intake Air Temperature Sensor 2 Circuit Erratic	P00A6 - Intake Air Temperature Sensor 2 Performance Bank 2	P00A7 - Intake Air Temperature Sensor 2 Circuit Low Bank 2	P00A8 - Intake Air Temperature Sensor 2 Circuit High Bank 2	P00A9 - Intake Air Temperature Sensor 2 Circuit Erratic Bank 2	P0116 - Engine Coolant Temperature Sensor Performance	P0117 - Engine Coolant Temperature Sensor Circuit Low	P0118 - Engine Coolant Temperature Sensor Circuit High	P0119 - Engine Coolant Temperature Sensor Circuit Erratic	P0121 - Throttle Position Sensor Performance	P0122 - Throttle Position Sensor Circuit Low	P0123 - Throttle Position Sensor Circuit High	P0130 - HO2S Circuit Bank 1 Sensor 1	P0131 - Oxygen Sensor Circuit Low Bank 1 Sensor 1	P0132 - Oxygen Sensor Circuit High Bank 1 Sensor 1	P0133 - Oxygen Sensor Slow Response Bank 1 Sensor 1	P0150 - HO2S Circuit Bank 2 Sensor 1	P0151 - Oxygen Sensor Circuit Low Bank 2 Sensor 1	P0152 - Oxygen Sensor Circuit High Bank 2 Sensor 1	CONTINUED NEXT LINE
	P0153 - Oxygen Sensor Slow Response Bank 2 Sensor 1	P0221 - Throttle Position Sensor 2 Performance	P0222 - Throttle Position Sensor 2 Circuit Low	P0223 - Throttle Position Sensor 2 Circuit High	P0226 - Throttle Position Sensor Performance Bank 2	P0227 - Throttle Position Sensor Circuit Low Bank 2	P0228 - Throttle Position Sensor Circuit High Bank 2	P0300 - Engine Misfire Detected	P0301 - Cylinder 1 Misfire Detected	P0302 - Cylinder 2 Misfire Detected	P0303 - Cylinder 3 Misfire Detected	P0304 - Cylinder 4 Misfire Detected	P0305 - Cylinder 5 Misfire Detected	P0306 - Cylinder 6 Misfire Detected	P0307 - Cylinder 7 Misfire Detected	P0308 - Cylinder 8 Misfire Detected	P0335 - Crankshaft Position Sensor Circuit	P0336 - Crankshaft Position Sensor Performance	P034A - Crankshaft Position Sensor Start Position Incorrect	P034B - Crankshaft Position Sensor Direction Incorrect	P0443 - Evaporative Emission Purge Solenoid Control Circuit Open	P0458 - Evaporative Emission Purge Solenoid Control Circuit Low	CONTINUED NEXT LINE
	P0459 - Evaporative Emission Purge Solenoid Control Circuit High	P0496 - Evaporative Emission System Flow During Non-Purge	P04AB - Evaporative Emission Purge Solenoid Control Circuit Open Bank 2	P04AC - Evaporative Emission Purge Solenoid Control Circuit Low Bank 2	P04AD - Evaporative Emission Purge Solenoid Control Circuit High Bank 2	P04AE - Evaporative Emission Purge Solenoid Performance Bank 2	P04DF - Evaporative Emission Purge Solenoid Performance Bank 1	P05CC - Cold Start Intake Camshaft Position System Performance Bank 1	P05CD - Cold Start Intake Camshaft Position System Performance Bank 2	P0641 - Sensor Reference Voltage 1 Circuit Open	P064D - Control Module Oxygen Sensor Bank 1 Sensor 1 System Performance	P064E - Control Module Oxygen Sensor Bank 2 Sensor 1 System Performance	P0651 - Sensor Reference Voltage 2 Circuit Open	P0697 - Sensor Reference Voltage 3 Circuit Open	P06A3 - Sensor Reference Voltage 4 Circuit Open	P2088 - Camshaft Position Actuator Control Circuit Low	P2089 - Camshaft Position Actuator Control Circuit High	P2090 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 1	P2091 - Exhaust Camshaft Position Actuator Control Circuit High Bank 1	P2092 - Intake Camshaft Position Actuator Control Circuit Low Bank 2	P2093 - Intake Camshaft Position Actuator Control Circuit High Bank 2	P2094 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 2	CONTINUED NEXT LINE
	P2095 - Exhaust Camshaft Position Actuator Control Circuit High Bank 2	P2096 - Post Catalyst Fuel Trim System Low Limit Bank 1	P2097 - Post Catalyst Fuel Trim System High Limit Bank 1	P2098 - Post Catalyst Fuel Trim System Low Limit Bank 2	P2099 - Post Catalyst Fuel Trim System High Limit Bank 2	P212B - Throttle Position Sensor 2 Performance Bank 2	P212C - Throttle Position Sensor 2 Circuit Low Bank 2	P212D - Throttle Position Sensor 2 Circuit High Bank 2	P2176 - Minimum Throttle Position Not Learned	P218A - Minimum Throttle Position Not Learned Bank 2	P2195 - Oxygen Sensor Signal Biased Lean Bank 1 Sensor 1	P2196 - Oxygen Sensor Signal Biased Rich Bank 1 Sensor 1	P2197 - Oxygen Sensor Signal Biased Lean Bank 2 Sensor 1	P2198 - Oxygen Sensor Signal Biased Rich Bank 2 Sensor 1	P2237 - Oxygen Sensor Pumping Current Control Circuit Open Bank 1 Sensor 1	P2240 - Oxygen Sensor Pumping Current Control Circuit Open Bank 2 Sensor 1	P2251 - Oxygen Sensor Low Reference Circuit Open Bank 1 Sensor 1	P2254 - Oxygen Sensor Low Reference Circuit Open Bank 2 Sensor 1	P2297 - Oxygen Sensor Out of Range During Deceleration Bank 1 Sensor 1	P2298 - Oxygen Sensor Out of Range During Deceleration Bank 2 Sensor 1	P2626 - Oxygen Sensor Pumping Current Trim Circuit Open Bank 1 Sensor 1	P2629 - Oxygen Sensor Pumping Current Trim Circuit Open Bank 2 Sensor 1	CONTINUED NEXT LINE
	P30D8 - Control Module Processor Serial Peripheral Interface Bus 3	P30D9 - Control Module Processor Serial Peripheral Interface Bus 4	U0607 - Lost Communication With Throttle Position Sensor Bank 1 Sensor 2	U0688 - Lost Communication With Throttle Position Sensor Bank 2 Sensor 2	U136D - Invalid Data Received From Throttle Position Sensor 2	U136F - Invalid Data Received From Throttle Position Sensor Bank 2 Sensor 2	END																

19 OBDG07 ECM DTC Inhibit Tables

The DTCs in this column is inhibited by the DTCs listed to the right	The DTCs in these columns inhibit the DTC to the left						The DTCs in these columns inhibit the DTC to the left						The DTCs in these columns inhibit the DTC to the left						The DTCs in these columns inhibit the DTC to the left				
Inhibited DTC	Fault Active DTCs						Fault Active DTCs						Fault Active DTCs						Fault Active DTCs				
P2178 - Fuel Trim System Rich Off Idle Bank 1	P000A - Camshaft Position System Slow Response Bank 1	P000B - Exhaust Camshaft Position System Slow Response Bank 1	P000C - Intake Camshaft Position System Slow Response Bank 2	P000D - Exhaust Camshaft Position System Slow Response Bank 2	P0010 - Camshaft Position Actuator Control Circuit Open	P0011 - Camshaft Position System Performance	P0013 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 1	P0014 - Exhaust Camshaft Position System Performance Bank 1	P0016 - Crankshaft to Camshaft Correlation	P0017 - Crankshaft to Exhaust Camshaft Correlation Bank 1	P0018 - Crankshaft to Intake Camshaft Correlation Bank 2	P0019 - Crankshaft to Exhaust Camshaft Correlation Bank 2	P0020 - Intake Camshaft Position Actuator Control Circuit Open Bank 2	P0021 - Intake Camshaft Position System Performance Bank 2	P0023 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 2	P0024 - Exhaust Camshaft Position System Performance Bank 2	P0030 - Oxygen Sensor Heater Control Circuit Open Bank 1 Sensor 1	P0031 - Oxygen Sensor Heater Control Circuit Low Bank 1 Sensor 1	P0032 - Oxygen Sensor Heater Control Circuit High Bank 1 Sensor 1	P0050 - Oxygen Sensor Heater Control Circuit Open Bank 2 Sensor 1	P0051 - Oxygen Sensor Heater Control Circuit Low Bank 2 Sensor 1	P0052 - Oxygen Sensor Heater Control Circuit High Bank 2 Sensor 1	CONTINUED NEXT LINE
	P0096 - Intake Air Temperature Sensor 2 Performance	P0097 - Intake Air Temperature Sensor 2 Circuit Low	P0098 - Intake Air Temperature Sensor 2 Circuit High	P0099 - Intake Air Temperature Sensor 2 Circuit Erratic	P00A6 - Intake Air Temperature Sensor 2 Performance Bank 2	P00A7 - Intake Air Temperature Sensor 2 Circuit Low Bank 2	P00A8 - Intake Air Temperature Sensor 2 Circuit High Bank 2	P00A9 - Intake Air Temperature Sensor 2 Circuit Erratic Bank 2	P0116 - Engine Coolant Temperature Sensor Performance	P0117 - Engine Coolant Temperature Sensor Circuit Low	P0118 - Engine Coolant Temperature Sensor Circuit High	P0119 - Engine Coolant Temperature Sensor Circuit Erratic	P0121 - Throttle Position Sensor Performance	P0122 - Throttle Position Sensor Circuit Low	P0123 - Throttle Position Sensor Circuit High	P0130 - HO2S Circuit Bank 1 Sensor 1	P0131 - Oxygen Sensor Circuit Low Bank 1 Sensor 1	P0132 - Oxygen Sensor Circuit High Bank 1 Sensor 1	P0133 - Oxygen Sensor Slow Response Bank 1 Sensor 1	P0150 - HO2S Circuit Bank 2 Sensor 1	P0151 - Oxygen Sensor Circuit Low Bank 2 Sensor 1	P0152 - Oxygen Sensor Circuit High Bank 2 Sensor 1	CONTINUED NEXT LINE
	P0153 - Oxygen Sensor Slow Response Bank 2 Sensor 1	P0221 - Throttle Position Sensor 2 Performance	P0222 - Throttle Position Sensor 2 Circuit Low	P0223 - Throttle Position Sensor 2 Circuit High	P0226 - Throttle Position Sensor Performance Bank 2	P0227 - Throttle Position Sensor Circuit Low Bank 2	P0228 - Throttle Position Sensor Circuit High Bank 2	P0300 - Engine Misfire Detected	P0301 - Cylinder 1 Misfire Detected	P0302 - Cylinder 2 Misfire Detected	P0303 - Cylinder 3 Misfire Detected	P0304 - Cylinder 4 Misfire Detected	P0305 - Cylinder 5 Misfire Detected	P0306 - Cylinder 6 Misfire Detected	P0307 - Cylinder 7 Misfire Detected	P0308 - Cylinder 8 Misfire Detected	P0335 - Crankshaft Position Sensor Circuit	P0336 - Crankshaft Position Sensor Performance	P034A - Crankshaft Position Sensor Start Position Incorrect	P034B - Crankshaft Position Sensor Direction Incorrect	P0443 - Evaporative Emission Purge Solenoid Control Circuit Open	P0458 - Evaporative Emission Purge Solenoid Control Circuit Low	CONTINUED NEXT LINE
	P0459 - Evaporative Emission Purge Solenoid Control Circuit High	P0496 - Evaporative Emission System Flow During Non-Purge	P04AB - Evaporative Emission Purge Solenoid Control Circuit Open Bank 2	P04AC - Evaporative Emission Purge Solenoid Control Circuit Low Bank 2	P04AD - Evaporative Emission Purge Solenoid Control Circuit High Bank 2	P04AE - Evaporative Emission Purge Solenoid Performance Bank 2	P04DF - Evaporative Emission Purge Solenoid Performance Bank 1	P05CC - Cold Start Intake Camshaft Position System Performance Bank 1	P05CD - Cold Start Intake Camshaft Position System Performance Bank 2	P0641 - Sensor Reference Voltage 1 Circuit Open	P064D - Control Module Oxygen Sensor Bank 1 Sensor 1 System Performance	P064E - Control Module Oxygen Sensor Bank 2 Sensor 1 System Performance	P0651 - Sensor Reference Voltage 2 Circuit Open	P0697 - Sensor Reference Voltage 3 Circuit Open	P06A3 - Sensor Reference Voltage 4 Circuit Open	P2088 - Camshaft Position Actuator Control Circuit Low	P2089 - Camshaft Position Actuator Control Circuit High	P2090 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 1	P2091 - Exhaust Camshaft Position Actuator Control Circuit High Bank 1	P2092 - Intake Camshaft Position Actuator Control Circuit Low Bank 2	P2093 - Intake Camshaft Position Actuator Control Circuit High Bank 2	P2094 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 2	CONTINUED NEXT LINE
	P2095 - Exhaust Camshaft Position Actuator Control Circuit High Bank 2	P2096 - Post Catalyst Fuel Trim System Low Limit Bank 1	P2097 - Post Catalyst Fuel Trim System High Limit Bank 1	P2098 - Post Catalyst Fuel Trim System Low Limit Bank 2	P2099 - Post Catalyst Fuel Trim System High Limit Bank 2	P212B - Throttle Position Sensor 2 Performance Bank 2	P212C - Throttle Position Sensor 2 Circuit Low Bank 2	P212D - Throttle Position Sensor 2 Circuit High Bank 2	P2176 - Minimum Throttle Position Not Learned	P218A - Minimum Throttle Position Not Learned Bank 2	P2195 - Oxygen Sensor Signal Biased Lean Bank 1 Sensor 1	P2196 - Oxygen Sensor Signal Biased Rich Bank 1 Sensor 1	P2197 - Oxygen Sensor Signal Biased Lean Bank 2 Sensor 1	P2198 - Oxygen Sensor Signal Biased Rich Bank 2 Sensor 1	P2237 - Oxygen Sensor Pumping Current Control Circuit Open Bank 1 Sensor 1	P2240 - Oxygen Sensor Pumping Current Control Circuit Open Bank 2 Sensor 1	P2251 - Oxygen Sensor Low Reference Circuit Open Bank 1 Sensor 1	P2254 - Oxygen Sensor Low Reference Circuit Open Bank 2 Sensor 1	P2297 - Oxygen Sensor Out of Range During Deceleration Bank 1 Sensor 1	P2298 - Oxygen Sensor Out of Range During Deceleration Bank 2 Sensor 1	P2626 - Oxygen Sensor Pumping Current Trim Circuit Open Bank 1 Sensor 1	P2629 - Oxygen Sensor Pumping Current Trim Circuit Open Bank 2 Sensor 1	CONTINUED NEXT LINE
	P30D8 - Control Module Processor Serial Peripheral Interface Bus 3	P30D9 - Control Module Processor Serial Peripheral Interface Bus 4	U0607 - Lost Communication With Throttle Position Sensor Bank 1 Sensor 2	U0688 - Lost Communication With Throttle Position Sensor Bank 2 Sensor 2	U136D - Invalid Data Received From Throttle Position Sensor 2	U136F - Invalid Data Received From Throttle Position Sensor Bank 2 Sensor 2	END																
P2179 - Fuel Trim System Lean Off Idle Bank 2	P000A - Camshaft Position System Slow Response Bank 1	P000B - Exhaust Camshaft Position System Slow Response Bank 1	P000C - Intake Camshaft Position System Slow Response Bank 2	P000D - Exhaust Camshaft Position System Slow Response Bank 2	P0010 - Camshaft Position Actuator Control Circuit Open	P0011 - Camshaft Position System Performance	P0013 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 1	P0014 - Exhaust Camshaft Position System Performance Bank 1	P0016 - Crankshaft to Camshaft Correlation	P0017 - Crankshaft to Exhaust Camshaft Correlation Bank 1	P0018 - Crankshaft to Intake Camshaft Correlation Bank 2	P0019 - Crankshaft to Exhaust Camshaft Correlation Bank 2	P0020 - Intake Camshaft Position Actuator Control Circuit Open Bank 2	P0021 - Intake Camshaft Position System Performance Bank 2	P0023 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 2	P0024 - Exhaust Camshaft Position System Performance Bank 2	P0030 - Oxygen Sensor Heater Control Circuit Open Bank 1 Sensor 1	P0031 - Oxygen Sensor Heater Control Circuit Low Bank 1 Sensor 1	P0032 - Oxygen Sensor Heater Control Circuit High Bank 1 Sensor 1	P0050 - Oxygen Sensor Heater Control Circuit Open Bank 2 Sensor 1	P0051 - Oxygen Sensor Heater Control Circuit Low Bank 2 Sensor 1	P0052 - Oxygen Sensor Heater Control Circuit High Bank 2 Sensor 1	CONTINUED NEXT LINE
	P0096 - Intake Air Temperature Sensor 2 Performance	P0097 - Intake Air Temperature Sensor 2 Circuit Low	P0098 - Intake Air Temperature Sensor 2 Circuit High	P0099 - Intake Air Temperature Sensor 2 Circuit Erratic	P00A6 - Intake Air Temperature Sensor 2 Performance Bank 2	P00A7 - Intake Air Temperature Sensor 2 Circuit Low Bank 2	P00A8 - Intake Air Temperature Sensor 2 Circuit High Bank 2	P00A9 - Intake Air Temperature Sensor 2 Circuit Erratic Bank 2	P0116 - Engine Coolant Temperature Sensor Performance	P0117 - Engine Coolant Temperature Sensor Circuit Low	P0118 - Engine Coolant Temperature Sensor Circuit High	P0119 - Engine Coolant Temperature Sensor Circuit Erratic	P0121 - Throttle Position Sensor Performance	P0122 - Throttle Position Sensor Circuit Low	P0123 - Throttle Position Sensor Circuit High	P0130 - HO2S Circuit Bank 1 Sensor 1	P0131 - Oxygen Sensor Circuit Low Bank 1 Sensor 1	P0132 - Oxygen Sensor Circuit High Bank 1 Sensor 1	P0133 - Oxygen Sensor Slow Response Bank 1 Sensor 1	P0150 - HO2S Circuit Bank 2 Sensor 1	P0151 - Oxygen Sensor Circuit Low Bank 2 Sensor 1	P0152 - Oxygen Sensor Circuit High Bank 2 Sensor 1	CONTINUED NEXT LINE
	P0153 - Oxygen Sensor Slow Response Bank 2 Sensor 1	P0221 - Throttle Position Sensor 2 Performance	P0222 - Throttle Position Sensor 2 Circuit Low	P0223 - Throttle Position Sensor 2 Circuit High	P0226 - Throttle Position Sensor Performance Bank 2	P0227 - Throttle Position Sensor Circuit Low Bank 2	P0228 - Throttle Position Sensor Circuit High Bank 2	P0300 - Engine Misfire Detected	P0301 - Cylinder 1 Misfire Detected	P0302 - Cylinder 2 Misfire Detected	P0303 - Cylinder 3 Misfire Detected	P0304 - Cylinder 4 Misfire Detected	P0305 - Cylinder 5 Misfire Detected	P0306 - Cylinder 6 Misfire Detected	P0307 - Cylinder 7 Misfire Detected	P0308 - Cylinder 8 Misfire Detected	P0335 - Crankshaft Position Sensor Circuit	P0336 - Crankshaft Position Sensor Performance	P034A - Crankshaft Position Sensor Start Position Incorrect	P034B - Crankshaft Position Sensor Direction Incorrect	P0443 - Evaporative Emission Purge Solenoid Control Circuit Open	P0458 - Evaporative Emission Purge Solenoid Control Circuit Low	CONTINUED NEXT LINE
	P0459 - Evaporative Emission Purge Solenoid Control Circuit High	P0496 - Evaporative Emission System Flow During Non-Purge	P04AB - Evaporative Emission Purge Solenoid Control Circuit Open Bank 2	P04AC - Evaporative Emission Purge Solenoid Control Circuit Low Bank 2	P04AD - Evaporative Emission Purge Solenoid Control Circuit High Bank 2	P04AE - Evaporative Emission Purge Solenoid Performance Bank 2	P04DF - Evaporative Emission Purge Solenoid Performance Bank 1	P05CC - Cold Start Intake Camshaft Position System Performance Bank 1	P05CD - Cold Start Intake Camshaft Position System Performance Bank 2	P0641 - Sensor Reference Voltage 1 Circuit Open	P064D - Control Module Oxygen Sensor Bank 1 Sensor 1 System Performance	P064E - Control Module Oxygen Sensor Bank 2 Sensor 1 System Performance	P0651 - Sensor Reference Voltage 2 Circuit Open	P0697 - Sensor Reference Voltage 3 Circuit Open	P06A3 - Sensor Reference Voltage 4 Circuit Open	P2088 - Camshaft Position Actuator Control Circuit Low	P2089 - Camshaft Position Actuator Control Circuit High	P2090 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 1	P2091 - Exhaust Camshaft Position Actuator Control Circuit High Bank 1	P2092 - Intake Camshaft Position Actuator Control Circuit Low Bank 2	P2093 - Intake Camshaft Position Actuator Control Circuit High Bank 2	P2094 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 2	CONTINUED NEXT LINE
	P2095 - Exhaust Camshaft Position Actuator Control Circuit High Bank 2	P2096 - Post Catalyst Fuel Trim System Low Limit Bank 1	P2097 - Post Catalyst Fuel Trim System High Limit Bank 1	P2098 - Post Catalyst Fuel Trim System Low Limit Bank 2	P2099 - Post Catalyst Fuel Trim System High Limit Bank 2	P212B - Throttle Position Sensor 2 Performance Bank 2	P212C - Throttle Position Sensor 2 Circuit Low Bank 2	P212D - Throttle Position Sensor 2 Circuit High Bank 2	P2176 - Minimum Throttle Position Not Learned	P218A - Minimum Throttle Position Not Learned Bank 2	P2195 - Oxygen Sensor Signal Biased Lean Bank 1 Sensor 1	P2196 - Oxygen Sensor Signal Biased Rich Bank 1 Sensor 1	P2197 - Oxygen Sensor Signal Biased Lean Bank 2 Sensor 1	P2198 - Oxygen Sensor Signal Biased Rich Bank 2 Sensor 1	P2237 - Oxygen Sensor Pumping Current Control Circuit Open Bank 1 Sensor 1	P2240 - Oxygen Sensor Pumping Current Control Circuit Open Bank 2 Sensor 1	P2251 - Oxygen Sensor Low Reference Circuit Open Bank 1 Sensor 1	P2254 - Oxygen Sensor Low Reference Circuit Open Bank 2 Sensor 1	P2297 - Oxygen Sensor Out of Range During Deceleration Bank 1 Sensor 1	P2298 - Oxygen Sensor Out of Range During Deceleration Bank 2 Sensor 1	P2626 - Oxygen Sensor Pumping Current Trim Circuit Open Bank 1 Sensor 1	P2629 - Oxygen Sensor Pumping Current Trim Circuit Open Bank 2 Sensor 1	CONTINUED NEXT LINE
	P30D8 - Control Module Processor Serial Peripheral Interface Bus 3	P30D9 - Control Module Processor Serial Peripheral Interface Bus 4	U0607 - Lost Communication With Throttle Position Sensor Bank 1 Sensor 2	U0688 - Lost Communication With Throttle Position Sensor Bank 2 Sensor 2	U136D - Invalid Data Received From Throttle Position Sensor 2	U136F - Invalid Data Received From Throttle Position Sensor Bank 2 Sensor 2	END																
P217A - Fuel Injector High Control Circuit 7 Open	END																						
P217D - Fuel Injector High Control Circuit 8 Open	END																						
P2180 - Fuel Trim System Rich Off Idle Bank 2	P000A - Camshaft Position System Slow Response Bank 1	P000B - Exhaust Camshaft Position System Slow Response Bank 1	P000C - Intake Camshaft Position System Slow Response Bank 2	P000D - Exhaust Camshaft Position System Slow Response Bank 2	P0010 - Camshaft Position Actuator Control Circuit Open	P0011 - Camshaft Position System Performance	P0013 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 1	P0014 - Exhaust Camshaft Position System Performance Bank 1	P0016 - Crankshaft to Camshaft Correlation	P0017 - Crankshaft to Exhaust Camshaft Correlation Bank 1	P0018 - Crankshaft to Intake Camshaft Correlation Bank 2	P0019 - Crankshaft to Exhaust Camshaft Correlation Bank 2	P0020 - Intake Camshaft Position Actuator Control Circuit Open Bank 2	P0021 - Intake Camshaft Position System Performance Bank 2	P0023 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 2	P0024 - Exhaust Camshaft Position System Performance Bank 2	P0030 - Oxygen Sensor Heater Control Circuit Open Bank 1 Sensor 1	P0031 - Oxygen Sensor Heater Control Circuit Low Bank 1 Sensor 1	P0032 - Oxygen Sensor Heater Control Circuit High Bank 1 Sensor 1	P0050 - Oxygen Sensor Heater Control Circuit Open Bank 2 Sensor 1	P0051 - Oxygen Sensor Heater Control Circuit Low Bank 2 Sensor 1	P0052 - Oxygen Sensor Heater Control Circuit High Bank 2 Sensor 1	CONTINUED NEXT LINE
	P0096 - Intake Air Temperature Sensor 2 Performance	P0097 - Intake Air Temperature Sensor 2 Circuit Low	P0098 - Intake Air Temperature Sensor 2 Circuit High	P0099 - Intake Air Temperature Sensor 2 Circuit Erratic	P00A6 - Intake Air Temperature Sensor 2 Performance Bank 2	P00A7 - Intake Air Temperature Sensor 2 Circuit Low Bank 2	P00A8 - Intake Air Temperature Sensor 2 Circuit High Bank 2	P00A9 - Intake Air Temperature Sensor 2 Circuit Erratic Bank 2	P0116 - Engine Coolant Temperature Sensor Performance	P0117 - Engine Coolant Temperature Sensor Circuit Low	P0118 - Engine Coolant Temperature Sensor Circuit High	P0119 - Engine Coolant Temperature Sensor Circuit Erratic	P0121 - Throttle Position Sensor Performance	P0122 - Throttle Position Sensor Circuit Low	P0123 - Throttle Position Sensor Circuit High	P0130 - HO2S Circuit Bank 1 Sensor 1	P0131 - Oxygen Sensor Circuit Low Bank 1 Sensor 1	P0132 - Oxygen Sensor Circuit High Bank 1 Sensor 1	P0133 - Oxygen Sensor Slow Response Bank 1 Sensor 1	P0150 - HO2S Circuit Bank 2 Sensor 1	P0151 - Oxygen Sensor Circuit Low Bank 2 Sensor 1	P0152 - Oxygen Sensor Circuit High Bank 2 Sensor 1	CONTINUED NEXT LINE
	P0153 - Oxygen Sensor Slow Response Bank 2 Sensor 1	P0221 - Throttle Position Sensor 2 Performance	P0222 - Throttle Position Sensor 2 Circuit Low	P0223 - Throttle Position Sensor 2 Circuit High	P0226 - Throttle Position Sensor Performance Bank 2	P0227 - Throttle Position Sensor Circuit Low Bank 2	P0228 - Throttle Position Sensor Circuit High Bank 2	P0300 - Engine Misfire Detected	P0301 - Cylinder 1 Misfire Detected	P0302 - Cylinder 2 Misfire Detected	P0303 - Cylinder 3 Misfire Detected	P0304 - Cylinder 4 Misfire Detected	P0305 - Cylinder 5 Misfire Detected	P0306 - Cylinder 6 Misfire Detected	P0307 - Cylinder 7 Misfire Detected	P0308 - Cylinder 8 Misfire Detected	P0335 - Crankshaft Position Sensor Circuit	P0336 - Crankshaft Position Sensor Performance	P034A - Crankshaft Position Sensor Start Position Incorrect	P034B - Crankshaft Position Sensor Direction Incorrect	P0443 - Evaporative Emission Purge Solenoid Control Circuit Open	P0458 - Evaporative Emission Purge Solenoid Control Circuit Low	CONTINUED NEXT LINE
	P0459 - Evaporative Emission Purge Solenoid Control Circuit High	P0496 - Evaporative Emission System Flow During Non-Purge	P04AB - Evaporative Emission Purge Solenoid Control Circuit Open Bank 2	P04AC - Evaporative Emission Purge Solenoid Control Circuit Low Bank 2	P04AD - Evaporative Emission Purge Solenoid Control Circuit High Bank 2	P04AE - Evaporative Emission Purge Solenoid Performance Bank 2	P04DF - Evaporative Emission Purge Solenoid Performance Bank 1	P05CC - Cold Start Intake Camshaft Position System Performance Bank 1	P05CD - Cold Start Intake Camshaft Position System Performance Bank 2	P0641 - Sensor Reference Voltage 1 Circuit Open	P064D - Control Module Oxygen Sensor Bank 1 Sensor 1 System Performance	P064E - Control Module Oxygen Sensor Bank 2 Sensor 1 System Performance	P0651 - Sensor Reference Voltage 2 Circuit Open	P0697 - Sensor Reference Voltage 3 Circuit Open	P06A3 - Sensor Reference Voltage 4 Circuit Open	P2088 - Camshaft Position Actuator Control Circuit Low	P2089 - Camshaft Position Actuator Control Circuit High	P2090 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 1	P2091 - Exhaust Camshaft Position Actuator Control Circuit High Bank 1	P2092 - Intake Camshaft Position Actuator Control Circuit Low Bank 2	P2093 - Intake Camshaft Position Actuator Control Circuit High Bank 2	P2094 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 2	CONTINUED NEXT LINE
	P2095 - Exhaust Camshaft Position Actuator Control Circuit High Bank 2	P2096 - Post Catalyst Fuel Trim System Low Limit Bank 1	P2097 - Post Catalyst Fuel Trim System High Limit Bank 1	P2098 - Post Catalyst Fuel Trim System Low Limit Bank 2	P2099 - Post Catalyst Fuel Trim System High Limit Bank 2	P212B - Throttle Position Sensor 2 Performance Bank 2	P212C - Throttle Position Sensor 2 Circuit Low Bank 2	P212D - Throttle Position Sensor 2 Circuit High Bank 2	P2176 - Minimum Throttle Position Not Learned	P218A - Minimum Throttle Position Not Learned Bank 2	P2195 - Oxygen Sensor Signal Biased Lean Bank 1 Sensor 1	P2196 - Oxygen Sensor Signal Biased Rich Bank 1 Sensor 1	P2197 - Oxygen Sensor Signal Biased Lean Bank 2 Sensor 1	P2198 - Oxygen Sensor Signal Biased Rich Bank 2 Sensor 1	P2237 - Oxygen Sensor Pumping Current Control Circuit Open Bank 1 Sensor 1	P2240 - Oxygen Sensor Pumping Current Control Circuit Open Bank 2 Sensor 1	P2251 - Oxygen Sensor Low Reference Circuit Open Bank 1 Sensor 1	P2254 - Oxygen Sensor Low Reference Circuit Open Bank 2 Sensor 1	P2297 - Oxygen Sensor Out of Range During Deceleration Bank 1 Sensor 1	P2298 - Oxygen Sensor Out of Range During Deceleration Bank 2 Sensor 1	P2626 - Oxygen Sensor Pumping Current Trim Circuit Open Bank 1 Sensor 1	P2629 - Oxygen Sensor Pumping Current Trim Circuit Open Bank 2 Sensor 1	CONTINUED NEXT LINE
	P30D8 - Control Module Processor Serial Peripheral Interface Bus 3	P30D9 - Control Module Processor Serial Peripheral Interface Bus 4	U0607 - Lost Communication With Throttle Position Sensor Bank 1 Sensor 2	U0688 - Lost Communication With Throttle Position Sensor Bank 2 Sensor 2	U136D - Invalid Data Received From Throttle Position Sensor 2	U136F - Invalid Data Received From Throttle Position Sensor Bank 2 Sensor 2	END																
P2187 - Fuel Trim System Lean at Idle Bank 1	P000A - Camshaft Position System Slow Response Bank 1	P000B - Exhaust Camshaft Position System Slow Response Bank 1	P000C - Intake Camshaft Position System Slow Response Bank 2	P000D - Exhaust Camshaft Position System Slow Response Bank 2	P0010 - Camshaft Position Actuator Control Circuit Open	P0011 - Camshaft Position System Performance	P0013 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 1	P0014 - Exhaust Camshaft Position System Performance Bank 1	P0016 - Crankshaft to Camshaft Correlation	P0017 - Crankshaft to Exhaust Camshaft Correlation Bank 1	P0018 - Crankshaft to Intake Camshaft Correlation Bank 2	P0019 - Crankshaft to Exhaust Camshaft Correlation Bank 2	P0020 - Intake Camshaft Position Actuator Control Circuit Open Bank 2	P0021 - Intake Camshaft Position System Performance Bank 2	P0023 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 2	P0024 - Exhaust Camshaft Position System Performance Bank 2	P0030 - Oxygen Sensor Heater Control Circuit Open Bank 1 Sensor 1	P0031 - Oxygen Sensor Heater Control Circuit Low Bank 1 Sensor 1	P0032 - Oxygen Sensor Heater Control Circuit High Bank 1 Sensor 1	P0050 - Oxygen Sensor Heater Control Circuit Open Bank 2 Sensor 1	P0051 - Oxygen Sensor Heater Control Circuit Low Bank 2 Sensor 1	P0052 - Oxygen Sensor Heater Control Circuit High Bank 2 Sensor 1	CONTINUED NEXT LINE
	P0096 - Intake Air Temperature Sensor 2 Performance	P0097 - Intake Air Temperature Sensor 2 Circuit Low	P0098 - Intake Air Temperature Sensor 2 Circuit High	P0099 - Intake Air Temperature Sensor 2 Circuit Erratic	P00A6 - Intake Air Temperature Sensor 2 Performance Bank 2	P00A7 - Intake Air Temperature Sensor 2 Circuit Low Bank 2	P00A8 - Intake Air Temperature Sensor 2 Circuit High Bank 2	P00A9 - Intake Air Temperature Sensor 2 Circuit Erratic Bank 2	P0116 - Engine Coolant Temperature Sensor Performance	P0117 - Engine Coolant Temperature Sensor Circuit Low	P0118 - Engine Coolant Temperature Sensor Circuit High	P0119 - Engine Coolant Temperature Sensor Circuit Erratic	P0121 - Throttle Position Sensor Performance	P0122 - Throttle Position Sensor Circuit Low	P0123 - Throttle Position Sensor Circuit High	P0130 - HO2S Circuit Bank 1 Sensor 1	P0131 - Oxygen Sensor Circuit Low Bank 1 Sensor 1	P0132 - Oxygen Sensor Circuit High Bank 1 Sensor 1	P0133 - Oxygen Sensor Slow Response Bank 1 Sensor 1	P0150 - HO2S Circuit Bank 2 Sensor 1	P0151 - Oxygen Sensor Circuit Low Bank 2 Sensor 1	P0152 - Oxygen Sensor Circuit High Bank 2 Sensor 1	CONTINUED NEXT LINE
	P0153 - Oxygen Sensor Slow Response Bank 2 Sensor 1	P0221 - Throttle Position Sensor 2 Performance	P0222 - Throttle Position Sensor 2 Circuit Low	P0223 - Throttle Position Sensor 2 Circuit High	P0226 - Throttle Position Sensor Performance Bank 2	P0227 - Throttle Position Sensor Circuit Low Bank 2	P0228 - Throttle Position Sensor Circuit High Bank 2	P0300 - Engine Misfire Detected	P0301 - Cylinder 1 Misfire Detected	P0302 - Cylinder 2 Misfire Detected	P0303 - Cylinder 3 Misfire Detected	P0304 - Cylinder 4 Misfire Detected	P0305 - Cylinder 5 Misfire Detected	P0306 - Cylinder 6 Misfire Detected	P0307 - Cylinder 7 Misfire Detected	P0308 - Cylinder 8 Misfire Detected	P0335 - Crankshaft Position Sensor Circuit	P0336 - Crankshaft Position Sensor Performance	P034A - Crankshaft Position Sensor Start Position Incorrect	P034B - Crankshaft Position Sensor Direction Incorrect	P0443 - Evaporative Emission Purge Solenoid Control Circuit Open	P0458 - Evaporative Emission Purge Solenoid Control Circuit Low	CONTINUED NEXT LINE
	P0459 - Evaporative Emission Purge Solenoid Control Circuit High	P0496 - Evaporative Emission System Flow During Non-Purge	P04AB - Evaporative Emission Purge Solenoid Control Circuit Open Bank 2	P04AC - Evaporative Emission Purge Solenoid Control Circuit Low Bank 2	P04AD - Evaporative Emission Purge Solenoid Control Circuit High Bank 2	P04AE - Evaporative Emission Purge Solenoid Performance Bank 2	P04DF - Evaporative Emission Purge Solenoid Performance Bank 1	P05CC - Cold Start Intake Camshaft Position System Performance Bank 1	P05CD - Cold Start Intake Camshaft Position System Performance Bank 2	P0641 - Sensor Reference Voltage 1 Circuit Open	P064D - Control Module Oxygen Sensor Bank 1 Sensor 1 System Performance	P064E - Control Module Oxygen Sensor Bank 2 Sensor 1 System Performance	P0651 - Sensor Reference Voltage 2 Circuit Open	P0697 - Sensor Reference Voltage 3 Circuit Open	P06A3 - Sensor Reference Voltage 4 Circuit Open	P2088 - Camshaft Position Actuator Control Circuit Low	P2089 - Camshaft Position Actuator Control Circuit High	P2090 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 1	P2091 - Exhaust Camshaft Position Actuator Control Circuit High Bank 1	P2092 - Intake Camshaft Position Actuator Control Circuit Low Bank 2	P2093 - Intake Camshaft Position Actuator Control Circuit High Bank 2	P2094 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 2	CONTINUED NEXT LINE
	P2095 - Exhaust Camshaft Position Actuator Control Circuit High Bank 2	P2096 - Post Catalyst Fuel Trim System Low Limit Bank 1	P2097 - Post Catalyst Fuel Trim System High Limit Bank 1	P2098 - Post Catalyst Fuel Trim System Low Limit Bank 2	P2099 - Post Catalyst Fuel Trim System High Limit Bank 2	P212B - Throttle Position Sensor 2 Performance Bank 2	P212C - Throttle Position Sensor 2 Circuit Low Bank 2	P212D - Throttle Position Sensor 2 Circuit High Bank 2	P2176 - Minimum Throttle Position Not Learned	P218A - Minimum Throttle Position Not Learned Bank 2	P2195 - Oxygen Sensor Signal Biased Lean Bank 1 Sensor 1	P2196 - Oxygen Sensor Signal Biased Rich Bank 1 Sensor 1	P2197 - Oxygen Sensor Signal Biased Lean Bank 2 Sensor 1	P2198 - Oxygen Sensor Signal Biased Rich Bank 2 Sensor 1	P2237 - Oxygen Sensor Pumping Current Control Circuit Open Bank 1 Sensor 1	P2240 - Oxygen Sensor Pumping Current Control Circuit Open Bank 2 Sensor 1	P2251 - Oxygen Sensor Low Reference Circuit Open Bank 1 Sensor 1	P2254 - Oxygen Sensor Low Reference Circuit Open Bank 2 Sensor 1	P2297 - Oxygen Sensor Out of Range During Deceleration Bank 1 Sensor 1	P2298 - Oxygen Sensor Out of Range During Deceleration Bank 2 Sensor 1	P2626 - Oxygen Sensor Pumping Current Trim Circuit Open Bank 1 Sensor 1	P2629 - Oxygen Sensor Pumping Current Trim Circuit Open Bank 2 Sensor 1	CONTINUED NEXT LINE
	P30D8 - Control Module Processor Serial Peripheral Interface Bus 3	P30D9 - Control Module Processor Serial Peripheral Interface Bus 4	U0607 - Lost Communication With Throttle Position Sensor Bank 1 Sensor 2	U0688 - Lost Communication With Throttle Position Sensor Bank 2 Sensor 2	U136D - Invalid Data Received From Throttle Position Sensor 2	U136F - Invalid Data Received From Throttle Position Sensor Bank 2 Sensor 2	END																
P2188 - Fuel Trim System Rich at Idle Bank 1	P000A - Camshaft Position System Slow Response Bank 1	P000B - Exhaust Camshaft Position System Slow Response Bank 1	P000C - Intake Camshaft Position System Slow Response Bank 2	P000D - Exhaust Camshaft Position System Slow Response Bank 2	P0010 - Camshaft Position Actuator Control Circuit Open	P0011 - Camshaft Position System Performance	P0013 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 1	P0014 - Exhaust Camshaft Position System Performance Bank 1	P0016 - Crankshaft to Camshaft Correlation	P0017 - Crankshaft to Exhaust Camshaft Correlation Bank 1	P0018 - Crankshaft to Intake Camshaft Correlation Bank 2	P0019 - Crankshaft to Exhaust Camshaft Correlation Bank 2	P0020 - Intake Camshaft Position Actuator Control Circuit Open Bank 2	P0021 - Intake Camshaft Position System Performance Bank 2	P0023 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 2	P0024 - Exhaust Camshaft Position System Performance Bank 2	P0030 - Oxygen Sensor Heater Control Circuit Open Bank 1 Sensor 1	P0031 - Oxygen Sensor Heater Control Circuit Low Bank 1 Sensor 1	P0032 - Oxygen Sensor Heater Control Circuit High Bank 1 Sensor 1	P0050 - Oxygen Sensor Heater Control Circuit Open Bank 2 Sensor 1	P0051 - Oxygen Sensor Heater Control Circuit Low Bank 2 Sensor 1	P0052 - Oxygen Sensor Heater Control Circuit High Bank 2 Sensor 1	CONTINUED NEXT LINE
	P0096 - Intake Air Temperature Sensor 2 Performance	P0097 - Intake Air Temperature Sensor 2 Circuit Low	P0098 - Intake Air Temperature Sensor 2 Circuit High	P0099 - Intake Air Temperature Sensor 2 Circuit Erratic	P00A6 - Intake Air Temperature Sensor 2 Performance Bank 2	P00A7 - Intake Air Temperature Sensor 2 Circuit Low Bank 2	P00A8 - Intake Air Temperature Sensor 2 Circuit High Bank 2	P00A9 - Intake Air Temperature Sensor 2 Circuit Erratic Bank 2	P0116 - Engine Coolant Temperature Sensor Performance	P0117 - Engine Coolant Temperature Sensor Circuit Low	P0118 - Engine Coolant Temperature Sensor Circuit High	P0119 - Engine Coolant Temperature Sensor Circuit Erratic	P0121 - Throttle Position Sensor Performance	P0122 - Throttle Position Sensor Circuit Low	P0123 - Throttle Position Sensor Circuit High	P0130 - HO2S Circuit Bank 1 Sensor 1	P0131 - Oxygen Sensor Circuit Low Bank 1 Sensor 1	P0132 - Oxygen Sensor Circuit High Bank 1 Sensor 1	P0133 - Oxygen Sensor Slow Response Bank 1 Sensor 1	P0150 - HO2S Circuit Bank 2 Sensor 1	P0151 - Oxygen Sensor Circuit Low Bank 2 Sensor 1	P0152 - Oxygen Sensor Circuit High Bank 2 Sensor 1	CONTINUED NEXT LINE
	P0153 - Oxygen Sensor Slow Response Bank 2 Sensor 1	P0221 - Throttle Position Sensor 2 Performance	P0222 - Throttle Position Sensor 2 Circuit Low	P0223 - Throttle Position Sensor 2 Circuit High	P0226 - Throttle Position Sensor Performance Bank 2	P0227 - Throttle Position Sensor Circuit Low Bank 2	P0228 - Throttle Position Sensor Circuit High Bank 2	P0300 - Engine Misfire Detected	P0301 - Cylinder 1 Misfire Detected	P0302 - Cylinder 2 Misfire Detected	P0303 - Cylinder 3 Misfire Detected	P0304 - Cylinder 4 Misfire Detected	P0305 - Cylinder 5 Misfire Detected	P0306 - Cylinder 6 Misfire Detected	P0307 - Cylinder 7 Misfire Detected	P0308 - Cylinder 8 Misfire Detected	P0335 - Crankshaft Position Sensor Circuit	P0336 - Crankshaft Position Sensor Performance	P034A - Crankshaft Position Sensor Start Position Incorrect	P034B - Crankshaft Position Sensor Direction Incorrect	P0443 - Evaporative Emission Purge Solenoid Control Circuit Open	P0458 - Evaporative Emission Purge Solenoid Control Circuit Low	CONTINUED NEXT LINE
	P0459 - Evaporative Emission Purge Solenoid Control Circuit High	P0496 - Evaporative Emission System Flow During Non-Purge	P04AB - Evaporative Emission Purge Solenoid Control Circuit Open Bank 2	P04AC - Evaporative Emission Purge Solenoid Control Circuit Low Bank 2	P04AD - Evaporative Emission Purge Solenoid Control Circuit High Bank 2	P04AE - Evaporative Emission Purge Solenoid Performance Bank 2	P04DF - Evaporative Emission Purge Solenoid Performance Bank 1	P05CC - Cold Start Intake Camshaft Position System Performance Bank 1	P05CD - Cold Start Intake Camshaft Position System Performance Bank 2	P0641 - Sensor Reference Voltage 1 Circuit Open	P064D - Control Module Oxygen Sensor Bank 1 Sensor 1 System Performance	P064E - Control Module Oxygen Sensor Bank 2 Sensor 1 System Performance	P0651 - Sensor Reference Voltage 2 Circuit Open	P0697 - Sensor Reference Voltage 3 Circuit Open	P06A3 - Sensor Reference Voltage 4 Circuit Open	P2088 - Camshaft Position Actuator Control Circuit Low	P2089 - Camshaft Position Actuator Control Circuit High	P2090 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 1	P2091 - Exhaust Camshaft Position Actuator Control Circuit High Bank 1	P2092 - Intake Camshaft Position Actuator Control Circuit Low Bank 2	P2093 - Intake Camshaft Position Actuator Control Circuit High Bank 2	P2094 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 2	CONTINUED NEXT LINE
	P2095 - Exhaust Camshaft Position Actuator Control Circuit High Bank 2	P2096 - Post Catalyst Fuel Trim System Low Limit Bank 1	P2097 - Post Catalyst Fuel Trim System High Limit Bank 1	P2098 - Post Catalyst Fuel Trim System Low Limit Bank 2	P2099 - Post Catalyst Fuel Trim System High Limit Bank 2	P212B - Throttle Position Sensor 2 Performance Bank 2	P212C - Throttle Position Sensor 2 Circuit Low Bank 2	P212D - Throttle Position Sensor 2 Circuit High Bank 2	P2176 - Minimum Throttle Position Not Learned	P218A - Minimum Throttle Position Not Learned Bank 2	P2195 - Oxygen Sensor Signal Biased Lean Bank 1 Sensor 1	P2196 - Oxygen Sensor Signal Biased Rich Bank 1 Sensor 1	P2197 - Oxygen Sensor Signal Biased Lean Bank 2 Sensor 1	P2198 - Oxygen Sensor Signal Biased Rich Bank 2 Sensor 1	P2237 - Oxygen Sensor Pumping Current Control Circuit Open Bank 1 Sensor 1	P2240 - Oxygen Sensor Pumping Current Control Circuit Open Bank 2 Sensor 1	P2251 - Oxygen Sensor Low Reference Circuit Open Bank 1 Sensor 1	P2254 - Oxygen Sensor Low Reference Circuit Open Bank 2 Sensor 1	P2297 - Oxygen Sensor Out of Range During Deceleration Bank 1 Sensor 1	P2298 - Oxygen Sensor Out of Range During Deceleration Bank 2 Sensor 1	P2626 - Oxygen Sensor Pumping Current Trim Circuit Open Bank 1 Sensor 1	P2629 - Oxygen Sensor Pumping Current Trim Circuit Open Bank 2 Sensor 1	CONTINUED NEXT LINE
	P30D8 - Control Module Processor Serial Peripheral Interface Bus 3	P30D9 - Control Module Processor Serial Peripheral Interface Bus 4	U0607 - Lost Communication With Throttle Position Sensor Bank 1 Sensor 2	U0688 - Lost Communication With Throttle Position Sensor Bank 2 Sensor 2	U136D - Invalid Data Received From Throttle Position Sensor 2	U136F - Invalid Data Received From Throttle Position Sensor Bank 2 Sensor 2	END																
P2189 - Fuel Trim System Lean at Idle Bank 2	P000A - Camshaft Position System Slow Response Bank 1	P000B - Exhaust Camshaft Position System Slow Response Bank 1	P000C - Intake Camshaft Position System Slow Response Bank 2	P000D - Exhaust Camshaft Position System Slow Response Bank 2	P0010 - Camshaft Position Actuator Control Circuit Open	P0011 - Camshaft Position System Performance	P0013 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 1	P0014 - Exhaust Camshaft Position System Performance Bank 1	P0016 - Crankshaft to Camshaft Correlation	P0017 - Crankshaft to Exhaust Camshaft Correlation Bank 1	P0018 - Crankshaft to Intake Camshaft Correlation Bank 2	P0019 - Crankshaft to Exhaust Camshaft Correlation Bank 2	P0020 - Intake Camshaft Position Actuator Control Circuit Open Bank 2	P0021 - Intake Camshaft Position System Performance Bank 2	P0023 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 2	P0024 - Exhaust Camshaft Position System Performance Bank 2	P0030 - Oxygen Sensor Heater Control Circuit Open Bank 1 Sensor 1	P0031 - Oxygen Sensor Heater Control Circuit Low Bank 1 Sensor 1	P0032 - Oxygen Sensor Heater Control Circuit High Bank 1 Sensor 1	P0050 - Oxygen Sensor Heater Control Circuit Open Bank 2 Sensor 1	P0051 - Oxygen Sensor Heater Control Circuit Low Bank 2 Sensor 1	P0052 - Oxygen Sensor Heater Control Circuit High Bank 2 Sensor 1	CONTINUED NEXT LINE
	P0096 - Intake Air Temperature Sensor 2 Performance	P0097 - Intake Air Temperature Sensor 2 Circuit Low	P0098 - Intake Air Temperature Sensor 2 Circuit High	P0099 - Intake Air Temperature Sensor 2 Circuit Erratic	P00A6 - Intake Air Temperature Sensor 2 Performance Bank 2	P00A7 - Intake Air Temperature Sensor 2 Circuit Low Bank 2	P00A8 - Intake Air Temperature Sensor 2 Circuit High Bank 2	P00A9 - Intake Air Temperature Sensor 2 Circuit Erratic Bank 2	P0116 - Engine Coolant Temperature Sensor Performance	P0117 - Engine Coolant Temperature Sensor Circuit Low	P0118 - Engine Coolant Temperature Sensor Circuit High	P0119 - Engine Coolant Temperature Sensor Circuit Erratic	P0121 - Throttle Position Sensor Performance	P0122 - Throttle Position Sensor Circuit Low	P0123 - Throttle Position Sensor Circuit High	P0130 - HO2S Circuit Bank 1 Sensor 1	P0131 - Oxygen Sensor Circuit Low Bank 1 Sensor 1	P0132 - Oxygen Sensor Circuit High Bank 1 Sensor 1	P0133 - Oxygen Sensor Slow Response Bank 1 Sensor 1	P0150 - HO2S Circuit Bank 2 Sensor 1	P0151 - Oxygen Sensor Circuit Low Bank 2 Sensor 1	P0152 - Oxygen Sensor Circuit High Bank 2 Sensor 1	CONTINUED NEXT LINE
	P0153 - Oxygen Sensor Slow Response Bank 2 Sensor 1	P0221 - Throttle Position Sensor 2 Performance	P0222 - Throttle Position Sensor 2 Circuit Low	P0223 - Throttle Position Sensor 2 Circuit High	P0226 - Throttle Position Sensor Performance Bank 2	P0227 - Throttle Position Sensor Circuit Low Bank 2	P0228 - Throttle Position Sensor Circuit High Bank 2	P0300 - Engine Misfire Detected	P0301 - Cylinder 1 Misfire Detected	P0302 - Cylinder 2 Misfire Detected	P0303 - Cylinder 3 Misfire Detected	P0304 - Cylinder 4 Misfire Detected	P0305 - Cylinder 5 Misfire Detected	P0306 - Cylinder 6 Misfire Detected	P0307 - Cylinder 7 Misfire Detected	P0308 - Cylinder 8 Misfire Detected	P0335 - Crankshaft Position Sensor Circuit	P0336 - Crankshaft Position Sensor Performance	P034A - Crankshaft Position Sensor Start Position Incorrect	P034B - Crankshaft Position Sensor Direction Incorrect	P0443 - Evaporative Emission Purge Solenoid Control Circuit Open	P0458 - Evaporative Emission Purge Solenoid Control Circuit Low	CONTINUED NEXT LINE
	P0459 - Evaporative Emission Purge Solenoid Control Circuit High	P0496 - Evaporative Emission System Flow During Non-Purge	P04AB - Evaporative Emission Purge Solenoid Control Circuit Open Bank 2	P04AC - Evaporative Emission Purge Solenoid Control Circuit Low Bank 2	P04AD - Evaporative Emission Purge Solenoid Control Circuit High Bank 2	P04AE - Evaporative Emission Purge Solenoid Performance Bank 2	P04DF - Evaporative Emission Purge Solenoid Performance Bank 1	P05CC - Cold Start Intake Camshaft Position System Performance Bank 1	P05CD - Cold Start Intake Camshaft Position System Performance Bank 2	P0641 - Sensor Reference Voltage 1 Circuit Open	P064D - Control Module Oxygen Sensor Bank 1 Sensor 1 System Performance	P064E - Control Module Oxygen Sensor Bank 2 Sensor 1 System Performance	P0651 - Sensor Reference Voltage 2 Circuit Open	P0697 - Sensor Reference Voltage 3 Circuit Open	P06A3 - Sensor Reference Voltage 4 Circuit Open	P2088 - Camshaft Position Actuator Control Circuit Low	P2089 - Camshaft Position Actuator Control Circuit High	P2090 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 1	P2091 - Exhaust Camshaft Position Actuator Control Circuit High Bank 1	P2092 - Intake Camshaft Position Actuator Control Circuit Low Bank 2	P2093 - Intake Camshaft Position Actuator Control Circuit High Bank 2	P2094 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 2	CONTINUED NEXT LINE
	P2095 - Exhaust Camshaft Position Actuator Control Circuit High Bank 2	P2096 - Post Catalyst Fuel Trim System Low Limit Bank 1	P2097 - Post Catalyst Fuel Trim System High Limit Bank 1	P2098 - Post Catalyst Fuel Trim System Low Limit Bank 2	P2099 - Post Catalyst Fuel Trim System High Limit Bank 2	P212B - Throttle Position Sensor 2 Performance Bank 2	P212C - Throttle Position Sensor 2 Circuit Low Bank 2	P212D - Throttle Position Sensor 2 Circuit High Bank 2	P2176 - Minimum Throttle Position Not Learned	P218A - Minimum Throttle Position Not Learned Bank 2	P2195 - Oxygen Sensor Signal Biased Lean Bank 1 Sensor 1	P2196 - Oxygen Sensor Signal Biased Rich Bank 1 Sensor 1	P2197 - Oxygen Sensor Signal Biased Lean Bank 2 Sensor 1	P2198 - Oxygen Sensor Signal Biased Rich Bank 2 Sensor 1	P2237 - Oxygen Sensor Pumping Current Control Circuit Open Bank 1 Sensor 1	P2240 - Oxygen Sensor Pumping Current Control Circuit Open Bank 2 Sensor 1	P2251 - Oxygen Sensor Low Reference Circuit Open Bank 1 Sensor 1	P2254 - Oxygen Sensor Low Reference Circuit Open Bank 2 Sensor 1	P2297 - Oxygen Sensor Out of Range During Deceleration Bank 1 Sensor 1	P2298 - Oxygen Sensor Out of Range During Deceleration Bank 2 Sensor 1	P2626 - Oxygen Sensor Pumping Current Trim Circuit Open Bank 1 Sensor 1	P2629 - Oxygen Sensor Pumping Current Trim Circuit Open Bank 2 Sensor 1	CONTINUED NEXT LINE
	P30D8 - Control Module Processor Serial Peripheral Interface Bus 3	P30D9 - Control Module Processor Serial Peripheral Interface Bus 4	U0607 - Lost Communication With Throttle Position Sensor Bank 1 Sensor 2	U0688 - Lost Communication With Throttle Position Sensor Bank 2 Sensor 2	U136D - Invalid Data Received From Throttle Position Sensor 2	U136F - Invalid Data Received From Throttle Position Sensor Bank 2 Sensor 2	END																
P218A - Minimum Throttle Position Not Learned Bank 2	P0226 - Throttle Position Sensor Performance Bank 2	P0227 - Throttle Position Sensor Circuit Low Bank 2	P0228 - Throttle Position Sensor Circuit High Bank 2	P0639 - Throttle Actuator Control Command Performance Bank 2	P210A - Throttle Actuator Control Motor Control Circuit Open Bank 2	P210B - Throttle Actuator Position Performance Bank 2	P212B - Throttle Position Sensor 2 Performance Bank 2	P212C - Throttle Position Sensor 2 Circuit Low Bank 2	P212D - Throttle Position Sensor 2 Circuit High Bank 2	P30D7 - Control Module Processor Serial Peripheral Interface Bus 2	END												
P2190 - Fuel Trim System Rich at Idle Bank 2	P000A - Camshaft Position System Slow Response Bank 1	P000B - Exhaust Camshaft Position System Slow Response Bank 1	P000C - Intake Camshaft Position System Slow Response Bank 2	P000D - Exhaust Camshaft Position System Slow Response Bank 2	P0010 - Camshaft Position Actuator Control Circuit Open	P0011 - Camshaft Position System Performance	P0013 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 1	P0014 - Exhaust Camshaft Position System Performance Bank 1	P0016 - Crankshaft to Camshaft Correlation	P0017 - Crankshaft to Exhaust Camshaft Correlation Bank 1	P0018 - Crankshaft to Intake Camshaft Correlation Bank 2	P0019 - Crankshaft to Exhaust Camshaft Correlation Bank 2	P0020 - Intake Camshaft Position Actuator Control Circuit Open Bank 2	P0021 - Intake Camshaft Position System Performance Bank 2	P0023 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 2	P0024 - Exhaust Camshaft Position System Performance Bank 2	P0030 - Oxygen Sensor Heater Control Circuit Open Bank 1 Sensor 1	P0031 - Oxygen Sensor Heater Control Circuit Low Bank 1 Sensor 1	P0032 - Oxygen Sensor Heater Control Circuit High Bank 1 Sensor 1	P0050 - Oxygen Sensor Heater Control Circuit Open Bank 2 Sensor 1	P0051 - Oxygen Sensor Heater Control Circuit Low Bank 2 Sensor 1	P0052 - Oxygen Sensor Heater Control Circuit High Bank 2 Sensor 1	CONTINUED NEXT LINE
	P0096 - Intake Air Temperature Sensor 2 Performance	P0097 - Intake Air Temperature Sensor 2 Circuit Low	P0098 - Intake Air Temperature Sensor 2 Circuit High	P0099 - Intake Air Temperature Sensor 2 Circuit Erratic	P00A6 - Intake Air Temperature Sensor 2 Performance Bank 2	P00A7 - Intake Air Temperature Sensor 2 Circuit Low Bank 2	P00A8 - Intake Air Temperature Sensor 2 Circuit High Bank 2	P00A9 - Intake Air Temperature Sensor 2 Circuit Erratic Bank 2	P0116 - Engine Coolant Temperature Sensor Performance	P0117 - Engine Coolant Temperature Sensor Circuit Low	P0118 - Engine Coolant Temperature Sensor Circuit High	P0119 - Engine Coolant Temperature Sensor Circuit Erratic	P0121 - Throttle Position Sensor Performance	P0122 - Throttle Position Sensor Circuit Low	P0123 - Throttle Position Sensor Circuit High	P0130 - HO2S Circuit Bank 1 Sensor 1	P0131 - Oxygen Sensor Circuit Low Bank 1 Sensor 1	P0132 - Oxygen Sensor Circuit High Bank 1 Sensor 1	P0133 - Oxygen Sensor Slow Response Bank 1 Sensor 1	P0150 - HO2S Circuit Bank 2 Sensor 1	P0151 - Oxygen Sensor Circuit Low Bank 2 Sensor 1	P0152 - Oxygen Sensor Circuit High Bank 2 Sensor 1	CONTINUED NEXT LINE
	P0153 - Oxygen Sensor Slow Response Bank 2 Sensor 1	P0221 - Throttle Position Sensor 2 Performance	P0222 - Throttle Position Sensor 2 Circuit Low	P0223 - Throttle Position Sensor 2 Circuit High	P0226 - Throttle Position Sensor Performance Bank 2	P0227 - Throttle Position Sensor Circuit Low Bank 2	P0228 - Throttle Position Sensor Circuit High Bank 2	P0300 - Engine Misfire Detected	P0301 - Cylinder 1 Misfire Detected	P0302 - Cylinder 2 Misfire Detected	P0303 - Cylinder 3 Misfire Detected	P0304 - Cylinder 4 Misfire Detected	P0305 - Cylinder 5 Misfire Detected	P0306 - Cylinder 6 Misfire Detected	P0307 - Cylinder 7 Misfire Detected	P0308 - Cylinder 8 Misfire Detected	P0335 - Crankshaft Position Sensor Circuit	P0336 - Crankshaft Position Sensor Performance	P034A - Crankshaft Position Sensor Start Position Incorrect	P034B - Crankshaft Position Sensor Direction Incorrect	P0443 - Evaporative Emission Purge Solenoid Control Circuit Open	P0458 - Evaporative Emission Purge Solenoid Control Circuit Low	CONTINUED NEXT LINE
	P0459 - Evaporative Emission Purge Solenoid Control Circuit High	P0496 - Evaporative Emission System Flow During Non-Purge	P04AB - Evaporative Emission Purge Solenoid Control Circuit Open Bank 2	P04AC - Evaporative Emission Purge Solenoid Control Circuit Low Bank 2	P04AD - Evaporative Emission Purge Solenoid Control Circuit High Bank 2	P04AE - Evaporative Emission Purge Solenoid Performance Bank 2	P04DF - Evaporative Emission Purge Solenoid Performance Bank 1	P05CC - Cold Start Intake Camshaft Position System Performance Bank 1	P05CD - Cold Start Intake Camshaft Position System Performance Bank 2	P0641 - Sensor Reference Voltage 1 Circuit Open	P064D - Control Module Oxygen Sensor Bank 1 Sensor 1 System Performance	P064E - Control Module Oxygen Sensor Bank 2 Sensor 1 System Performance	P0651 - Sensor Reference Voltage 2 Circuit Open	P0697 - Sensor Reference Voltage 3 Circuit Open	P06A3 - Sensor Reference Voltage 4 Circuit Open	P2088 - Camshaft Position Actuator Control Circuit Low	P2089 - Camshaft Position Actuator Control Circuit High	P2090 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 1	P2091 - Exhaust Camshaft Position Actuator Control Circuit High Bank 1	P2092 - Intake Camshaft Position Actuator Control Circuit Low Bank 2	P2093 - Intake Camshaft Position Actuator Control Circuit High Bank 2	P2094 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 2	CONTINUED NEXT LINE
	P2095 - Exhaust Camshaft Position Actuator Control Circuit High Bank 2	P2096 - Post Catalyst Fuel Trim System Low Limit Bank 1	P2097 - Post Catalyst Fuel Trim System High Limit Bank 1	P2098 - Post Catalyst Fuel Trim System Low Limit Bank 2	P2099 - Post Catalyst Fuel Trim System High Limit Bank 2	P212B - Throttle Position Sensor 2 Performance Bank 2	P212C - Throttle Position Sensor 2 Circuit Low Bank 2	P212D - Throttle Position Sensor 2 Circuit High Bank 2	P2176 - Minimum Throttle Position Not Learned	P218A - Minimum Throttle Position Not Learned Bank 2	P2195 - Oxygen Sensor Signal Biased Lean Bank 1 Sensor 1	P2196 - Oxygen Sensor Signal Biased Rich Bank 1 Sensor 1	P2197 - Oxygen Sensor Signal Biased Lean Bank 2 Sensor 1	P2198 - Oxygen Sensor Signal Biased Rich Bank 2 Sensor 1	P2237 - Oxygen Sensor Pumping Current Control Circuit Open Bank 1 Sensor 1	P2240 - Oxygen Sensor Pumping Current Control Circuit Open Bank 2 Sensor 1	P2251 - Oxygen Sensor Low Reference Circuit Open Bank 1 Sensor 1	P2254 - Oxygen Sensor Low Reference Circuit Open Bank 2 Sensor 1	P2297 - Oxygen Sensor Out of Range During Deceleration Bank 1 Sensor 1	P2298 - Oxygen Sensor Out of Range During Deceleration Bank 2 Sensor 1	P2626 - Oxygen Sensor Pumping Current Trim Circuit Open Bank 1 Sensor 1	P2629 - Oxygen Sensor Pumping Current Trim Circuit Open Bank 2 Sensor 1	CONTINUED NEXT LINE
	P30D8 - Control Module Processor Serial Peripheral Interface Bus 3	P30D9 - Control Module Processor Serial Peripheral Interface Bus 4	U0607 - Lost Communication With Throttle Position Sensor Bank 1 Sensor 2	U0688 - Lost Communication With Throttle Position Sensor Bank 2 Sensor 2	U136D - Invalid Data Received From Throttle Position Sensor 2	U136F - Invalid Data Received From Throttle Position Sensor Bank 2 Sensor 2	END																

The DTCs in this column is inhibited by the DTCs listed to the right	The DTCs in these columns inhibit the DTC to the left						The DTCs in these columns inhibit the DTC to the left						The DTCs in these columns inhibit the DTC to the left						The DTCs in these columns inhibit the DTC to the left				
Inhibited DTC	Fault Active DTCs						Fault Active DTCs						Fault Active DTCs						Fault Active DTCs				
P2195 - Oxygen Sensor Signal Biased Lean Bank 1 Sensor 1	P0030 - Oxygen Sensor Heater Control Circuit Open Bank 1 Sensor 1	P0031 - Oxygen Sensor Heater Control Circuit Low Bank 1 Sensor 1	P0032 - Oxygen Sensor Heater Control Circuit High Bank 1 Sensor 1	P0036 - Oxygen Sensor Heater Control Circuit Open Bank 1 Sensor 2	P0037 - Oxygen Sensor Heater Control Circuit Low Bank 1 Sensor 2	P0038 - Oxygen Sensor Heater Control Circuit High Bank 1 Sensor 2	P0101 - Mass Air Flow Sensor Performance	P0102 - Mass Air Flow Sensor Circuit Low	P0103 - Mass Air Flow Sensor Circuit High	P0106 - Manifold Absolute Pressure Sensor Performance	P0107 - Manifold Absolute Pressure Sensor Circuit Low	P0108 - Manifold Absolute Pressure Sensor Circuit High	P010B - Mass Air Flow Sensor 2 Performance	P010C - Mass Air Flow Sensor 2 Circuit Low	P010D - Mass Air Flow Sensor 2 Circuit High	P0130 - HO2S Circuit Bank 1 Sensor 1	P0131 - Oxygen Sensor Circuit Low Bank 1 Sensor 1	P0132 - Oxygen Sensor Circuit High Bank 1 Sensor 1	P0133 - Oxygen Sensor Slow Response Bank 1 Sensor 1	P0137 - Oxygen Sensor Circuit Low Bank 1 Sensor 2	P0138 - Oxygen Sensor Circuit High Bank 1 Sensor 2	P0140 - Oxygen Sensor Circuit Insufficient Activity Bank 1 Sensor 2	CONTINUED NEXT LINE
	P0141 - Oxygen Sensor Heater Performance Bank 1 Sensor 2	P0300 - Engine Misfire Detected	P0301 - Cylinder 1 Misfire Detected	P0302 - Cylinder 2 Misfire Detected	P0303 - Cylinder 3 Misfire Detected	P0304 - Cylinder 4 Misfire Detected	P0305 - Cylinder 5 Misfire Detected	P0306 - Cylinder 6 Misfire Detected	P0307 - Cylinder 7 Misfire Detected	P0308 - Cylinder 8 Misfire Detected	P0443 - Evaporative Emission Purge Solenoid Control Circuit Open	P0458 - Evaporative Emission Purge Solenoid Control Circuit Low	P0459 - Evaporative Emission Purge Solenoid Control Circuit High	P0496 - Evaporative Emission System Flow During Non-Purge	P0497 - Evaporative Emission System No Flow During Purge	P04AB - Evaporative Emission Purge Solenoid Control Circuit Open Bank 2	P04AC - Evaporative Emission Purge Solenoid Control Circuit Low Bank 2	P04AD - Evaporative Emission Purge Solenoid Control Circuit High Bank 2	P04AE - Evaporative Emission Purge Solenoid Performance Bank 2	P04DF - Evaporative Emission Purge Solenoid Performance Bank 1	P0641 - Sensor Reference Voltage 1 Circuit Open	P064D - Control Module Oxygen Sensor Bank 1 Sensor 1 System Performance	CONTINUED NEXT LINE
	P0651 - Sensor Reference Voltage 2 Circuit Open	P0697 - Sensor Reference Voltage 3 Circuit Open	P06A3 - Sensor Reference Voltage 4 Circuit Open	P2232 - Oxygen Sensor Signal Circuit Shorted to Heater Circuit Bank 1 Sensor 2	P2237 - Oxygen Sensor Pumping Current Control Circuit Open Bank 1 Sensor 1	P2251 - Oxygen Sensor Low Reference Circuit Open Bank 1 Sensor 1	P2270 - Oxygen Sensor Signal Stuck Lean Bank 1 Sensor 2	P2271 - Oxygen Sensor Signal Stuck Rich Bank 1 Sensor 2	P2297 - Oxygen Sensor Out of Range During Deceleration Bank 1 Sensor 1	P2626 - Oxygen Sensor Pumping Current Trim Circuit Open Bank 1 Sensor 1	P2A0B - Manifold Absolute Pressure Sensor Performance Bank 2	P2A0C - Manifold Absolute Pressure Sensor Circuit Low Bank 2	P2A0D - Manifold Absolute Pressure Sensor Circuit High Bank 2	P30D8 - Control Module Processor Serial Peripheral Interface Bus 3	P318A - Cylinder 2 Reactivation Performance - Trapped High Pressure Exhaust Charge	P318B - Cylinder 3 Reactivation Performance - Trapped High Pressure Exhaust Charge	P318D - Cylinder 5 Reactivation Performance - Trapped High Pressure Exhaust Charge	P3190 - Cylinder 8 Reactivation Performance - Trapped High Pressure Exhaust Charge	P3409 - Cylinder 2 Deactivation Solenoid Control Circuit Open	P3411 - Cylinder 2 Deactivation Solenoid Control Circuit Low	P3412 - Cylinder 2 Deactivation Solenoid Control Circuit High	P3417 - Cylinder 3 Deactivation Solenoid Control Circuit Open	CONTINUED NEXT LINE
	P3419 - Cylinder 3 Deactivation Solenoid Control Circuit Low	P3420 - Cylinder 3 Deactivation Solenoid Control Circuit High	P3433 - Cylinder 5 Deactivation Solenoid Control Circuit Open	P3435 - Cylinder 5 Deactivation Solenoid Control Circuit Low	P3436 - Cylinder 5 Deactivation Solenoid Control Circuit High	P3457 - Cylinder 8 Deactivation Solenoid Control Circuit Open	P3459 - Cylinder 8 Deactivation Solenoid Control Circuit Low	P3460 - Cylinder 8 Deactivation Solenoid Control Circuit High	P3499 - Cylinder 2 Deactivation Performance	P349A - Cylinder 3 Deactivation Performance	P349C - Cylinder 5 Deactivation Performance	P349F - Cylinder 8 Deactivation Performance	END										
P2196 - Oxygen Sensor Signal Biased Rich Bank 1 Sensor 1	P0030 - Oxygen Sensor Heater Control Circuit Open Bank 1 Sensor 1	P0031 - Oxygen Sensor Heater Control Circuit Low Bank 1 Sensor 1	P0032 - Oxygen Sensor Heater Control Circuit High Bank 1 Sensor 1	P0036 - Oxygen Sensor Heater Control Circuit Open Bank 1 Sensor 2	P0037 - Oxygen Sensor Heater Control Circuit Low Bank 1 Sensor 2	P0038 - Oxygen Sensor Heater Control Circuit High Bank 1 Sensor 2	P0101 - Mass Air Flow Sensor Performance	P0102 - Mass Air Flow Sensor Circuit Low	P0103 - Mass Air Flow Sensor Circuit High	P0106 - Manifold Absolute Pressure Sensor Performance	P0107 - Manifold Absolute Pressure Sensor Circuit Low	P0108 - Manifold Absolute Pressure Sensor Circuit High	P010B - Mass Air Flow Sensor 2 Performance	P010C - Mass Air Flow Sensor 2 Circuit Low	P010D - Mass Air Flow Sensor 2 Circuit High	P0130 - HO2S Circuit Bank 1 Sensor 1	P0131 - Oxygen Sensor Circuit Low Bank 1 Sensor 1	P0132 - Oxygen Sensor Circuit High Bank 1 Sensor 1	P0133 - Oxygen Sensor Slow Response Bank 1 Sensor 1	P0137 - Oxygen Sensor Circuit Low Bank 1 Sensor 2	P0138 - Oxygen Sensor Circuit High Bank 1 Sensor 2	P0140 - Oxygen Sensor Circuit Insufficient Activity Bank 1 Sensor 2	CONTINUED NEXT LINE
	P0141 - Oxygen Sensor Heater Performance Bank 1 Sensor 2	P0300 - Engine Misfire Detected	P0301 - Cylinder 1 Misfire Detected	P0302 - Cylinder 2 Misfire Detected	P0303 - Cylinder 3 Misfire Detected	P0304 - Cylinder 4 Misfire Detected	P0305 - Cylinder 5 Misfire Detected	P0306 - Cylinder 6 Misfire Detected	P0307 - Cylinder 7 Misfire Detected	P0308 - Cylinder 8 Misfire Detected	P0443 - Evaporative Emission Purge Solenoid Control Circuit Open	P0458 - Evaporative Emission Purge Solenoid Control Circuit Low	P0459 - Evaporative Emission Purge Solenoid Control Circuit High	P0496 - Evaporative Emission System Flow During Non-Purge	P0497 - Evaporative Emission System No Flow During Purge	P04AB - Evaporative Emission Purge Solenoid Control Circuit Open Bank 2	P04AC - Evaporative Emission Purge Solenoid Control Circuit Low Bank 2	P04AD - Evaporative Emission Purge Solenoid Control Circuit High Bank 2	P04AE - Evaporative Emission Purge Solenoid Performance Bank 2	P04DF - Evaporative Emission Purge Solenoid Performance Bank 1	P0641 - Sensor Reference Voltage 1 Circuit Open	P064D - Control Module Oxygen Sensor Bank 1 Sensor 1 System Performance	CONTINUED NEXT LINE
	P0651 - Sensor Reference Voltage 2 Circuit Open	P0697 - Sensor Reference Voltage 3 Circuit Open	P06A3 - Sensor Reference Voltage 4 Circuit Open	P2232 - Oxygen Sensor Signal Circuit Shorted to Heater Circuit Bank 1 Sensor 2	P2237 - Oxygen Sensor Pumping Current Control Circuit Open Bank 1 Sensor 1	P2251 - Oxygen Sensor Low Reference Circuit Open Bank 1 Sensor 1	P2270 - Oxygen Sensor Signal Stuck Lean Bank 1 Sensor 2	P2271 - Oxygen Sensor Signal Stuck Rich Bank 1 Sensor 2	P2297 - Oxygen Sensor Out of Range During Deceleration Bank 1 Sensor 1	P2626 - Oxygen Sensor Pumping Current Trim Circuit Open Bank 1 Sensor 1	P2A0B - Manifold Absolute Pressure Sensor Performance Bank 2	P2A0C - Manifold Absolute Pressure Sensor Circuit Low Bank 2	P2A0D - Manifold Absolute Pressure Sensor Circuit High Bank 2	P30D8 - Control Module Processor Serial Peripheral Interface Bus 3	P318A - Cylinder 2 Reactivation Performance - Trapped High Pressure Exhaust Charge	P318B - Cylinder 3 Reactivation Performance - Trapped High Pressure Exhaust Charge	P318D - Cylinder 5 Reactivation Performance - Trapped High Pressure Exhaust Charge	P3190 - Cylinder 8 Reactivation Performance - Trapped High Pressure Exhaust Charge	P3409 - Cylinder 2 Deactivation Solenoid Control Circuit Open	P3411 - Cylinder 2 Deactivation Solenoid Control Circuit Low	P3412 - Cylinder 2 Deactivation Solenoid Control Circuit High	P3417 - Cylinder 3 Deactivation Solenoid Control Circuit Open	CONTINUED NEXT LINE
	P3419 - Cylinder 3 Deactivation Solenoid Control Circuit Low	P3420 - Cylinder 3 Deactivation Solenoid Control Circuit High	P3433 - Cylinder 5 Deactivation Solenoid Control Circuit Open	P3435 - Cylinder 5 Deactivation Solenoid Control Circuit Low	P3436 - Cylinder 5 Deactivation Solenoid Control Circuit High	P3457 - Cylinder 8 Deactivation Solenoid Control Circuit Open	P3459 - Cylinder 8 Deactivation Solenoid Control Circuit Low	P3460 - Cylinder 8 Deactivation Solenoid Control Circuit High	P3499 - Cylinder 2 Deactivation Performance	P349A - Cylinder 3 Deactivation Performance	P349C - Cylinder 5 Deactivation Performance	P349F - Cylinder 8 Deactivation Performance	END										
P2197 - Oxygen Sensor Signal Biased Lean Bank 2 Sensor 1	P0050 - Oxygen Sensor Heater Control Circuit Open Bank 2 Sensor 1	P0051 - Oxygen Sensor Heater Control Circuit Low Bank 2 Sensor 1	P0052 - Oxygen Sensor Heater Control Circuit High Bank 2 Sensor 1	P0056 - Oxygen Sensor Heater Control Circuit Open Bank 2 Sensor 2	P0057 - Oxygen Sensor Heater Control Circuit Low Bank 2 Sensor 2	P0058 - Oxygen Sensor Heater Control Circuit High Bank 2 Sensor 2	P0101 - Mass Air Flow Sensor Performance	P0102 - Mass Air Flow Sensor Circuit Low	P0103 - Mass Air Flow Sensor Circuit High	P0106 - Manifold Absolute Pressure Sensor Performance	P0107 - Manifold Absolute Pressure Sensor Circuit Low	P0108 - Manifold Absolute Pressure Sensor Circuit High	P010B - Mass Air Flow Sensor 2 Performance	P010C - Mass Air Flow Sensor 2 Circuit Low	P010D - Mass Air Flow Sensor 2 Circuit High	P0150 - HO2S Circuit Bank 2 Sensor 1	P0151 - Oxygen Sensor Circuit Low Bank 2 Sensor 1	P0152 - Oxygen Sensor Circuit High Bank 2 Sensor 1	P0153 - Oxygen Sensor Slow Response Bank 2 Sensor 1	P0157 - Oxygen Sensor Circuit Low Bank 2 Sensor 2	P0158 - Oxygen Sensor Circuit High Bank 2 Sensor 2	P0160 - Oxygen Sensor Circuit Insufficient Activity Bank 2 Sensor 2	CONTINUED NEXT LINE
	P0161 - Oxygen Sensor Heater Performance Bank 2 Sensor 2	P0300 - Engine Misfire Detected	P0301 - Cylinder 1 Misfire Detected	P0302 - Cylinder 2 Misfire Detected	P0303 - Cylinder 3 Misfire Detected	P0304 - Cylinder 4 Misfire Detected	P0305 - Cylinder 5 Misfire Detected	P0306 - Cylinder 6 Misfire Detected	P0307 - Cylinder 7 Misfire Detected	P0308 - Cylinder 8 Misfire Detected	P0443 - Evaporative Emission Purge Solenoid Control Circuit Open	P0458 - Evaporative Emission Purge Solenoid Control Circuit Low	P0459 - Evaporative Emission Purge Solenoid Control Circuit High	P0496 - Evaporative Emission System Flow During Non-Purge	P0497 - Evaporative Emission System No Flow During Purge	P04AB - Evaporative Emission Purge Solenoid Control Circuit Open Bank 2	P04AC - Evaporative Emission Purge Solenoid Control Circuit Low Bank 2	P04AD - Evaporative Emission Purge Solenoid Control Circuit High Bank 2	P04AE - Evaporative Emission Purge Solenoid Performance Bank 2	P04DF - Evaporative Emission Purge Solenoid Performance Bank 1	P0641 - Sensor Reference Voltage 1 Circuit Open	P064E - Control Module Oxygen Sensor Bank 2 Sensor 1 System Performance	CONTINUED NEXT LINE
	P0651 - Sensor Reference Voltage 2 Circuit Open	P0697 - Sensor Reference Voltage 3 Circuit Open	P06A3 - Sensor Reference Voltage 4 Circuit Open	P2235 - Oxygen Sensor Signal Circuit Shorted to Heater Circuit Bank 2 Sensor 2	P2240 - Oxygen Sensor Pumping Current Control Circuit Open Bank 2 Sensor 1	P2254 - Oxygen Sensor Low Reference Circuit Open Bank 2 Sensor 1	P2272 - Oxygen Sensor Signal Stuck Lean Bank 2 Sensor 2	P2273 - Oxygen Sensor Signal Stuck Rich Bank 2 Sensor 2	P2298 - Oxygen Sensor Out of Range During Deceleration Bank 2 Sensor 1	P2629 - Oxygen Sensor Pumping Current Trim Circuit Open Bank 2 Sensor 1	P2A0B - Manifold Absolute Pressure Sensor Performance Bank 2	P2A0C - Manifold Absolute Pressure Sensor Circuit Low Bank 2	P2A0D - Manifold Absolute Pressure Sensor Circuit High Bank 2	P30D9 - Control Module Processor Serial Peripheral Interface Bus 4	P318A - Cylinder 2 Reactivation Performance - Trapped High Pressure Exhaust Charge	P318B - Cylinder 3 Reactivation Performance - Trapped High Pressure Exhaust Charge	P318D - Cylinder 5 Reactivation Performance - Trapped High Pressure Exhaust Charge	P3190 - Cylinder 8 Reactivation Performance - Trapped High Pressure Exhaust Charge	P3409 - Cylinder 2 Deactivation Solenoid Control Circuit Open	P3411 - Cylinder 2 Deactivation Solenoid Control Circuit Low	P3412 - Cylinder 2 Deactivation Solenoid Control Circuit High	P3417 - Cylinder 3 Deactivation Solenoid Control Circuit Open	CONTINUED NEXT LINE
	P3419 - Cylinder 3 Deactivation Solenoid Control Circuit Low	P3420 - Cylinder 3 Deactivation Solenoid Control Circuit High	P3433 - Cylinder 5 Deactivation Solenoid Control Circuit Open	P3435 - Cylinder 5 Deactivation Solenoid Control Circuit Low	P3436 - Cylinder 5 Deactivation Solenoid Control Circuit High	P3457 - Cylinder 8 Deactivation Solenoid Control Circuit Open	P3459 - Cylinder 8 Deactivation Solenoid Control Circuit Low	P3460 - Cylinder 8 Deactivation Solenoid Control Circuit High	P3499 - Cylinder 2 Deactivation Performance	P349A - Cylinder 3 Deactivation Performance	P349C - Cylinder 5 Deactivation Performance	P349F - Cylinder 8 Deactivation Performance	END										
P2198 - Oxygen Sensor Signal Biased Rich Bank 2 Sensor 1	P0050 - Oxygen Sensor Heater Control Circuit Open Bank 2 Sensor 1	P0051 - Oxygen Sensor Heater Control Circuit Low Bank 2 Sensor 1	P0052 - Oxygen Sensor Heater Control Circuit High Bank 2 Sensor 1	P0056 - Oxygen Sensor Heater Control Circuit Open Bank 2 Sensor 2	P0057 - Oxygen Sensor Heater Control Circuit Low Bank 2 Sensor 2	P0058 - Oxygen Sensor Heater Control Circuit High Bank 2 Sensor 2	P0101 - Mass Air Flow Sensor Performance	P0102 - Mass Air Flow Sensor Circuit Low	P0103 - Mass Air Flow Sensor Circuit High	P0106 - Manifold Absolute Pressure Sensor Performance	P0107 - Manifold Absolute Pressure Sensor Circuit Low	P0108 - Manifold Absolute Pressure Sensor Circuit High	P010B - Mass Air Flow Sensor 2 Performance	P010C - Mass Air Flow Sensor 2 Circuit Low	P010D - Mass Air Flow Sensor 2 Circuit High	P0150 - HO2S Circuit Bank 2 Sensor 1	P0151 - Oxygen Sensor Circuit Low Bank 2 Sensor 1	P0152 - Oxygen Sensor Circuit High Bank 2 Sensor 1	P0153 - Oxygen Sensor Slow Response Bank 2 Sensor 1	P0157 - Oxygen Sensor Circuit Low Bank 2 Sensor 2	P0158 - Oxygen Sensor Circuit High Bank 2 Sensor 2	P0160 - Oxygen Sensor Circuit Insufficient Activity Bank 2 Sensor 2	CONTINUED NEXT LINE
	P0161 - Oxygen Sensor Heater Performance Bank 2 Sensor 2	P0300 - Engine Misfire Detected	P0301 - Cylinder 1 Misfire Detected	P0302 - Cylinder 2 Misfire Detected	P0303 - Cylinder 3 Misfire Detected	P0304 - Cylinder 4 Misfire Detected	P0305 - Cylinder 5 Misfire Detected	P0306 - Cylinder 6 Misfire Detected	P0307 - Cylinder 7 Misfire Detected	P0308 - Cylinder 8 Misfire Detected	P0443 - Evaporative Emission Purge Solenoid Control Circuit Open	P0458 - Evaporative Emission Purge Solenoid Control Circuit Low	P0459 - Evaporative Emission Purge Solenoid Control Circuit High	P0496 - Evaporative Emission System Flow During Non-Purge	P0497 - Evaporative Emission System No Flow During Purge	P04AB - Evaporative Emission Purge Solenoid Control Circuit Open Bank 2	P04AC - Evaporative Emission Purge Solenoid Control Circuit Low Bank 2	P04AD - Evaporative Emission Purge Solenoid Control Circuit High Bank 2	P04AE - Evaporative Emission Purge Solenoid Performance Bank 2	P04DF - Evaporative Emission Purge Solenoid Performance Bank 1	P0641 - Sensor Reference Voltage 1 Circuit Open	P064E - Control Module Oxygen Sensor Bank 2 Sensor 1 System Performance	CONTINUED NEXT LINE
	P0651 - Sensor Reference Voltage 2 Circuit Open	P0697 - Sensor Reference Voltage 3 Circuit Open	P06A3 - Sensor Reference Voltage 4 Circuit Open	P2235 - Oxygen Sensor Signal Circuit Shorted to Heater Circuit Bank 2 Sensor 2	P2240 - Oxygen Sensor Pumping Current Control Circuit Open Bank 2 Sensor 1	P2254 - Oxygen Sensor Low Reference Circuit Open Bank 2 Sensor 1	P2272 - Oxygen Sensor Signal Stuck Lean Bank 2 Sensor 2	P2273 - Oxygen Sensor Signal Stuck Rich Bank 2 Sensor 2	P2298 - Oxygen Sensor Out of Range During Deceleration Bank 2 Sensor 1	P2629 - Oxygen Sensor Pumping Current Trim Circuit Open Bank 2 Sensor 1	P2A0B - Manifold Absolute Pressure Sensor Performance Bank 2	P2A0C - Manifold Absolute Pressure Sensor Circuit Low Bank 2	P2A0D - Manifold Absolute Pressure Sensor Circuit High Bank 2	P30D9 - Control Module Processor Serial Peripheral Interface Bus 4	P318A - Cylinder 2 Reactivation Performance - Trapped High Pressure Exhaust Charge	P318B - Cylinder 3 Reactivation Performance - Trapped High Pressure Exhaust Charge	P318D - Cylinder 5 Reactivation Performance - Trapped High Pressure Exhaust Charge	P3190 - Cylinder 8 Reactivation Performance - Trapped High Pressure Exhaust Charge	P3409 - Cylinder 2 Deactivation Solenoid Control Circuit Open	P3411 - Cylinder 2 Deactivation Solenoid Control Circuit Low	P3412 - Cylinder 2 Deactivation Solenoid Control Circuit High	P3417 - Cylinder 3 Deactivation Solenoid Control Circuit Open	CONTINUED NEXT LINE
	P3419 - Cylinder 3 Deactivation Solenoid Control Circuit Low	P3420 - Cylinder 3 Deactivation Solenoid Control Circuit High	P3433 - Cylinder 5 Deactivation Solenoid Control Circuit Open	P3435 - Cylinder 5 Deactivation Solenoid Control Circuit Low	P3436 - Cylinder 5 Deactivation Solenoid Control Circuit High	P3457 - Cylinder 8 Deactivation Solenoid Control Circuit Open	P3459 - Cylinder 8 Deactivation Solenoid Control Circuit Low	P3460 - Cylinder 8 Deactivation Solenoid Control Circuit High	P3499 - Cylinder 2 Deactivation Performance	P349A - Cylinder 3 Deactivation Performance	P349C - Cylinder 5 Deactivation Performance	P349F - Cylinder 8 Deactivation Performance	END										
P219C - Cylinder 1 Fuel Trim Cylinder Balance	P000A - Camshaft Position System Slow Response Bank 1	P000B - Exhaust Camshaft Position System Slow Response Bank 1	P000C - Intake Camshaft Position System Slow Response Bank 2	P000D - Exhaust Camshaft Position System Slow Response Bank 2	P0010 - Camshaft Position Actuator Control Circuit Open	P0011 - Camshaft Position System Performance	P0013 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 1	P0014 - Exhaust Camshaft Position System Performance Bank 1	P0020 - Intake Camshaft Position Actuator Control Circuit Open Bank 2	P0021 - Intake Camshaft Position System Performance Bank 2	P0023 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 2	P0024 - Exhaust Camshaft Position System Performance Bank 2	P0030 - Oxygen Sensor Heater Control Circuit Open Bank 1 Sensor 1	P0031 - Oxygen Sensor Heater Control Circuit Low Bank 1 Sensor 1	P0032 - Oxygen Sensor Heater Control Circuit High Bank 1 Sensor 1	P0050 - Oxygen Sensor Heater Control Circuit Open Bank 2 Sensor 1	P0051 - Oxygen Sensor Heater Control Circuit Low Bank 2 Sensor 1	P0052 - Oxygen Sensor Heater Control Circuit High Bank 2 Sensor 1	P0101 - Mass Air Flow Sensor Performance	P0102 - Mass Air Flow Sensor Circuit Low	P0103 - Mass Air Flow Sensor Circuit High	P0106 - Manifold Absolute Pressure Sensor Performance	CONTINUED NEXT LINE
	P0107 - Manifold Absolute Pressure Sensor Circuit Low	P0108 - Manifold Absolute Pressure Sensor Circuit High	P010B - Mass Air Flow Sensor 2 Performance	P010C - Mass Air Flow Sensor 2 Circuit Low	P010D - Mass Air Flow Sensor 2 Circuit High	P0130 - HO2S Circuit Bank 1 Sensor 1	P0131 - Oxygen Sensor Circuit Low Bank 1 Sensor 1	P0132 - Oxygen Sensor Circuit High Bank 1 Sensor 1	P0133 - Oxygen Sensor Slow Response Bank 1 Sensor 1	P0150 - HO2S Circuit Bank 2 Sensor 1	P0151 - Oxygen Sensor Circuit Low Bank 2 Sensor 1	P0152 - Oxygen Sensor Circuit High Bank 2 Sensor 1	P0153 - Oxygen Sensor Slow Response Bank 2 Sensor 1	P0171 - Fuel Trim System Lean Bank 1	P0172 - Fuel Trim System Rich Bank 1	P0174 - Fuel Trim System Lean Bank 2	P0175 - Fuel Trim System Rich Bank 2	P0335 - Crankshaft Position Sensor Circuit	P0336 - Crankshaft Position Sensor Performance	P034A - Crankshaft Position Sensor Start Position Incorrect	P034B - Crankshaft Position Sensor Direction Incorrect	P0443 - Evaporative Emission Purge Solenoid Control Circuit Open	CONTINUED NEXT LINE
	P0458 - Evaporative Emission Purge Solenoid Control Circuit Low	P0459 - Evaporative Emission Purge Solenoid Control Circuit High	P04AB - Evaporative Emission Purge Solenoid Control Circuit Open Bank 2	P04AC - Evaporative Emission Purge Solenoid Control Circuit Low Bank 2	P04AD - Evaporative Emission Purge Solenoid Control Circuit High Bank 2	P064D - Control Module Oxygen Sensor Bank 1 Sensor 1 System Performance	P064E - Control Module Oxygen Sensor Bank 2 Sensor 1 System Performance	P2088 - Camshaft Position Actuator Control Circuit Low	P2089 - Camshaft Position Actuator Control Circuit High	P2090 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 1	P2091 - Exhaust Camshaft Position Actuator Control Circuit High Bank 1	P2092 - Intake Camshaft Position Actuator Control Circuit Low Bank 2	P2093 - Intake Camshaft Position Actuator Control Circuit High Bank 2	P2094 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 2	P2095 - Exhaust Camshaft Position Actuator Control Circuit High Bank 2	P2096 - Post Catalyst Fuel Trim System Low Limit Bank 1	P2097 - Post Catalyst Fuel Trim System High Limit Bank 1	P2098 - Post Catalyst Fuel Trim System Low Limit Bank 2	P2099 - Post Catalyst Fuel Trim System High Limit Bank 2	P2177 - Fuel Trim System Lean Off Idle Bank 1	P2178 - Fuel Trim System Rich Off Idle Bank 1	P2179 - Fuel Trim System Lean Off Idle Bank 2	CONTINUED NEXT LINE
	P2180 - Fuel Trim System Rich Off Idle Bank 2	P2187 - Fuel Trim System Lean at Idle Bank 1	P2188 - Fuel Trim System Rich at Idle Bank 1	P2189 - Fuel Trim System Lean at Idle Bank 2	P2190 - Fuel Trim System Rich at Idle Bank 2	P2195 - Oxygen Sensor Signal Biased Lean Bank 1 Sensor 1	P2196 - Oxygen Sensor Signal Biased Rich Bank 1 Sensor 1	P2197 - Oxygen Sensor Signal Biased Lean Bank 2 Sensor 1	P2198 - Oxygen Sensor Signal Biased Rich Bank 2 Sensor 1	P2237 - Oxygen Sensor Pumping Current Control Circuit Open Bank 1 Sensor 1	P2240 - Oxygen Sensor Pumping Current Control Circuit Open Bank 2 Sensor 1	P2251 - Oxygen Sensor Low Reference Circuit Open Bank 1 Sensor 1	P2254 - Oxygen Sensor Low Reference Circuit Open Bank 2 Sensor 1	P2297 - Oxygen Sensor Out of Range During Deceleration Bank 1 Sensor 1	P2298 - Oxygen Sensor Out of Range During Deceleration Bank 2 Sensor 1	P2626 - Oxygen Sensor Pumping Current Trim Circuit Open Bank 1 Sensor 1	P2629 - Oxygen Sensor Pumping Current Trim Circuit Open Bank 2 Sensor 1	P2A0B - Manifold Absolute Pressure Sensor Performance Bank 2	P2A0C - Manifold Absolute Pressure Sensor Circuit Low Bank 2	P2A0D - Manifold Absolute Pressure Sensor Circuit High Bank 2	P2E68 - Fuel Trim System Lean During Cylinder Deactivation Bank 1	P2E69 - Fuel Trim System Rich During Cylinder Deactivation Bank 1	CONTINUED NEXT LINE
	P2E6A - Fuel Trim System Lean During Cylinder Deactivation Bank 2	P2E6B - Fuel Trim System Rich During Cylinder Deactivation Bank 2	P30D8 - Control Module Processor Serial Peripheral Interface Bus 3	P30D9 - Control Module Processor Serial Peripheral Interface Bus 4	END																		
P219D - Cylinder 2 Fuel Trim Cylinder Balance	P000A - Camshaft Position System Slow Response Bank 1	P000B - Exhaust Camshaft Position System Slow Response Bank 1	P000C - Intake Camshaft Position System Slow Response Bank 2	P000D - Exhaust Camshaft Position System Slow Response Bank 2	P0010 - Camshaft Position Actuator Control Circuit Open	P0011 - Camshaft Position System Performance	P0013 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 1	P0014 - Exhaust Camshaft Position System Performance Bank 1	P0020 - Intake Camshaft Position Actuator Control Circuit Open Bank 2	P0021 - Intake Camshaft Position System Performance Bank 2	P0023 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 2	P0024 - Exhaust Camshaft Position System Performance Bank 2	P0030 - Oxygen Sensor Heater Control Circuit Open Bank 1 Sensor 1	P0031 - Oxygen Sensor Heater Control Circuit Low Bank 1 Sensor 1	P0032 - Oxygen Sensor Heater Control Circuit High Bank 1 Sensor 1	P0050 - Oxygen Sensor Heater Control Circuit Open Bank 2 Sensor 1	P0051 - Oxygen Sensor Heater Control Circuit Low Bank 2 Sensor 1	P0052 - Oxygen Sensor Heater Control Circuit High Bank 2 Sensor 1	P0101 - Mass Air Flow Sensor Performance	P0102 - Mass Air Flow Sensor Circuit Low	P0103 - Mass Air Flow Sensor Circuit High	P0106 - Manifold Absolute Pressure Sensor Performance	CONTINUED NEXT LINE
	P0107 - Manifold Absolute Pressure Sensor Circuit Low	P0108 - Manifold Absolute Pressure Sensor Circuit High	P010B - Mass Air Flow Sensor 2 Performance	P010C - Mass Air Flow Sensor 2 Circuit Low	P010D - Mass Air Flow Sensor 2 Circuit High	P0130 - HO2S Circuit Bank 1 Sensor 1	P0131 - Oxygen Sensor Circuit Low Bank 1 Sensor 1	P0132 - Oxygen Sensor Circuit High Bank 1 Sensor 1	P0133 - Oxygen Sensor Slow Response Bank 1 Sensor 1	P0150 - HO2S Circuit Bank 2 Sensor 1	P0151 - Oxygen Sensor Circuit Low Bank 2 Sensor 1	P0152 - Oxygen Sensor Circuit High Bank 2 Sensor 1	P0153 - Oxygen Sensor Slow Response Bank 2 Sensor 1	P0171 - Fuel Trim System Lean Bank 1	P0172 - Fuel Trim System Rich Bank 1	P0174 - Fuel Trim System Lean Bank 2	P0175 - Fuel Trim System Rich Bank 2	P0335 - Crankshaft Position Sensor Circuit	P0336 - Crankshaft Position Sensor Performance	P034A - Crankshaft Position Sensor Start Position Incorrect	P034B - Crankshaft Position Sensor Direction Incorrect	P0443 - Evaporative Emission Purge Solenoid Control Circuit Open	CONTINUED NEXT LINE
	P0458 - Evaporative Emission Purge Solenoid Control Circuit Low	P0459 - Evaporative Emission Purge Solenoid Control Circuit High	P04AB - Evaporative Emission Purge Solenoid Control Circuit Open Bank 2	P04AC - Evaporative Emission Purge Solenoid Control Circuit Low Bank 2	P04AD - Evaporative Emission Purge Solenoid Control Circuit High Bank 2	P064D - Control Module Oxygen Sensor Bank 1 Sensor 1 System Performance	P064E - Control Module Oxygen Sensor Bank 2 Sensor 1 System Performance	P2088 - Camshaft Position Actuator Control Circuit Low	P2089 - Camshaft Position Actuator Control Circuit High	P2090 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 1	P2091 - Exhaust Camshaft Position Actuator Control Circuit High Bank 1	P2092 - Intake Camshaft Position Actuator Control Circuit Low Bank 2	P2093 - Intake Camshaft Position Actuator Control Circuit High Bank 2	P2094 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 2	P2095 - Exhaust Camshaft Position Actuator Control Circuit High Bank 2	P2096 - Post Catalyst Fuel Trim System Low Limit Bank 1	P2097 - Post Catalyst Fuel Trim System High Limit Bank 1	P2098 - Post Catalyst Fuel Trim System Low Limit Bank 2	P2099 - Post Catalyst Fuel Trim System High Limit Bank 2	P2177 - Fuel Trim System Lean Off Idle Bank 1	P2178 - Fuel Trim System Rich Off Idle Bank 1	P2179 - Fuel Trim System Lean Off Idle Bank 2	CONTINUED NEXT LINE
	P2180 - Fuel Trim System Rich Off Idle Bank 2	P2187 - Fuel Trim System Lean at Idle Bank 1	P2188 - Fuel Trim System Rich at Idle Bank 1	P2189 - Fuel Trim System Lean at Idle Bank 2	P2190 - Fuel Trim System Rich at Idle Bank 2	P2195 - Oxygen Sensor Signal Biased Lean Bank 1 Sensor 1	P2196 - Oxygen Sensor Signal Biased Rich Bank 1 Sensor 1	P2197 - Oxygen Sensor Signal Biased Lean Bank 2 Sensor 1	P2198 - Oxygen Sensor Signal Biased Rich Bank 2 Sensor 1	P2237 - Oxygen Sensor Pumping Current Control Circuit Open Bank 1 Sensor 1	P2240 - Oxygen Sensor Pumping Current Control Circuit Open Bank 2 Sensor 1	P2251 - Oxygen Sensor Low Reference Circuit Open Bank 1 Sensor 1	P2254 - Oxygen Sensor Low Reference Circuit Open Bank 2 Sensor 1	P2297 - Oxygen Sensor Out of Range During Deceleration Bank 1 Sensor 1	P2298 - Oxygen Sensor Out of Range During Deceleration Bank 2 Sensor 1	P2626 - Oxygen Sensor Pumping Current Trim Circuit Open Bank 1 Sensor 1	P2629 - Oxygen Sensor Pumping Current Trim Circuit Open Bank 2 Sensor 1	P2A0B - Manifold Absolute Pressure Sensor Performance Bank 2	P2A0C - Manifold Absolute Pressure Sensor Circuit Low Bank 2	P2A0D - Manifold Absolute Pressure Sensor Circuit High Bank 2	P2E68 - Fuel Trim System Lean During Cylinder Deactivation Bank 1	P2E69 - Fuel Trim System Rich During Cylinder Deactivation Bank 1	CONTINUED NEXT LINE
	P2E6A - Fuel Trim System Lean During Cylinder Deactivation Bank 2	P2E6B - Fuel Trim System Rich During Cylinder Deactivation Bank 2	P30D8 - Control Module Processor Serial Peripheral Interface Bus 3	P30D9 - Control Module Processor Serial Peripheral Interface Bus 4	END																		
P219E - Cylinder 3 Fuel Trim Cylinder Balance	P000A - Camshaft Position System Slow Response Bank 1	P000B - Exhaust Camshaft Position System Slow Response Bank 1	P000C - Intake Camshaft Position System Slow Response Bank 2	P000D - Exhaust Camshaft Position System Slow Response Bank 2	P0010 - Camshaft Position Actuator Control Circuit Open	P0011 - Camshaft Position System Performance	P0013 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 1	P0014 - Exhaust Camshaft Position System Performance Bank 1	P0020 - Intake Camshaft Position Actuator Control Circuit Open Bank 2	P0021 - Intake Camshaft Position System Performance Bank 2	P0023 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 2	P0024 - Exhaust Camshaft Position System Performance Bank 2	P0030 - Oxygen Sensor Heater Control Circuit Open Bank 1 Sensor 1	P0031 - Oxygen Sensor Heater Control Circuit Low Bank 1 Sensor 1	P0032 - Oxygen Sensor Heater Control Circuit High Bank 1 Sensor 1	P0050 - Oxygen Sensor Heater Control Circuit Open Bank 2 Sensor 1	P0051 - Oxygen Sensor Heater Control Circuit Low Bank 2 Sensor 1	P0052 - Oxygen Sensor Heater Control Circuit High Bank 2 Sensor 1	P0101 - Mass Air Flow Sensor Performance	P0102 - Mass Air Flow Sensor Circuit Low	P0103 - Mass Air Flow Sensor Circuit High	P0106 - Manifold Absolute Pressure Sensor Performance	CONTINUED NEXT LINE
	P0107 - Manifold Absolute Pressure Sensor Circuit Low	P0108 - Manifold Absolute Pressure Sensor Circuit High	P010B - Mass Air Flow Sensor 2 Performance	P010C - Mass Air Flow Sensor 2 Circuit Low	P010D - Mass Air Flow Sensor 2 Circuit High	P0130 - HO2S Circuit Bank 1 Sensor 1	P0131 - Oxygen Sensor Circuit Low Bank 1 Sensor 1	P0132 - Oxygen Sensor Circuit High Bank 1 Sensor 1	P0133 - Oxygen Sensor Slow Response Bank 1 Sensor 1	P0150 - HO2S Circuit Bank 2 Sensor 1	P0151 - Oxygen Sensor Circuit Low Bank 2 Sensor 1	P0152 - Oxygen Sensor Circuit High Bank 2 Sensor 1	P0153 - Oxygen Sensor Slow Response Bank 2 Sensor 1	P0171 - Fuel Trim System Lean Bank 1	P0172 - Fuel Trim System Rich Bank 1	P0174 - Fuel Trim System Lean Bank 2	P0175 - Fuel Trim System Rich Bank 2	P0335 - Crankshaft Position Sensor Circuit	P0336 - Crankshaft Position Sensor Performance	P034A - Crankshaft Position Sensor Start Position Incorrect	P034B - Crankshaft Position Sensor Direction Incorrect	P0443 - Evaporative Emission Purge Solenoid Control Circuit Open	CONTINUED NEXT LINE
	P0458 - Evaporative Emission Purge Solenoid Control Circuit Low	P0459 - Evaporative Emission Purge Solenoid Control Circuit High	P04AB - Evaporative Emission Purge Solenoid Control Circuit Open Bank 2	P04AC - Evaporative Emission Purge Solenoid Control Circuit Low Bank 2	P04AD - Evaporative Emission Purge Solenoid Control Circuit High Bank 2	P064D - Control Module Oxygen Sensor Bank 1 Sensor 1 System Performance	P064E - Control Module Oxygen Sensor Bank 2 Sensor 1 System Performance	P2088 - Camshaft Position Actuator Control Circuit Low	P2089 - Camshaft Position Actuator Control Circuit High	P2090 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 1	P2091 - Exhaust Camshaft Position Actuator Control Circuit High Bank 1	P2092 - Intake Camshaft Position Actuator Control Circuit Low Bank 2	P2093 - Intake Camshaft Position Actuator Control Circuit High Bank 2	P2094 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 2	P2095 - Exhaust Camshaft Position Actuator Control Circuit High Bank 2	P2096 - Post Catalyst Fuel Trim System Low Limit Bank 1	P2097 - Post Catalyst Fuel Trim System High Limit Bank 1	P2098 - Post Catalyst Fuel Trim System Low Limit Bank 2	P2099 - Post Catalyst Fuel Trim System High Limit Bank 2	P2177 - Fuel Trim System Lean Off Idle Bank 1	P2178 - Fuel Trim System Rich Off Idle Bank 1	P2179 - Fuel Trim System Lean Off Idle Bank 2	CONTINUED NEXT LINE
	P2180 - Fuel Trim System Rich Off Idle Bank 2	P2187 - Fuel Trim System Lean at Idle Bank 1	P2188 - Fuel Trim System Rich at Idle Bank 1	P2189 - Fuel Trim System Lean at Idle Bank 2	P2190 - Fuel Trim System Rich at Idle Bank 2	P2195 - Oxygen Sensor Signal Biased Lean Bank 1 Sensor 1	P2196 - Oxygen Sensor Signal Biased Rich Bank 1 Sensor 1	P2197 - Oxygen Sensor Signal Biased Lean Bank 2 Sensor 1	P2198 - Oxygen Sensor Signal Biased Rich Bank 2 Sensor 1	P2237 - Oxygen Sensor Pumping Current Control Circuit Open Bank 1 Sensor 1	P2240 - Oxygen Sensor Pumping Current Control Circuit Open Bank 2 Sensor 1	P2251 - Oxygen Sensor Low Reference Circuit Open Bank 1 Sensor 1	P2254 - Oxygen Sensor Low Reference Circuit Open Bank 2 Sensor 1	P2297 - Oxygen Sensor Out of Range During Deceleration Bank 1 Sensor 1	P2298 - Oxygen Sensor Out of Range During Deceleration Bank 2 Sensor 1	P2626 - Oxygen Sensor Pumping Current Trim Circuit Open Bank 1 Sensor 1	P2629 - Oxygen Sensor Pumping Current Trim Circuit Open Bank 2 Sensor 1	P2A0B - Manifold Absolute Pressure Sensor Performance Bank 2	P2A0C - Manifold Absolute Pressure Sensor Circuit Low Bank 2	P2A0D - Manifold Absolute Pressure Sensor Circuit High Bank 2	P2E68 - Fuel Trim System Lean During Cylinder Deactivation Bank 1	P2E69 - Fuel Trim System Rich During Cylinder Deactivation Bank 1	CONTINUED NEXT LINE
	P2E6A - Fuel Trim System Lean During Cylinder Deactivation Bank 2	P2E6B - Fuel Trim System Rich During Cylinder Deactivation Bank 2	P30D8 - Control Module Processor Serial Peripheral Interface Bus 3	P30D9 - Control Module Processor Serial Peripheral Interface Bus 4	END																		
P219F - Cylinder 4 Fuel Trim Cylinder Balance	P000A - Camshaft Position System Slow Response Bank 1	P000B - Exhaust Camshaft Position System Slow Response Bank 1	P000C - Intake Camshaft Position System Slow Response Bank 2	P000D - Exhaust Camshaft Position System Slow Response Bank 2	P0010 - Camshaft Position Actuator Control Circuit Open	P0011 - Camshaft Position System Performance	P0013 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 1	P0014 - Exhaust Camshaft Position System Performance Bank 1	P0020 - Intake Camshaft Position Actuator Control Circuit Open Bank 2	P0021 - Intake Camshaft Position System Performance Bank 2	P0023 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 2	P0024 - Exhaust Camshaft Position System Performance Bank 2	P0030 - Oxygen Sensor Heater Control Circuit Open Bank 1 Sensor 1	P0031 - Oxygen Sensor Heater Control Circuit Low Bank 1 Sensor 1	P0032 - Oxygen Sensor Heater Control Circuit High Bank 1 Sensor 1	P0050 - Oxygen Sensor Heater Control Circuit Open Bank 2 Sensor 1	P0051 - Oxygen Sensor Heater Control Circuit Low Bank 2 Sensor 1	P0052 - Oxygen Sensor Heater Control Circuit High Bank 2 Sensor 1	P0101 - Mass Air Flow Sensor Performance	P0102 - Mass Air Flow Sensor Circuit Low	P0103 - Mass Air Flow Sensor Circuit High	P0106 - Manifold Absolute Pressure Sensor Performance	CONTINUED NEXT LINE
	P0107 - Manifold Absolute Pressure Sensor Circuit Low	P0108 - Manifold Absolute Pressure Sensor Circuit High	P010B - Mass Air Flow Sensor 2 Performance	P010C - Mass Air Flow Sensor 2 Circuit Low	P010D - Mass Air Flow Sensor 2 Circuit High	P0130 - HO2S Circuit Bank 1 Sensor 1	P0131 - Oxygen Sensor Circuit Low Bank 1 Sensor 1	P0132 - Oxygen Sensor Circuit High Bank 1 Sensor 1	P0133 - Oxygen Sensor Slow Response Bank 1 Sensor 1	P0150 - HO2S Circuit Bank 2 Sensor 1	P0151 - Oxygen Sensor Circuit Low Bank 2 Sensor 1	P0152 - Oxygen Sensor Circuit High Bank 2 Sensor 1	P0153 - Oxygen Sensor Slow Response Bank 2 Sensor 1	P0171 - Fuel Trim System Lean Bank 1	P0172 - Fuel Trim System Rich Bank 1	P0174 - Fuel Trim System Lean Bank 2	P0175 - Fuel Trim System Rich Bank 2	P0335 - Crankshaft Position Sensor Circuit	P0336 - Crankshaft Position Sensor Performance	P034A - Crankshaft Position Sensor Start Position Incorrect	P034B - Crankshaft Position Sensor Direction Incorrect	P0443 - Evaporative Emission Purge Solenoid Control Circuit Open	CONTINUED NEXT LINE
	P0458 - Evaporative Emission Purge Solenoid Control Circuit Low	P0459 - Evaporative Emission Purge Solenoid Control Circuit High	P04AB - Evaporative Emission Purge Solenoid Control Circuit Open Bank 2	P04AC - Evaporative Emission Purge Solenoid Control Circuit Low Bank 2	P04AD - Evaporative Emission Purge Solenoid Control Circuit High Bank 2	P064D - Control Module Oxygen Sensor Bank 1 Sensor 1 System Performance	P064E - Control Module Oxygen Sensor Bank 2 Sensor 1 System Performance	P2088 - Camshaft Position Actuator Control Circuit Low	P2089 - Camshaft Position Actuator Control Circuit High	P2090 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 1	P2091 - Exhaust Camshaft Position Actuator Control Circuit High Bank 1	P2092 - Intake Camshaft Position Actuator Control Circuit Low Bank 2	P2093 - Intake Camshaft Position Actuator Control Circuit High Bank 2	P2094 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 2	P2095 - Exhaust Camshaft Position Actuator Control Circuit High Bank 2	P2096 - Post Catalyst Fuel Trim System Low Limit Bank 1	P2097 - Post Catalyst Fuel Trim System High Limit Bank 1	P2098 - Post Catalyst Fuel Trim System Low Limit Bank 2	P2099 - Post Catalyst Fuel Trim System High Limit Bank 2	P2177 - Fuel Trim System Lean Off Idle Bank 1	P2178 - Fuel Trim System Rich Off Idle Bank 1	P2179 - Fuel Trim System Lean Off Idle Bank 2	CONTINUED NEXT LINE
	P2180 - Fuel Trim System Rich Off Idle Bank 2	P2187 - Fuel Trim System Lean at Idle Bank 1	P2188 - Fuel Trim System Rich at Idle Bank 1	P2189 - Fuel Trim System Lean at Idle Bank 2	P2190 - Fuel Trim System Rich at Idle Bank 2	P2195 - Oxygen Sensor Signal Biased Lean Bank 1 Sensor 1	P2196 - Oxygen Sensor Signal Biased Rich Bank 1 Sensor 1	P2197 - Oxygen Sensor Signal Biased Lean Bank 2 Sensor 1	P2198 - Oxygen Sensor Signal Biased Rich Bank 2 Sensor 1	P2237 - Oxygen Sensor Pumping Current Control Circuit Open Bank 1 Sensor 1	P2240 - Oxygen Sensor Pumping Current Control Circuit Open Bank 2 Sensor 1	P2251 - Oxygen Sensor Low Reference Circuit Open Bank 1 Sensor 1	P2254 - Oxygen Sensor Low Reference Circuit Open Bank 2 Sensor 1	P2297 - Oxygen Sensor Out of Range During Deceleration Bank 1 Sensor 1	P2298 - Oxygen Sensor Out of Range During Deceleration Bank 2 Sensor 1	P2626 - Oxygen Sensor Pumping Current Trim Circuit Open Bank 1 Sensor 1	P2629 - Oxygen Sensor Pumping Current Trim Circuit Open Bank 2 Sensor 1	P2A0B - Manifold Absolute Pressure Sensor Performance Bank 2	P2A0C - Manifold Absolute Pressure Sensor Circuit Low Bank 2	P2A0D - Manifold Absolute Pressure Sensor Circuit High Bank 2	P2E68 - Fuel Trim System Lean During Cylinder Deactivation Bank 1	P2E69 - Fuel Trim System Rich During Cylinder Deactivation Bank 1	CONTINUED NEXT LINE
	P2E6A - Fuel Trim System Lean During Cylinder Deactivation Bank 2	P2E6B - Fuel Trim System Rich During Cylinder Deactivation Bank 2	P30D8 - Control Module Processor Serial Peripheral Interface Bus 3	P30D9 - Control Module Processor Serial Peripheral Interface Bus 4	END																		
P21A0 - Cylinder 5 Fuel Trim Cylinder Balance	P000A - Camshaft Position System Slow Response Bank 1	P000B - Exhaust Camshaft Position System Slow Response Bank 1	P000C - Intake Camshaft Position System Slow Response Bank 2	P000D - Exhaust Camshaft Position System Slow Response Bank 2	P0010 - Camshaft Position Actuator Control Circuit Open	P0011 - Camshaft Position System Performance	P0013 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 1	P0014 - Exhaust Camshaft Position System Performance Bank 1	P0020 - Intake Camshaft Position Actuator Control Circuit Open Bank 2	P0021 - Intake Camshaft Position System Performance Bank 2	P0023 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 2	P0024 - Exhaust Camshaft Position System Performance Bank 2	P0030 - Oxygen Sensor Heater Control Circuit Open Bank 1 Sensor 1	P0031 - Oxygen Sensor Heater Control Circuit Low Bank 1 Sensor 1	P0032 - Oxygen Sensor Heater Control Circuit High Bank 1 Sensor 1	P0050 - Oxygen Sensor Heater Control Circuit Open Bank 2 Sensor 1	P0051 - Oxygen Sensor Heater Control Circuit Low Bank 2 Sensor 1	P0052 - Oxygen Sensor Heater Control Circuit High Bank 2 Sensor 1	P0101 - Mass Air Flow Sensor Performance	P0102 - Mass Air Flow Sensor Circuit Low	P0103 - Mass Air Flow Sensor Circuit High	P0106 - Manifold Absolute Pressure Sensor Performance	CONTINUED NEXT LINE
	P0107 - Manifold Absolute Pressure Sensor Circuit Low	P0108 - Manifold Absolute Pressure Sensor Circuit High	P010B - Mass Air Flow Sensor 2 Performance	P010C - Mass Air Flow Sensor 2 Circuit Low	P010D - Mass Air Flow Sensor 2 Circuit High	P0130 - HO2S Circuit Bank 1 Sensor 1	P0131 - Oxygen Sensor Circuit Low Bank 1 Sensor 1	P0132 - Oxygen Sensor Circuit High Bank 1 Sensor 1	P0133 - Oxygen Sensor Slow Response Bank 1 Sensor 1	P0150 - HO2S Circuit Bank 2 Sensor 1	P0151 - Oxygen Sensor Circuit Low Bank 2 Sensor 1	P0152 - Oxygen Sensor Circuit High Bank 2 Sensor 1	P0153 - Oxygen Sensor Slow Response Bank 2 Sensor 1	P0171 - Fuel Trim System Lean Bank 1	P0172 - Fuel Trim System Rich Bank 1	P0174 - Fuel Trim System Lean Bank 2	P0175 - Fuel Trim System Rich Bank 2	P0335 - Crankshaft Position Sensor Circuit	P0336 - Crankshaft Position Sensor Performance	P034A - Crankshaft Position Sensor Start Position Incorrect	P034B - Crankshaft Position Sensor Direction Incorrect	P0443 - Evaporative Emission Purge Solenoid Control Circuit Open	CONTINUED NEXT LINE
	P0458 - Evaporative Emission Purge Solenoid Control Circuit Low	P0459 - Evaporative Emission Purge Solenoid Control Circuit High	P04AB - Evaporative Emission Purge Solenoid Control Circuit Open Bank 2	P04AC - Evaporative Emission Purge Solenoid Control Circuit Low Bank 2	P04AD - Evaporative Emission Purge Solenoid Control Circuit High Bank 2	P064D - Control Module Oxygen Sensor Bank 1 Sensor 1 System Performance	P064E - Control Module Oxygen Sensor Bank 2 Sensor 1 System Performance	P2088 - Camshaft Position Actuator Control Circuit Low	P2089 - Camshaft Position Actuator Control Circuit High	P2090 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 1	P2091 - Exhaust Camshaft Position Actuator Control Circuit High Bank 1	P2092 - Intake Camshaft Position Actuator Control Circuit Low Bank 2	P2093 - Intake Camshaft Position Actuator Control Circuit High Bank 2	P2094 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 2	P2095 - Exhaust Camshaft Position Actuator Control Circuit High Bank 2	P2096 - Post Catalyst Fuel Trim System Low Limit Bank 1	P2097 - Post Catalyst Fuel Trim System High Limit Bank 1	P2098 - Post Catalyst Fuel Trim System Low Limit Bank 2	P2099 - Post Catalyst Fuel Trim System High Limit Bank 2	P2177 - Fuel Trim System Lean Off Idle Bank 1	P2178 - Fuel Trim System Rich Off Idle Bank 1	P2179 - Fuel Trim System Lean Off Idle Bank 2	CONTINUED NEXT LINE
	P2180 - Fuel Trim System Rich Off Idle Bank 2	P2187 - Fuel Trim System Lean at Idle Bank 1	P2188 - Fuel Trim System Rich at Idle Bank 1	P2189 - Fuel Trim System Lean at Idle Bank 2	P2190 - Fuel Trim System Rich at Idle Bank 2	P2195 - Oxygen Sensor Signal Biased Lean Bank 1 Sensor 1	P2196 - Oxygen Sensor Signal Biased Rich Bank 1 Sensor 1	P2197 - Oxygen Sensor Signal Biased Lean Bank 2 Sensor 1	P2198 - Oxygen Sensor Signal Biased Rich Bank 2 Sensor 1	P2237 - Oxygen Sensor Pumping Current Control Circuit Open Bank 1 Sensor 1	P2240 - Oxygen Sensor Pumping Current Control Circuit Open Bank 2 Sensor 1	P2251 - Oxygen Sensor Low Reference Circuit Open Bank 1 Sensor 1	P2254 - Oxygen Sensor Low Reference Circuit Open Bank 2 Sensor 1	P2297 - Oxygen Sensor Out of Range During Deceleration Bank 1 Sensor 1	P2298 - Oxygen Sensor Out of Range During Deceleration Bank 2 Sensor 1	P2626 - Oxygen Sensor Pumping Current Trim Circuit Open Bank 1 Sensor 1	P2629 - Oxygen Sensor Pumping Current Trim Circuit Open Bank 2 Sensor 1	P2A0B - Manifold Absolute Pressure Sensor Performance Bank 2	P2A0C - Manifold Absolute Pressure Sensor Circuit Low Bank 2	P2A0D - Manifold Absolute Pressure Sensor Circuit High Bank 2	P2E68 - Fuel Trim System Lean During Cylinder Deactivation Bank 1	P2E69 - Fuel Trim System Rich During Cylinder Deactivation Bank 1	CONTINUED NEXT LINE
	P2E6A - Fuel Trim System Lean During Cylinder Deactivation Bank 2	P2E6B - Fuel Trim System Rich During Cylinder Deactivation Bank 2	P30D8 - Control Module Processor Serial Peripheral Interface Bus 3	P30D9 - Control Module Processor Serial Peripheral Interface Bus 4	END																		
P21A1 - Cylinder 6 Fuel Trim Cylinder Balance	P000A - Camshaft Position System Slow Response Bank 1	P000B - Exhaust Camshaft Position System Slow Response Bank 1	P000C - Intake Camshaft Position System Slow Response Bank 2	P000D - Exhaust Camshaft Position System Slow Response Bank 2	P0010 - Camshaft Position Actuator Control Circuit Open	P0011 - Camshaft Position System Performance	P0013 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 1	P0014 - Exhaust Camshaft Position System Performance Bank 1	P0020 - Intake Camshaft Position Actuator Control Circuit Open Bank 2	P0021 - Intake Camshaft Position System Performance Bank 2	P0023 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 2	P0024 - Exhaust Camshaft Position System Performance Bank 2	P0030 - Oxygen Sensor Heater Control Circuit Open Bank 1 Sensor 1	P0031 - Oxygen Sensor Heater Control Circuit Low Bank 1 Sensor 1	P0032 - Oxygen Sensor Heater Control Circuit High Bank 1 Sensor 1	P0050 - Oxygen Sensor Heater Control Circuit Open Bank 2 Sensor 1	P0051 - Oxygen Sensor Heater Control Circuit Low Bank 2 Sensor 1	P0052 - Oxygen Sensor Heater Control Circuit High Bank 2 Sensor 1	P0101 - Mass Air Flow Sensor Performance	P0102 - Mass Air Flow Sensor Circuit Low	P0103 - Mass Air Flow Sensor Circuit High	P0106 - Manifold Absolute Pressure Sensor Performance	CONTINUED NEXT LINE
	P0107 - Manifold Absolute Pressure Sensor Circuit Low	P0108 - Manifold Absolute Pressure Sensor Circuit High	P010B - Mass Air Flow Sensor 2 Performance	P010C - Mass Air Flow Sensor 2 Circuit Low	P010D - Mass Air Flow Sensor 2 Circuit High	P0130 - HO2S Circuit Bank 1 Sensor 1	P0131 - Oxygen Sensor Circuit Low Bank 1 Sensor 1	P0132 - Oxygen Sensor Circuit High Bank 1 Sensor 1	P0133 - Oxygen Sensor Slow Response Bank 1 Sensor 1	P0150 - HO2S Circuit Bank 2 Sensor 1	P0151 - Oxygen Sensor Circuit Low Bank 2 Sensor 1	P0152 - Oxygen Sensor Circuit High Bank 2 Sensor 1	P0153 - Oxygen Sensor Slow Response Bank 2 Sensor 1	P0171 - Fuel Trim System Lean Bank 1	P0172 - Fuel Trim System Rich Bank 1	P0174 - Fuel Trim System Lean Bank 2	P0175 - Fuel Trim System Rich Bank 2	P0335 - Crankshaft Position Sensor Circuit	P0336 - Crankshaft Position Sensor Performance	P034A - Crankshaft Position Sensor Start Position Incorrect	P034B - Crankshaft Position Sensor Direction Incorrect	P0443 - Evaporative Emission Purge Solenoid Control Circuit Open	CONTINUED NEXT LINE
	P0458 - Evaporative Emission Purge Solenoid Control Circuit Low	P0459 - Evaporative Emission Purge Solenoid Control Circuit High	P04AB - Evaporative Emission Purge Solenoid Control Circuit Open Bank 2	P04AC - Evaporative Emission Purge Solenoid Control Circuit Low Bank 2	P04AD - Evaporative Emission Purge Solenoid Control Circuit High Bank 2	P064D - Control Module Oxygen Sensor Bank 1 Sensor 1 System Performance	P064E - Control Module Oxygen Sensor Bank 2 Sensor 1 System Performance	P2088 - Camshaft Position Actuator Control Circuit Low	P2089 - Camshaft Position Actuator Control Circuit High	P2090 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 1	P2091 - Exhaust Camshaft Position Actuator Control Circuit High Bank 1	P2092 - Intake Camshaft Position Actuator Control Circuit Low Bank 2	P2093 - Intake Camshaft Position Actuator Control Circuit High Bank 2	P2094 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 2	P2095 - Exhaust Camshaft Position Actuator Control Circuit High Bank 2	P2096 - Post Catalyst Fuel Trim System Low Limit Bank 1	P2097 - Post Catalyst Fuel Trim System High Limit Bank 1	P2098 - Post Catalyst Fuel Trim System Low Limit Bank 2	P2099 - Post Catalyst Fuel Trim System High Limit Bank 2	P2177 - Fuel Trim System Lean Off Idle Bank 1	P2178 - Fuel Trim System Rich Off Idle Bank 1	P2179 - Fuel Trim System Lean Off Idle Bank 2	CONTINUED NEXT LINE
	P2180 - Fuel Trim System Rich Off Idle Bank 2	P2187 - Fuel Trim System Lean at Idle Bank 1	P2188 - Fuel Trim System Rich at Idle Bank 1	P2189 - Fuel Trim System Lean at Idle Bank 2	P2190 - Fuel Trim System Rich at Idle Bank 2	P2195 - Oxygen Sensor Signal Biased Lean Bank 1 Sensor 1	P2196 - Oxygen Sensor Signal Biased Rich Bank 1 Sensor 1	P2197 - Oxygen Sensor Signal Biased Lean Bank 2 Sensor 1	P2198 - Oxygen Sensor Signal Biased Rich Bank 2 Sensor 1	P2237 - Oxygen Sensor Pumping Current Control Circuit Open Bank 1 Sensor 1	P2240 - Oxygen Sensor Pumping Current Control Circuit Open Bank 2 Sensor 1	P2251 - Oxygen Sensor Low Reference Circuit Open Bank 1 Sensor 1	P2254 - Oxygen Sensor Low Reference Circuit Open Bank 2 Sensor 1	P2297 - Oxygen Sensor Out of Range During Deceleration Bank 1 Sensor 1	P2298 - Oxygen Sensor Out of Range During Deceleration Bank 2 Sensor 1	P2626 - Oxygen Sensor Pumping Current Trim Circuit Open Bank 1 Sensor 1	P2629 - Oxygen Sensor Pumping Current Trim Circuit Open Bank 2 Sensor 1	P2A0B - Manifold Absolute Pressure Sensor Performance Bank 2	P2A0C - Manifold Absolute Pressure Sensor Circuit Low Bank 2	P2A0D - Manifold Absolute Pressure Sensor Circuit High Bank 2	P2E68 - Fuel Trim System Lean During Cylinder Deactivation Bank 1	P2E69 - Fuel Trim System Rich During Cylinder Deactivation Bank 1	CONTINUED NEXT LINE
	P2E6A - Fuel Trim System Lean During Cylinder Deactivation Bank 2	P2E6B - Fuel Trim System Rich During Cylinder Deactivation Bank 2	P30D8 - Control Module Processor Serial Peripheral Interface Bus 3	P30D9 - Control Module Processor Serial Peripheral Interface Bus 4	END																		

19 OBDG07 ECM DTC Inhibit Tables

The DTCs in this column is inhibited by the DTCs listed to the right	The DTCs in these columns inhibit the DTC to the left						The DTCs in these columns inhibit the DTC to the left						The DTCs in these columns inhibit the DTC to the left						The DTCs in these columns inhibit the DTC to the left				
Inhibited DTC	Fault Active DTCs						Fault Active DTCs						Fault Active DTCs						Fault Active DTCs				
P21A2 - Cylinder 7 Fuel Trim Cylinder Balance	P000A - Camshaft Position System Slow Response Bank 1	P000B - Exhaust Camshaft Position System Slow Response Bank 1	P000C - Intake Camshaft Position System Slow Response Bank 2	P000D - Exhaust Camshaft Position System Slow Response Bank 2	P0010 - Camshaft Position Actuator Control Circuit Open	P0011 - Camshaft Position System Performance	P0013 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 1	P0014 - Exhaust Camshaft Position System Performance Bank 1	P0020 - Intake Camshaft Position Actuator Control Circuit Open Bank 2	P0021 - Intake Camshaft Position System Performance Bank 2	P0023 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 2	P0024 - Exhaust Camshaft Position System Performance Bank 2	P0030 - Oxygen Sensor Heater Control Circuit Open Bank 1 Sensor 1	P0031 - Oxygen Sensor Heater Control Circuit Low Bank 1 Sensor 1	P0032 - Oxygen Sensor Heater Control Circuit High Bank 1 Sensor 1	P0050 - Oxygen Sensor Heater Control Circuit Open Bank 2 Sensor 1	P0051 - Oxygen Sensor Heater Control Circuit Low Bank 2 Sensor 1	P0052 - Oxygen Sensor Heater Control Circuit High Bank 2 Sensor 1	P0101 - Mass Air Flow Sensor Performance	P0102 - Mass Air Flow Sensor Circuit Low	P0103 - Mass Air Flow Sensor Circuit High	P0106 - Manifold Absolute Pressure Sensor Performance	CONTINUED NEXT LINE
	P0107 - Manifold Absolute Pressure Sensor Circuit Low	P0108 - Manifold Absolute Pressure Sensor Circuit High	P010B - Mass Air Flow Sensor 2 Performance	P010C - Mass Air Flow Sensor 2 Circuit Low	P010D - Mass Air Flow Sensor 2 Circuit High	P0130 - HO2S Circuit Bank 1 Sensor 1	P0131 - Oxygen Sensor Circuit Low Bank 1 Sensor 1	P0132 - Oxygen Sensor Circuit High Bank 1 Sensor 1	P0133 - Oxygen Sensor Slow Response Bank 1 Sensor 1	P0150 - HO2S Circuit Bank 2 Sensor 1	P0151 - Oxygen Sensor Circuit Low Bank 2 Sensor 1	P0152 - Oxygen Sensor Circuit High Bank 2 Sensor 1	P0153 - Oxygen Sensor Slow Response Bank 2 Sensor 1	P0171 - Fuel Trim System Lean Bank 1	P0172 - Fuel Trim System Rich Bank 1	P0174 - Fuel Trim System Lean Bank 2	P0175 - Fuel Trim System Rich Bank 2	P0335 - Crankshaft Position Sensor Circuit	P0336 - Crankshaft Position Sensor Performance	P034A - Crankshaft Position Sensor Start Position Incorrect	P034B - Crankshaft Position Sensor Direction Incorrect	P0443 - Evaporative Emission Purge Solenoid Control Circuit Open	CONTINUED NEXT LINE
	P0458 - Evaporative Emission Purge Solenoid Control Circuit Low	P0459 - Evaporative Emission Purge Solenoid Control Circuit High	P04AB - Evaporative Emission Purge Solenoid Control Circuit Open Bank 2	P04AC - Evaporative Emission Purge Solenoid Control Circuit Low Bank 2	P04AD - Evaporative Emission Purge Solenoid Control Circuit High Bank 2	P064D - Control Module Oxygen Sensor Bank 1 Sensor 1 System Performance	P064E - Control Module Oxygen Sensor Bank 2 Sensor 1 System Performance	P2088 - Camshaft Position Actuator Control Circuit Low	P2089 - Camshaft Position Actuator Control Circuit High	P2090 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 1	P2091 - Exhaust Camshaft Position Actuator Control Circuit High Bank 1	P2092 - Intake Camshaft Position Actuator Control Circuit Low Bank 2	P2093 - Intake Camshaft Position Actuator Control Circuit High Bank 2	P2094 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 2	P2095 - Exhaust Camshaft Position Actuator Control Circuit High Bank 2	P2096 - Post Catalyst Fuel Trim System Low Limit Bank 1	P2097 - Post Catalyst Fuel Trim System High Limit Bank 1	P2098 - Post Catalyst Fuel Trim System Low Limit Bank 2	P2099 - Post Catalyst Fuel Trim System High Limit Bank 2	P2177 - Fuel Trim System Lean Off Idle Bank 1	P2178 - Fuel Trim System Rich Off Idle Bank 1	P2179 - Fuel Trim System Lean Off Idle Bank 2	CONTINUED NEXT LINE
	P2180 - Fuel Trim System Rich Off Idle Bank 2	P2187 - Fuel Trim System Lean at Idle Bank 1	P2188 - Fuel Trim System Rich at Idle Bank 1	P2189 - Fuel Trim System Lean at Idle Bank 2	P2190 - Fuel Trim System Rich at Idle Bank 2	P2195 - Oxygen Sensor Signal Biased Lean Bank 1 Sensor 1	P2196 - Oxygen Sensor Signal Biased Rich Bank 1 Sensor 1	P2197 - Oxygen Sensor Signal Biased Lean Bank 2 Sensor 1	P2198 - Oxygen Sensor Signal Biased Rich Bank 2 Sensor 1	P2237 - Oxygen Sensor Pumping Current Control Circuit Open Bank 1 Sensor 1	P2240 - Oxygen Sensor Pumping Current Control Circuit Open Bank 2 Sensor 1	P2251 - Oxygen Sensor Low Reference Circuit Open Bank 1 Sensor 1	P2254 - Oxygen Sensor Low Reference Circuit Open Bank 2 Sensor 1	P2297 - Oxygen Sensor Out of Range During Deceleration Bank 1 Sensor 1	P2298 - Oxygen Sensor Out of Range During Deceleration Bank 2 Sensor 1	P2626 - Oxygen Sensor Pumping Current Trim Circuit Open Bank 1 Sensor 1	P2629 - Oxygen Sensor Pumping Current Trim Circuit Open Bank 2 Sensor 1	P2A0B - Manifold Absolute Pressure Sensor Performance Bank 2	P2A0C - Manifold Absolute Pressure Sensor Circuit Low Bank 2	P2A0D - Manifold Absolute Pressure Sensor Circuit High Bank 2	P2E68 - Fuel Trim System Lean During Cylinder Deactivation Bank 1	P2E69 - Fuel Trim System Rich During Cylinder Deactivation Bank 1	CONTINUED NEXT LINE
	P2E6A - Fuel Trim System Lean During Cylinder Deactivation Bank 2	P2E6B - Fuel Trim System Rich During Cylinder Deactivation Bank 2	P30D8 - Control Module Processor Serial Peripheral Interface Bus 3	P30D9 - Control Module Processor Serial Peripheral Interface Bus 4	END																		
P21A3 - Cylinder 8 Fuel Trim Cylinder Balance	P000A - Camshaft Position System Slow Response Bank 1	P000B - Exhaust Camshaft Position System Slow Response Bank 1	P000C - Intake Camshaft Position System Slow Response Bank 2	P000D - Exhaust Camshaft Position System Slow Response Bank 2	P0010 - Camshaft Position Actuator Control Circuit Open	P0011 - Camshaft Position System Performance	P0013 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 1	P0014 - Exhaust Camshaft Position System Performance Bank 1	P0020 - Intake Camshaft Position Actuator Control Circuit Open Bank 2	P0021 - Intake Camshaft Position System Performance Bank 2	P0023 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 2	P0024 - Exhaust Camshaft Position System Performance Bank 2	P0030 - Oxygen Sensor Heater Control Circuit Open Bank 1 Sensor 1	P0031 - Oxygen Sensor Heater Control Circuit Low Bank 1 Sensor 1	P0032 - Oxygen Sensor Heater Control Circuit High Bank 1 Sensor 1	P0050 - Oxygen Sensor Heater Control Circuit Open Bank 2 Sensor 1	P0051 - Oxygen Sensor Heater Control Circuit Low Bank 2 Sensor 1	P0052 - Oxygen Sensor Heater Control Circuit High Bank 2 Sensor 1	P0101 - Mass Air Flow Sensor Performance	P0102 - Mass Air Flow Sensor Circuit Low	P0103 - Mass Air Flow Sensor Circuit High	P0106 - Manifold Absolute Pressure Sensor Performance	CONTINUED NEXT LINE
	P0107 - Manifold Absolute Pressure Sensor Circuit Low	P0108 - Manifold Absolute Pressure Sensor Circuit High	P010B - Mass Air Flow Sensor 2 Performance	P010C - Mass Air Flow Sensor 2 Circuit Low	P010D - Mass Air Flow Sensor 2 Circuit High	P0130 - HO2S Circuit Bank 1 Sensor 1	P0131 - Oxygen Sensor Circuit Low Bank 1 Sensor 1	P0132 - Oxygen Sensor Circuit High Bank 1 Sensor 1	P0133 - Oxygen Sensor Slow Response Bank 1 Sensor 1	P0150 - HO2S Circuit Bank 2 Sensor 1	P0151 - Oxygen Sensor Circuit Low Bank 2 Sensor 1	P0152 - Oxygen Sensor Circuit High Bank 2 Sensor 1	P0153 - Oxygen Sensor Slow Response Bank 2 Sensor 1	P0171 - Fuel Trim System Lean Bank 1	P0172 - Fuel Trim System Rich Bank 1	P0174 - Fuel Trim System Lean Bank 2	P0175 - Fuel Trim System Rich Bank 2	P0335 - Crankshaft Position Sensor Circuit	P0336 - Crankshaft Position Sensor Performance	P034A - Crankshaft Position Sensor Start Position Incorrect	P034B - Crankshaft Position Sensor Direction Incorrect	P0443 - Evaporative Emission Purge Solenoid Control Circuit Open	CONTINUED NEXT LINE
	P0458 - Evaporative Emission Purge Solenoid Control Circuit Low	P0459 - Evaporative Emission Purge Solenoid Control Circuit High	P04AB - Evaporative Emission Purge Solenoid Control Circuit Open Bank 2	P04AC - Evaporative Emission Purge Solenoid Control Circuit Low Bank 2	P04AD - Evaporative Emission Purge Solenoid Control Circuit High Bank 2	P064D - Control Module Oxygen Sensor Bank 1 Sensor 1 System Performance	P064E - Control Module Oxygen Sensor Bank 2 Sensor 1 System Performance	P2088 - Camshaft Position Actuator Control Circuit Low	P2089 - Camshaft Position Actuator Control Circuit High	P2090 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 1	P2091 - Exhaust Camshaft Position Actuator Control Circuit High Bank 1	P2092 - Intake Camshaft Position Actuator Control Circuit Low Bank 2	P2093 - Intake Camshaft Position Actuator Control Circuit High Bank 2	P2094 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 2	P2095 - Exhaust Camshaft Position Actuator Control Circuit High Bank 2	P2096 - Post Catalyst Fuel Trim System Low Limit Bank 1	P2097 - Post Catalyst Fuel Trim System High Limit Bank 1	P2098 - Post Catalyst Fuel Trim System Low Limit Bank 2	P2099 - Post Catalyst Fuel Trim System High Limit Bank 2	P2177 - Fuel Trim System Lean Off Idle Bank 1	P2178 - Fuel Trim System Rich Off Idle Bank 1	P2179 - Fuel Trim System Lean Off Idle Bank 2	CONTINUED NEXT LINE
	P2180 - Fuel Trim System Rich Off Idle Bank 2	P2187 - Fuel Trim System Lean at Idle Bank 1	P2188 - Fuel Trim System Rich at Idle Bank 1	P2189 - Fuel Trim System Lean at Idle Bank 2	P2190 - Fuel Trim System Rich at Idle Bank 2	P2195 - Oxygen Sensor Signal Biased Lean Bank 1 Sensor 1	P2196 - Oxygen Sensor Signal Biased Rich Bank 1 Sensor 1	P2197 - Oxygen Sensor Signal Biased Lean Bank 2 Sensor 1	P2198 - Oxygen Sensor Signal Biased Rich Bank 2 Sensor 1	P2237 - Oxygen Sensor Pumping Current Control Circuit Open Bank 1 Sensor 1	P2240 - Oxygen Sensor Pumping Current Control Circuit Open Bank 2 Sensor 1	P2251 - Oxygen Sensor Low Reference Circuit Open Bank 1 Sensor 1	P2254 - Oxygen Sensor Low Reference Circuit Open Bank 2 Sensor 1	P2297 - Oxygen Sensor Out of Range During Deceleration Bank 1 Sensor 1	P2298 - Oxygen Sensor Out of Range During Deceleration Bank 2 Sensor 1	P2626 - Oxygen Sensor Pumping Current Trim Circuit Open Bank 1 Sensor 1	P2629 - Oxygen Sensor Pumping Current Trim Circuit Open Bank 2 Sensor 1	P2A0B - Manifold Absolute Pressure Sensor Performance Bank 2	P2A0C - Manifold Absolute Pressure Sensor Circuit Low Bank 2	P2A0D - Manifold Absolute Pressure Sensor Circuit High Bank 2	P2E68 - Fuel Trim System Lean During Cylinder Deactivation Bank 1	P2E69 - Fuel Trim System Rich During Cylinder Deactivation Bank 1	CONTINUED NEXT LINE
	P2E6A - Fuel Trim System Lean During Cylinder Deactivation Bank 2	P2E6B - Fuel Trim System Rich During Cylinder Deactivation Bank 2	P30D8 - Control Module Processor Serial Peripheral Interface Bus 3	P30D9 - Control Module Processor Serial Peripheral Interface Bus 4	END																		
P2227 - Barometric Pressure Sensor Performance Bank 1 Sensor 1	P0121 - Throttle Position Sensor Performance	P0122 - Throttle Position Sensor Circuit Low	P0123 - Throttle Position Sensor Circuit High	P0221 - Throttle Position Sensor 2 Performance	P0222 - Throttle Position Sensor 2 Circuit Low	P0223 - Throttle Position Sensor 2 Circuit High	P0226 - Throttle Position Sensor Performance Bank 2	P0227 - Throttle Position Sensor Circuit Low Bank 2	P0228 - Throttle Position Sensor Circuit High Bank 2	P0236 - Turbocharger Boost Sensor Performance	P0237 - Turbocharger Boost Sensor Circuit Low	P0238 - Turbocharger Boost Sensor Circuit High	P0240 - Turbocharger Boost Sensor Performance Bank 2	P0241 - Turbocharger Boost Sensor Circuit Low Bank 2	P0242 - Turbocharger Boost Sensor Circuit High Bank 2	P212B - Throttle Position Sensor 2 Performance Bank 2	P212C - Throttle Position Sensor 2 Circuit Low Bank 2	P212D - Throttle Position Sensor 2 Circuit High Bank 2	P2176 - Minimum Throttle Position Not Learned	P2227 - Barometric Pressure Sensor Performance Bank 1 Sensor 1	P2228 - Barometric Pressure Sensor Circuit Low Bank 1 Sensor 1	P2229 - Barometric Pressure Sensor Circuit High Bank 1 Sensor 1	CONTINUED NEXT LINE
	U0607 - Lost Communication With Throttle Position Sensor Bank 1 Sensor 2	U0688 - Lost Communication With Throttle Position Sensor Bank 2 Sensor 2	U136D - Invalid Data Received From Throttle Position Sensor 2	U136F - Invalid Data Received From Throttle Position Sensor Bank 2 Sensor 2	END																		
P2228 - Barometric Pressure Sensor Circuit Low Bank 1 Sensor 1	END																						
P2229 - Barometric Pressure Sensor Circuit High Bank 1 Sensor 1	END																						
P222B - Barometric Pressure Sensor Performance Bank 2 Sensor 1	P2227 - Barometric Pressure Sensor Performance Bank 1 Sensor 1	P2228 - Barometric Pressure Sensor Circuit Low Bank 1 Sensor 1	P2229 - Barometric Pressure Sensor Circuit High Bank 1 Sensor 1	END																			
P222C - Barometric Pressure Sensor Circuit Low Bank 2 Sensor 1	P2227 - Barometric Pressure Sensor Performance Bank 1 Sensor 1	P2228 - Barometric Pressure Sensor Circuit Low Bank 1 Sensor 1	P2229 - Barometric Pressure Sensor Circuit High Bank 1 Sensor 1	END																			
P222D - Barometric Pressure Sensor Circuit High Bank 2 Sensor 1	P2227 - Barometric Pressure Sensor Performance Bank 1 Sensor 1	P2228 - Barometric Pressure Sensor Circuit Low Bank 1 Sensor 1	P2229 - Barometric Pressure Sensor Circuit High Bank 1 Sensor 1	END																			
P2232 - Oxygen Sensor Signal Circuit Shorted to Heater Circuit Bank 1 Sensor 2	P0036 - Oxygen Sensor Heater Control Circuit Open Bank 1 Sensor 2	P0037 - Oxygen Sensor Heater Control Circuit Low Bank 1 Sensor 2	P0038 - Oxygen Sensor Heater Control Circuit High Bank 1 Sensor 2	END																			
P2235 - Oxygen Sensor Signal Circuit Shorted to Heater Circuit Bank 2 Sensor 2	P0056 - Oxygen Sensor Heater Control Circuit Open Bank 2 Sensor 2	P0057 - Oxygen Sensor Heater Control Circuit Low Bank 2 Sensor 2	P0058 - Oxygen Sensor Heater Control Circuit High Bank 2 Sensor 2	END																			
P2237 - Oxygen Sensor Pumping Current Control Circuit Open Bank 1 Sensor 1	P0030 - Oxygen Sensor Heater Control Circuit Open Bank 1 Sensor 1	P0031 - Oxygen Sensor Heater Control Circuit Low Bank 1 Sensor 1	P0032 - Oxygen Sensor Heater Control Circuit High Bank 1 Sensor 1	P0130 - HO2S Circuit Bank 1 Sensor 1	P0131 - Oxygen Sensor Circuit Low Bank 1 Sensor 1	P0132 - Oxygen Sensor Circuit High Bank 1 Sensor 1	P064D - Control Module Oxygen Sensor Bank 1 Sensor 1 System Performance	P2237 - Oxygen Sensor Pumping Current Control Circuit Open Bank 1 Sensor 1	P2251 - Oxygen Sensor Low Reference Circuit Open Bank 1 Sensor 1	P2626 - Oxygen Sensor Pumping Current Trim Circuit Open Bank 1 Sensor 1	P30D8 - Control Module Processor Serial Peripheral Interface Bus 3	END											
P2240 - Oxygen Sensor Pumping Current Control Circuit Open Bank 2 Sensor 1	P0050 - Oxygen Sensor Heater Control Circuit Open Bank 2 Sensor 1	P0051 - Oxygen Sensor Heater Control Circuit Low Bank 2 Sensor 1	P0052 - Oxygen Sensor Heater Control Circuit High Bank 2 Sensor 1	P0150 - HO2S Circuit Bank 2 Sensor 1	P0151 - Oxygen Sensor Circuit Low Bank 2 Sensor 1	P0152 - Oxygen Sensor Circuit High Bank 2 Sensor 1	P064E - Control Module Oxygen Sensor Bank 2 Sensor 1 System Performance	P2240 - Oxygen Sensor Pumping Current Control Circuit Open Bank 2 Sensor 1	P2254 - Oxygen Sensor Low Reference Circuit Open Bank 2 Sensor 1	P2629 - Oxygen Sensor Pumping Current Trim Circuit Open Bank 2 Sensor 1	P30D9 - Control Module Processor Serial Peripheral Interface Bus 4	END											
P2251 - Oxygen Sensor Low Reference Circuit Open Bank 1 Sensor 1	P0030 - Oxygen Sensor Heater Control Circuit Open Bank 1 Sensor 1	P0031 - Oxygen Sensor Heater Control Circuit Low Bank 1 Sensor 1	P0032 - Oxygen Sensor Heater Control Circuit High Bank 1 Sensor 1	P0130 - HO2S Circuit Bank 1 Sensor 1	P0131 - Oxygen Sensor Circuit Low Bank 1 Sensor 1	P0132 - Oxygen Sensor Circuit High Bank 1 Sensor 1	P064D - Control Module Oxygen Sensor Bank 1 Sensor 1 System Performance	P2237 - Oxygen Sensor Pumping Current Control Circuit Open Bank 1 Sensor 1	P2251 - Oxygen Sensor Low Reference Circuit Open Bank 1 Sensor 1	P2626 - Oxygen Sensor Pumping Current Trim Circuit Open Bank 1 Sensor 1	P30D8 - Control Module Processor Serial Peripheral Interface Bus 3	END											
P2254 - Oxygen Sensor Low Reference Circuit Open Bank 2 Sensor 1	P0050 - Oxygen Sensor Heater Control Circuit Open Bank 2 Sensor 1	P0051 - Oxygen Sensor Heater Control Circuit Low Bank 2 Sensor 1	P0052 - Oxygen Sensor Heater Control Circuit High Bank 2 Sensor 1	P0150 - HO2S Circuit Bank 2 Sensor 1	P0151 - Oxygen Sensor Circuit Low Bank 2 Sensor 1	P0152 - Oxygen Sensor Circuit High Bank 2 Sensor 1	P064E - Control Module Oxygen Sensor Bank 2 Sensor 1 System Performance	P2240 - Oxygen Sensor Pumping Current Control Circuit Open Bank 2 Sensor 1	P2254 - Oxygen Sensor Low Reference Circuit Open Bank 2 Sensor 1	P2629 - Oxygen Sensor Pumping Current Trim Circuit Open Bank 2 Sensor 1	P30D9 - Control Module Processor Serial Peripheral Interface Bus 4	END											
P2261 - Boost Bypass Valve A Stuck	P000A - Camshaft Position System Slow Response Bank 1	P000B - Exhaust Camshaft Position System Slow Response Bank 1	P000C - Intake Camshaft Position System Slow Response Bank 2	P000D - Exhaust Camshaft Position System Slow Response Bank 2	P0010 - Camshaft Position Actuator Control Circuit Open	P0011 - Camshaft Position System Performance	P0013 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 1	P0014 - Exhaust Camshaft Position System Performance Bank 1	P0020 - Intake Camshaft Position Actuator Control Circuit Open Bank 2	P0021 - Intake Camshaft Position System Performance Bank 2	P0023 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 2	P0024 - Exhaust Camshaft Position System Performance Bank 2	P0033 - Boost Bypass Valve A Control Circuit Open	P0034 - Boost Bypass Valve A Control Circuit Low	P0035 - Boost Bypass Valve A Control Circuit High	P0071 - Ambient Air Temperature Sensor Performance	P0072 - Ambient Air Temperature Sensor Circuit Low	P0073 - Ambient Air Temperature Sensor Circuit High	P0096 - Intake Air Temperature Sensor 2 Performance	P0097 - Intake Air Temperature Sensor 2 Circuit Low	P0098 - Intake Air Temperature Sensor 2 Circuit High	P0099 - Intake Air Temperature Sensor 2 Circuit Erratic	CONTINUED NEXT LINE
	P00A6 - Intake Air Temperature Sensor 2 Performance Bank 2	P00A7 - Intake Air Temperature Sensor 2 Circuit Low Bank 2	P00A8 - Intake Air Temperature Sensor 2 Circuit High Bank 2	P00A9 - Intake Air Temperature Sensor 2 Circuit Erratic Bank 2	P00C0 - Boost Bypass Valve B Control Circuit Open	P00C1 - Boost Bypass Valve B Control Circuit Low	P00C2 - Boost Bypass Valve B Control Circuit High	P0101 - Mass Air Flow Sensor Performance	P0102 - Mass Air Flow Sensor Circuit Low	P0103 - Mass Air Flow Sensor Circuit High	P0106 - Manifold Absolute Pressure Sensor Performance	P0107 - Manifold Absolute Pressure Sensor Circuit Low	P0108 - Manifold Absolute Pressure Sensor Circuit High	P010B - Mass Air Flow Sensor 2 Performance	P010C - Mass Air Flow Sensor 2 Circuit Low	P010D - Mass Air Flow Sensor 2 Circuit High	P0121 - Throttle Position Sensor Performance	P0122 - Throttle Position Sensor Circuit Low	P0123 - Throttle Position Sensor Circuit High	P0221 - Throttle Position Sensor 2 Performance	P0222 - Throttle Position Sensor 2 Circuit Low	P0223 - Throttle Position Sensor 2 Circuit High	CONTINUED NEXT LINE
	P0226 - Throttle Position Sensor Performance Bank 2	P0227 - Throttle Position Sensor Circuit Low Bank 2	P0228 - Throttle Position Sensor Circuit High Bank 2	P0236 - Turbocharger Boost Sensor Performance	P0237 - Turbocharger Boost Sensor Circuit Low	P0238 - Turbocharger Boost Sensor Circuit High	P0240 - Turbocharger Boost Sensor Performance Bank 2	P0241 - Turbocharger Boost Sensor Circuit Low Bank 2	P0242 - Turbocharger Boost Sensor Circuit High Bank 2	P2088 - Camshaft Position Actuator Control Circuit Low	P2089 - Camshaft Position Actuator Control Circuit High	P2090 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 1	P2091 - Exhaust Camshaft Position Actuator Control Circuit High Bank 1	P2092 - Intake Camshaft Position Actuator Control Circuit Low Bank 2	P2093 - Intake Camshaft Position Actuator Control Circuit High Bank 2	P2094 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 2	P2095 - Exhaust Camshaft Position Actuator Control Circuit High Bank 2	P212B - Throttle Position Sensor 2 Performance Bank 2	P212C - Throttle Position Sensor 2 Circuit Low Bank 2	P212D - Throttle Position Sensor 2 Circuit High Bank 2	P2176 - Minimum Throttle Position Not Learned	P2227 - Barometric Pressure Sensor Performance Bank 1 Sensor 1	CONTINUED NEXT LINE
	P2228 - Barometric Pressure Sensor Circuit Low Bank 1 Sensor 1	P2229 - Barometric Pressure Sensor Circuit High Bank 1 Sensor 1	P2A0B - Manifold Absolute Pressure Sensor Performance Bank 2	P2A0C - Manifold Absolute Pressure Sensor Circuit Low Bank 2	P2A0D - Manifold Absolute Pressure Sensor Circuit High Bank 2	U0607 - Lost Communication With Throttle Position Sensor Bank 1 Sensor 2	U0688 - Lost Communication With Throttle Position Sensor Bank 2 Sensor 2	U136D - Invalid Data Received From Throttle Position Sensor 2	U136F - Invalid Data Received From Throttle Position Sensor Bank 2 Sensor 2	END													
P2270 - Oxygen Sensor Signal Stuck Lean Bank 1 Sensor 2	P000A - Camshaft Position System Slow Response Bank 1	P000B - Exhaust Camshaft Position System Slow Response Bank 1	P000C - Intake Camshaft Position System Slow Response Bank 2	P000D - Exhaust Camshaft Position System Slow Response Bank 2	P0010 - Camshaft Position Actuator Control Circuit Open	P0011 - Camshaft Position System Performance	P0013 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 1	P0014 - Exhaust Camshaft Position System Performance Bank 1	P0020 - Intake Camshaft Position Actuator Control Circuit Open Bank 2	P0021 - Intake Camshaft Position System Performance Bank 2	P0023 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 2	P0024 - Exhaust Camshaft Position System Performance Bank 2	P0030 - Oxygen Sensor Heater Control Circuit Open Bank 1 Sensor 1	P0031 - Oxygen Sensor Heater Control Circuit Low Bank 1 Sensor 1	P0032 - Oxygen Sensor Heater Control Circuit High Bank 1 Sensor 1	P0036 - Oxygen Sensor Heater Control Circuit Open Bank 1 Sensor 2	P0037 - Oxygen Sensor Heater Control Circuit Low Bank 1 Sensor 2	P0038 - Oxygen Sensor Heater Control Circuit High Bank 1 Sensor 2	P0101 - Mass Air Flow Sensor Performance	P0102 - Mass Air Flow Sensor Circuit Low	P0103 - Mass Air Flow Sensor Circuit High	P0106 - Manifold Absolute Pressure Sensor Performance	CONTINUED NEXT LINE
	P0107 - Manifold Absolute Pressure Sensor Circuit Low	P0108 - Manifold Absolute Pressure Sensor Circuit High	P010B - Mass Air Flow Sensor 2 Performance	P010C - Mass Air Flow Sensor 2 Circuit Low	P010D - Mass Air Flow Sensor 2 Circuit High	P0116 - Engine Coolant Temperature Sensor Performance	P0117 - Engine Coolant Temperature Sensor Circuit Low	P0118 - Engine Coolant Temperature Sensor Circuit High	P0119 - Engine Coolant Temperature Sensor Circuit Erratic	P0121 - Throttle Position Sensor Performance	P0122 - Throttle Position Sensor Circuit Low	P0123 - Throttle Position Sensor Circuit High	P0128 - Engine Coolant Temperature Below Thermostat Regulating Temperature	P0130 - HO2S Circuit Bank 1 Sensor 1	P0133 - Oxygen Sensor Slow Response Bank 1 Sensor 1	P0137 - Oxygen Sensor Circuit Low Bank 1 Sensor 2	P0138 - Oxygen Sensor Circuit High Bank 1 Sensor 2	P013A - Oxygen Sensor Slow Response - Rich to Lean Bank 1 Sensor 2	P013B - Oxygen Sensor Slow Response - Lean to Rich Bank 1 Sensor 2	P013E - Oxygen Sensor Delayed Response - Rich to Lean Bank 1 Sensor 2	P013F - Oxygen Sensor Delayed Response - Lean to Rich Bank 1 Sensor 2	P0140 - Oxygen Sensor Circuit Insufficient Activity Bank 1 Sensor 2	CONTINUED NEXT LINE
	P0141 - Oxygen Sensor Heater Performance Bank 1 Sensor 2	P0171 - Fuel Trim System Lean Bank 1	P0172 - Fuel Trim System Rich Bank 1	P0221 - Throttle Position Sensor 2 Performance	P0222 - Throttle Position Sensor 2 Circuit Low	P0223 - Throttle Position Sensor 2 Circuit High	P0226 - Throttle Position Sensor Performance Bank 2	P0227 - Throttle Position Sensor Circuit Low Bank 2	P0228 - Throttle Position Sensor Circuit High Bank 2	P0300 - Engine Misfire Detected	P0301 - Cylinder 1 Misfire Detected	P0302 - Cylinder 2 Misfire Detected	P0303 - Cylinder 3 Misfire Detected	P0304 - Cylinder 4 Misfire Detected	P0305 - Cylinder 5 Misfire Detected	P0306 - Cylinder 6 Misfire Detected	P0307 - Cylinder 7 Misfire Detected	P0308 - Cylinder 8 Misfire Detected	P0443 - Evaporative Emission Purge Solenoid Control Circuit Open	P0458 - Evaporative Emission Purge Solenoid Control Circuit Low	P0459 - Evaporative Emission Purge Solenoid Control Circuit High	P0496 - Evaporative Emission System Flow During Non-Purge	CONTINUED NEXT LINE
	P0497 - Evaporative Emission System No Flow During Purge	P04AB - Evaporative Emission Purge Solenoid Control Circuit Open Bank 2	P04AC - Evaporative Emission Purge Solenoid Control Circuit Low Bank 2	P04AD - Evaporative Emission Purge Solenoid Control Circuit High Bank 2	P04AE - Evaporative Emission Purge Solenoid Performance Bank 2	P04DF - Evaporative Emission Purge Solenoid Performance Bank 1	P0641 - Sensor Reference Voltage 1 Circuit Open	P0651 - Sensor Reference Voltage 2 Circuit Open	P0697 - Sensor Reference Voltage 3 Circuit Open	P06A3 - Sensor Reference Voltage 4 Circuit Open	P2088 - Camshaft Position Actuator Control Circuit Low	P2089 - Camshaft Position Actuator Control Circuit High	P2090 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 1	P2091 - Exhaust Camshaft Position Actuator Control Circuit High Bank 1	P2092 - Intake Camshaft Position Actuator Control Circuit Low Bank 2	P2093 - Intake Camshaft Position Actuator Control Circuit High Bank 2	P2094 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 2	P2095 - Exhaust Camshaft Position Actuator Control Circuit High Bank 2	P2096 - Post Catalyst Fuel Trim System Low Limit Bank 1	P2097 - Post Catalyst Fuel Trim System High Limit Bank 1	P212B - Throttle Position Sensor 2 Performance Bank 2	P212C - Throttle Position Sensor 2 Circuit Low Bank 2	CONTINUED NEXT LINE
	P212D - Throttle Position Sensor 2 Circuit High Bank 2	P2177 - Fuel Trim System Lean Off Idle Bank 1	P2178 - Fuel Trim System Rich Off Idle Bank 1	P2187 - Fuel Trim System Lean at Idle Bank 1	P2188 - Fuel Trim System Rich at Idle Bank 1	P2195 - Oxygen Sensor Signal Biased Lean Bank 1 Sensor 1	P2196 - Oxygen Sensor Signal Biased Rich Bank 1 Sensor 1	P2232 - Oxygen Sensor Signal Circuit Shorted to Heater Circuit Bank 1 Sensor 2	P2270 - Oxygen Sensor Signal Stuck Lean Bank 1 Sensor 2	P2271 - Oxygen Sensor Signal Stuck Rich Bank 1 Sensor 2	P2A0B - Manifold Absolute Pressure Sensor Performance Bank 2	P2A0C - Manifold Absolute Pressure Sensor Circuit Low Bank 2	P2A0D - Manifold Absolute Pressure Sensor Circuit High Bank 2	P2E68 - Fuel Trim System Lean During Cylinder Deactivation Bank 1	P2E69 - Fuel Trim System Rich During Cylinder Deactivation Bank 1	P318A - Cylinder 2 Reactivation Performance - Trapped High Pressure Exhaust Charge	P318B - Cylinder 3 Reactivation Performance - Trapped High Pressure Exhaust Charge	P318D - Cylinder 5 Reactivation Performance - Trapped High Pressure Exhaust Charge	P3190 - Cylinder 8 Reactivation Performance - Trapped High Pressure Exhaust Charge	P3409 - Cylinder 2 Deactivation Solenoid Control Circuit Open	P3411 - Cylinder 2 Deactivation Solenoid Control Circuit Low	P3412 - Cylinder 2 Deactivation Solenoid Control Circuit High	CONTINUED NEXT LINE
	P3417 - Cylinder 3 Deactivation Solenoid Control Circuit Open	P3419 - Cylinder 3 Deactivation Solenoid Control Circuit Low	P3420 - Cylinder 3 Deactivation Solenoid Control Circuit High	P3433 - Cylinder 5 Deactivation Solenoid Control Circuit Open	P3435 - Cylinder 5 Deactivation Solenoid Control Circuit Low	P3436 - Cylinder 5 Deactivation Solenoid Control Circuit High	P3457 - Cylinder 8 Deactivation Solenoid Control Circuit Open	P3459 - Cylinder 8 Deactivation Solenoid Control Circuit Low	P3460 - Cylinder 8 Deactivation Solenoid Control Circuit High	P3499 - Cylinder 2 Deactivation Performance	P349A - Cylinder 3 Deactivation Performance	P349C - Cylinder 5 Deactivation Performance	P349F - Cylinder 8 Deactivation Performance	U0607 - Lost Communication With Throttle Position Sensor Bank 1 Sensor 2	U0688 - Lost Communication With Throttle Position Sensor Bank 2 Sensor 2	U136D - Invalid Data Received From Throttle Position Sensor 2	U136F - Invalid Data Received From Throttle Position Sensor Bank 2 Sensor 2	END					
P2271 - Oxygen Sensor Signal Stuck Rich Bank 1 Sensor 2	P000A - Camshaft Position System Slow Response Bank 1	P000B - Exhaust Camshaft Position System Slow Response Bank 1	P000C - Intake Camshaft Position System Slow Response Bank 2	P000D - Exhaust Camshaft Position System Slow Response Bank 2	P0010 - Camshaft Position Actuator Control Circuit Open	P0011 - Camshaft Position System Performance	P0013 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 1	P0014 - Exhaust Camshaft Position System Performance Bank 1	P0020 - Intake Camshaft Position Actuator Control Circuit Open Bank 2	P0021 - Intake Camshaft Position System Performance Bank 2	P0023 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 2	P0024 - Exhaust Camshaft Position System Performance Bank 2	P0030 - Oxygen Sensor Heater Control Circuit Open Bank 1 Sensor 1	P0031 - Oxygen Sensor Heater Control Circuit Low Bank 1 Sensor 1	P0032 - Oxygen Sensor Heater Control Circuit High Bank 1 Sensor 1	P0036 - Oxygen Sensor Heater Control Circuit Open Bank 1 Sensor 2	P0037 - Oxygen Sensor Heater Control Circuit Low Bank 1 Sensor 2	P0038 - Oxygen Sensor Heater Control Circuit High Bank 1 Sensor 2	P0101 - Mass Air Flow Sensor Performance	P0102 - Mass Air Flow Sensor Circuit Low	P0103 - Mass Air Flow Sensor Circuit High	P0106 - Manifold Absolute Pressure Sensor Performance	CONTINUED NEXT LINE
	P0107 - Manifold Absolute Pressure Sensor Circuit Low	P0108 - Manifold Absolute Pressure Sensor Circuit High	P010B - Mass Air Flow Sensor 2 Performance	P010C - Mass Air Flow Sensor 2 Circuit Low	P010D - Mass Air Flow Sensor 2 Circuit High	P0116 - Engine Coolant Temperature Sensor Performance	P0117 - Engine Coolant Temperature Sensor Circuit Low	P0118 - Engine Coolant Temperature Sensor Circuit High	P0119 - Engine Coolant Temperature Sensor Circuit Erratic	P0121 - Throttle Position Sensor Performance	P0122 - Throttle Position Sensor Circuit Low	P0123 - Throttle Position Sensor Circuit High	P0128 - Engine Coolant Temperature Below Thermostat Regulating Temperature	P0130 - HO2S Circuit Bank 1 Sensor 1	P0133 - Oxygen Sensor Slow Response Bank 1 Sensor 1	P0137 - Oxygen Sensor Circuit Low Bank 1 Sensor 2	P0138 - Oxygen Sensor Circuit High Bank 1 Sensor 2	P013A - Oxygen Sensor Slow Response - Rich to Lean Bank 1 Sensor 2	P013B - Oxygen Sensor Slow Response - Lean to Rich Bank 1 Sensor 2	P013E - Oxygen Sensor Delayed Response - Rich to Lean Bank 1 Sensor 2	P013F - Oxygen Sensor Delayed Response - Lean to Rich Bank 1 Sensor 2	P0140 - Oxygen Sensor Circuit Insufficient Activity Bank 1 Sensor 2	CONTINUED NEXT LINE
	P0141 - Oxygen Sensor Heater Performance Bank 1 Sensor 2	P0171 - Fuel Trim System Lean Bank 1	P0172 - Fuel Trim System Rich Bank 1	P0221 - Throttle Position Sensor 2 Performance	P0222 - Throttle Position Sensor 2 Circuit Low	P0223 - Throttle Position Sensor 2 Circuit High	P0226 - Throttle Position Sensor Performance Bank 2	P0227 - Throttle Position Sensor Circuit Low Bank 2	P0228 - Throttle Position Sensor Circuit High Bank 2	P0300 - Engine Misfire Detected	P0301 - Cylinder 1 Misfire Detected	P0302 - Cylinder 2 Misfire Detected	P0303 - Cylinder 3 Misfire Detected	P0304 - Cylinder 4 Misfire Detected	P0305 - Cylinder 5 Misfire Detected	P0306 - Cylinder 6 Misfire Detected	P0307 - Cylinder 7 Misfire Detected	P0308 - Cylinder 8 Misfire Detected	P0443 - Evaporative Emission Purge Solenoid Control Circuit Open	P0458 - Evaporative Emission Purge Solenoid Control Circuit Low	P0459 - Evaporative Emission Purge Solenoid Control Circuit High	P0496 - Evaporative Emission System Flow During Non-Purge	CONTINUED NEXT LINE
	P0497 - Evaporative Emission System No Flow During Purge	P04AB - Evaporative Emission Purge Solenoid Control Circuit Open Bank 2	P04AC - Evaporative Emission Purge Solenoid Control Circuit Low Bank 2	P04AD - Evaporative Emission Purge Solenoid Control Circuit High Bank 2	P04AE - Evaporative Emission Purge Solenoid Performance Bank 2	P04DF - Evaporative Emission Purge Solenoid Performance Bank 1	P0641 - Sensor Reference Voltage 1 Circuit Open	P0651 - Sensor Reference Voltage 2 Circuit Open	P0697 - Sensor Reference Voltage 3 Circuit Open	P06A3 - Sensor Reference Voltage 4 Circuit Open	P2088 - Camshaft Position Actuator Control Circuit Low	P2089 - Camshaft Position Actuator Control Circuit High	P2090 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 1	P2091 - Exhaust Camshaft Position Actuator Control Circuit High Bank 1	P2092 - Intake Camshaft Position Actuator Control Circuit Low Bank 2	P2093 - Intake Camshaft Position Actuator Control Circuit High Bank 2	P2094 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 2	P2095 - Exhaust Camshaft Position Actuator Control Circuit High Bank 2	P2096 - Post Catalyst Fuel Trim System Low Limit Bank 1	P2097 - Post Catalyst Fuel Trim System High Limit Bank 1	P212B - Throttle Position Sensor 2 Performance Bank 2	P212C - Throttle Position Sensor 2 Circuit Low Bank 2	CONTINUED NEXT LINE
	P212D - Throttle Position Sensor 2 Circuit High Bank 2	P2177 - Fuel Trim System Lean Off Idle Bank 1	P2178 - Fuel Trim System Rich Off Idle Bank 1	P2187 - Fuel Trim System Lean at Idle Bank 1	P2188 - Fuel Trim System Rich at Idle Bank 1	P2195 - Oxygen Sensor Signal Biased Lean Bank 1 Sensor 1	P2196 - Oxygen Sensor Signal Biased Rich Bank 1 Sensor 1	P2232 - Oxygen Sensor Signal Circuit Shorted to Heater Circuit Bank 1 Sensor 2	P2270 - Oxygen Sensor Signal Stuck Lean Bank 1 Sensor 2	P2271 - Oxygen Sensor Signal Stuck Rich Bank 1 Sensor 2	P2A0B - Manifold Absolute Pressure Sensor Performance Bank 2	P2A0C - Manifold Absolute Pressure Sensor Circuit Low Bank 2	P2A0D - Manifold Absolute Pressure Sensor Circuit High Bank 2	P2E68 - Fuel Trim System Lean During Cylinder Deactivation Bank 1	P2E69 - Fuel Trim System Rich During Cylinder Deactivation Bank 1	P318A - Cylinder 2 Reactivation Performance - Trapped High Pressure Exhaust Charge	P318B - Cylinder 3 Reactivation Performance - Trapped High Pressure Exhaust Charge	P318D - Cylinder 5 Reactivation Performance - Trapped High Pressure Exhaust Charge	P3190 - Cylinder 8 Reactivation Performance - Trapped High Pressure Exhaust Charge	P3409 - Cylinder 2 Deactivation Solenoid Control Circuit Open	P3411 - Cylinder 2 Deactivation Solenoid Control Circuit Low	P3412 - Cylinder 2 Deactivation Solenoid Control Circuit High	CONTINUED NEXT LINE
	P3417 - Cylinder 3 Deactivation Solenoid Control Circuit Open	P3419 - Cylinder 3 Deactivation Solenoid Control Circuit Low	P3420 - Cylinder 3 Deactivation Solenoid Control Circuit High	P3433 - Cylinder 5 Deactivation Solenoid Control Circuit Open	P3435 - Cylinder 5 Deactivation Solenoid Control Circuit Low	P3436 - Cylinder 5 Deactivation Solenoid Control Circuit High	P3457 - Cylinder 8 Deactivation Solenoid Control Circuit Open	P3459 - Cylinder 8 Deactivation Solenoid Control Circuit Low	P3460 - Cylinder 8 Deactivation Solenoid Control Circuit High	P3499 - Cylinder 2 Deactivation Performance	P349A - Cylinder 3 Deactivation Performance	P349C - Cylinder 5 Deactivation Performance	P349F - Cylinder 8 Deactivation Performance	U0607 - Lost Communication With Throttle Position Sensor Bank 1 Sensor 2	U0688 - Lost Communication With Throttle Position Sensor Bank 2 Sensor 2	U136D - Invalid Data Received From Throttle Position Sensor 2	U136F - Invalid Data Received From Throttle Position Sensor Bank 2 Sensor 2	END					
P2272 - Oxygen Sensor Signal Stuck Lean Bank 2 Sensor 2	P000A - Camshaft Position System Slow Response Bank 1	P000B - Exhaust Camshaft Position System Slow Response Bank 1	P000C - Intake Camshaft Position System Slow Response Bank 2	P000D - Exhaust Camshaft Position System Slow Response Bank 2	P0010 - Camshaft Position Actuator Control Circuit Open	P0011 - Camshaft Position System Performance	P0013 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 1	P0014 - Exhaust Camshaft Position System Performance Bank 1	P0020 - Intake Camshaft Position Actuator Control Circuit Open Bank 2	P0021 - Intake Camshaft Position System Performance Bank 2	P0023 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 2	P0024 - Exhaust Camshaft Position System Performance Bank 2	P0050 - Oxygen Sensor Heater Control Circuit Open Bank 2 Sensor 1	P0051 - Oxygen Sensor Heater Control Circuit Low Bank 2 Sensor 1	P0052 - Oxygen Sensor Heater Control Circuit High Bank 2 Sensor 1	P0056 - Oxygen Sensor Heater Control Circuit Open Bank 2 Sensor 2	P0057 - Oxygen Sensor Heater Control Circuit Low Bank 2 Sensor 2	P0058 - Oxygen Sensor Heater Control Circuit High Bank 2 Sensor 2	P0101 - Mass Air Flow Sensor Performance	P0102 - Mass Air Flow Sensor Circuit Low	P0103 - Mass Air Flow Sensor Circuit High	P0106 - Manifold Absolute Pressure Sensor Performance	CONTINUED NEXT LINE
	P0107 - Manifold Absolute Pressure Sensor Circuit Low	P0108 - Manifold Absolute Pressure Sensor Circuit High	P010B - Mass Air Flow Sensor 2 Performance	P010C - Mass Air Flow Sensor 2 Circuit Low	P010D - Mass Air Flow Sensor 2 Circuit High	P0116 - Engine Coolant Temperature Sensor Performance	P0117 - Engine Coolant Temperature Sensor Circuit Low	P0118 - Engine Coolant Temperature Sensor Circuit High	P0119 - Engine Coolant Temperature Sensor Circuit Erratic	P0121 - Throttle Position Sensor Performance	P0122 - Throttle Position Sensor Circuit Low	P0123 - Throttle Position Sensor Circuit High	P0128 - Engine Coolant Temperature Below Thermostat Regulating Temperature	P013C - Oxygen Sensor Slow Response - Rich to Lean Bank 2 Sensor 2	P013D - Oxygen Sensor Slow Response - Lean to Rich Bank 2 Sensor 2	P014A - Oxygen Sensor Delayed Response - Rich to Lean Bank 2 Sensor 2	P014B - Oxygen Sensor Delayed Response - Lean to Rich Bank 2 Sensor 2	P0150 - HO2S Circuit Bank 2 Sensor 1	P0153 - Oxygen Sensor Slow Response Bank 2 Sensor 1	P0157 - Oxygen Sensor Circuit Low Bank 2 Sensor 2	P0158 - Oxygen Sensor Circuit High Bank 2 Sensor 2	P0160 - Oxygen Sensor Circuit Insufficient Activity Bank 2 Sensor 2	CONTINUED NEXT LINE
	P0161 - Oxygen Sensor Heater Performance Bank 2 Sensor 2	P0174 - Fuel Trim System Lean Bank 2	P0175 - Fuel Trim System Rich Bank 2	P0221 - Throttle Position Sensor 2 Performance	P0222 - Throttle Position Sensor 2 Circuit Low	P0223 - Throttle Position Sensor 2 Circuit High	P0226 - Throttle Position Sensor Performance Bank 2	P0227 - Throttle Position Sensor Circuit Low Bank 2	P0228 - Throttle Position Sensor Circuit High Bank 2	P0300 - Engine Misfire Detected	P0301 - Cylinder 1 Misfire Detected	P0302 - Cylinder 2 Misfire Detected	P0303 - Cylinder 3 Misfire Detected	P0304 - Cylinder 4 Misfire Detected	P0305 - Cylinder 5 Misfire Detected	P0306 - Cylinder 6 Misfire Detected	P0307 - Cylinder 7 Misfire Detected	P0308 - Cylinder 8 Misfire Detected	P0443 - Evaporative Emission Purge Solenoid Control Circuit Open	P0458 - Evaporative Emission Purge Solenoid Control Circuit Low	P0459 - Evaporative Emission Purge Solenoid Control Circuit High	P0496 - Evaporative Emission System Flow During Non-Purge	CONTINUED NEXT LINE
	P0497 - Evaporative Emission System No Flow During Purge	P04AB - Evaporative Emission Purge Solenoid Control Circuit Open Bank 2	P04AC - Evaporative Emission Purge Solenoid Control Circuit Low Bank 2	P04AD - Evaporative Emission Purge Solenoid Control Circuit High Bank 2	P04AE - Evaporative Emission Purge Solenoid Performance Bank 2	P04DF - Evaporative Emission Purge Solenoid Performance Bank 1	P0641 - Sensor Reference Voltage 1 Circuit Open	P0651 - Sensor Reference Voltage 2 Circuit Open	P0697 - Sensor Reference Voltage 3 Circuit Open	P06A3 - Sensor Reference Voltage 4 Circuit Open	P2088 - Camshaft Position Actuator Control Circuit Low	P2089 - Camshaft Position Actuator Control Circuit High	P2090 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 1	P2091 - Exhaust Camshaft Position Actuator Control Circuit High Bank 1	P2092 - Intake Camshaft Position Actuator Control Circuit Low Bank 2	P2093 - Intake Camshaft Position Actuator Control Circuit High Bank 2	P2094 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 2	P2095 - Exhaust Camshaft Position Actuator Control Circuit High Bank 2	P2098 - Post Catalyst Fuel Trim System Low Limit Bank 2	P2099 - Post Catalyst Fuel Trim System High Limit Bank 2	P212B - Throttle Position Sensor 2 Performance Bank 2	P212C - Throttle Position Sensor 2 Circuit Low Bank 2	CONTINUED NEXT LINE
	P212D - Throttle Position Sensor 2 Circuit High Bank 2	P2179 - Fuel Trim System Lean Off Idle Bank 2	P2180 - Fuel Trim System Rich Off Idle Bank 2	P2189 - Fuel Trim System Lean at Idle Bank 2	P2190 - Fuel Trim System Rich at Idle Bank 2	P2197 - Oxygen Sensor Signal Biased Lean Bank 2 Sensor 1	P2198 - Oxygen Sensor Signal Biased Rich Bank 2 Sensor 1	P2235 - Oxygen Sensor Signal Circuit Shorted to Heater Circuit Bank 2 Sensor 2	P2272 - Oxygen Sensor Signal Stuck Lean Bank 2 Sensor 2	P2273 - Oxygen Sensor Signal Stuck Rich Bank 2 Sensor 2	P2A0B - Manifold Absolute Pressure Sensor Performance Bank 2	P2A0C - Manifold Absolute Pressure Sensor Circuit Low Bank 2	P2A0D - Manifold Absolute Pressure Sensor Circuit High Bank 2	P2E6A - Fuel Trim System Lean During Cylinder Deactivation Bank 2	P2E6B - Fuel Trim System Rich During Cylinder Deactivation Bank 2	P318A - Cylinder 2 Reactivation Performance - Trapped High Pressure Exhaust Charge	P318B - Cylinder 3 Reactivation Performance - Trapped High Pressure Exhaust Charge	P318D - Cylinder 5 Reactivation Performance - Trapped High Pressure Exhaust Charge	P3190 - Cylinder 8 Reactivation Performance - Trapped High Pressure Exhaust Charge	P3409 - Cylinder 2 Deactivation Solenoid Control Circuit Open	P3411 - Cylinder 2 Deactivation Solenoid Control Circuit Low	P3412 - Cylinder 2 Deactivation Solenoid Control Circuit High	CONTINUED NEXT LINE
	P3417 - Cylinder 3 Deactivation Solenoid Control Circuit Open	P3419 - Cylinder 3 Deactivation Solenoid Control Circuit Low	P3420 - Cylinder 3 Deactivation Solenoid Control Circuit High	P3433 - Cylinder 5 Deactivation Solenoid Control Circuit Open	P3435 - Cylinder 5 Deactivation Solenoid Control Circuit Low	P3436 - Cylinder 5 Deactivation Solenoid Control Circuit High	P3457 - Cylinder 8 Deactivation Solenoid Control Circuit Open	P3459 - Cylinder 8 Deactivation Solenoid Control Circuit Low	P3460 - Cylinder 8 Deactivation Solenoid Control Circuit High	P3499 - Cylinder 2 Deactivation Performance	P349A - Cylinder 3 Deactivation Performance	P349C - Cylinder 5 Deactivation Performance	P349F - Cylinder 8 Deactivation Performance	U0607 - Lost Communication With Throttle Position Sensor Bank 1 Sensor 2	U0688 - Lost Communication With Throttle Position Sensor Bank 2 Sensor 2	U136D - Invalid Data Received From Throttle Position Sensor 2	U136F - Invalid Data Received From Throttle Position Sensor Bank 2 Sensor 2	END					

19 OBDG07 ECM DTC Inhibit Tables

The DTCs in this column is inhibited by the DTCs listed to the right	The DTCs in these columns inhibit the DTC to the left						The DTCs in these columns inhibit the DTC to the left						The DTCs in these columns inhibit the DTC to the left						The DTCs in these columns inhibit the DTC to the left				
Inhibited DTC	Fault Active DTCs						Fault Active DTCs						Fault Active DTCs						Fault Active DTCs				
P2273 - Oxygen Sensor Signal Stuck Rich Bank 2 Sensor 2	P000A - Camshaft Position System Slow Response Bank 1	P000B - Exhaust Camshaft Position System Slow Response Bank 1	P000C - Intake Camshaft Position System Slow Response Bank 2	P000D - Exhaust Camshaft Position System Slow Response Bank 2	P0010 - Camshaft Position Actuator Control Circuit Open	P0011 - Camshaft Position System Performance	P0013 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 1	P0014 - Exhaust Camshaft Position System Performance Bank 1	P0020 - Intake Camshaft Position Actuator Control Circuit Open Bank 2	P0021 - Intake Camshaft Position System Performance Bank 2	P0023 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 2	P0024 - Exhaust Camshaft Position System Performance Bank 2	P0050 - Oxygen Sensor Heater Control Circuit Open Bank 2 Sensor 1	P0051 - Oxygen Sensor Heater Control Circuit Low Bank 2 Sensor 1	P0052 - Oxygen Sensor Heater Control Circuit High Bank 2 Sensor 1	P0056 - Oxygen Sensor Heater Control Circuit Open Bank 2 Sensor 2	P0057 - Oxygen Sensor Heater Control Circuit Low Bank 2 Sensor 2	P0058 - Oxygen Sensor Heater Control Circuit High Bank 2 Sensor 2	P0101 - Mass Air Flow Sensor Performance	P0102 - Mass Air Flow Sensor Circuit Low	P0103 - Mass Air Flow Sensor Circuit High	P0106 - Manifold Absolute Pressure Sensor Performance	CONTINUED NEXT LINE
	P0107 - Manifold Absolute Pressure Sensor Circuit Low	P0108 - Manifold Absolute Pressure Sensor Circuit High	P010B - Mass Air Flow Sensor 2 Performance	P010C - Mass Air Flow Sensor 2 Circuit Low	P010D - Mass Air Flow Sensor 2 Circuit High	P0116 - Engine Coolant Temperature Sensor Performance	P0117 - Engine Coolant Temperature Sensor Circuit Low	P0118 - Engine Coolant Temperature Sensor Circuit High	P0119 - Engine Coolant Temperature Sensor Circuit Erratic	P0121 - Throttle Position Sensor Performance	P0122 - Throttle Position Sensor Circuit Low	P0123 - Throttle Position Sensor Circuit High	P0128 - Engine Coolant Temperature Below Thermostat Regulating Temperature	P013C - Oxygen Sensor Slow Response - Rich to Lean Bank 2 Sensor 2	P013D - Oxygen Sensor Slow Response - Lean to Rich Bank 2 Sensor 2	P014A - Oxygen Sensor Delayed Response - Rich to Lean Bank 2 Sensor 2	P014B - Oxygen Sensor Delayed Response - Lean to Rich Bank 2 Sensor 2	P0150 - HO2S Circuit Bank 2 Sensor 1	P0153 - Oxygen Sensor Slow Response Bank 2 Sensor 1	P0157 - Oxygen Sensor Circuit Low Bank 2 Sensor 2	P0158 - Oxygen Sensor Circuit High Bank 2 Sensor 2	P0160 - Oxygen Sensor Circuit Insufficient Activity Bank 2 Sensor 2	CONTINUED NEXT LINE
	P0161 - Oxygen Sensor Heater Performance Bank 2 Sensor 2	P0174 - Fuel Trim System Lean Bank 2	P0175 - Fuel Trim System Rich Bank 2	P0221 - Throttle Position Sensor 2 Performance	P0222 - Throttle Position Sensor 2 Circuit Low	P0223 - Throttle Position Sensor 2 Circuit High	P0226 - Throttle Position Sensor Performance Bank 2	P0227 - Throttle Position Sensor Circuit Low Bank 2	P0228 - Throttle Position Sensor Circuit High Bank 2	P0300 - Engine Misfire Detected	P0301 - Cylinder 1 Misfire Detected	P0302 - Cylinder 2 Misfire Detected	P0303 - Cylinder 3 Misfire Detected	P0304 - Cylinder 4 Misfire Detected	P0305 - Cylinder 5 Misfire Detected	P0306 - Cylinder 6 Misfire Detected	P0307 - Cylinder 7 Misfire Detected	P0308 - Cylinder 8 Misfire Detected	P0443 - Evaporative Emission Purge Solenoid Control Circuit Open	P0458 - Evaporative Emission Purge Solenoid Control Circuit Low	P0459 - Evaporative Emission Purge Solenoid Control Circuit High	P0496 - Evaporative Emission System Flow During Non-Purge	CONTINUED NEXT LINE
	P0497 - Evaporative Emission System No Flow During Purge	P04AB - Evaporative Emission Purge Solenoid Control Circuit Open Bank 2	P04AC - Evaporative Emission Purge Solenoid Control Circuit Low Bank 2	P04AD - Evaporative Emission Purge Solenoid Control Circuit High Bank 2	P04AE - Evaporative Emission Purge Solenoid Performance Bank 2	P04DF - Evaporative Emission Purge Solenoid Performance Bank 1	P0641 - Sensor Reference Voltage 1 Circuit Open	P0651 - Sensor Reference Voltage 2 Circuit Open	P0697 - Sensor Reference Voltage 3 Circuit Open	P06A3 - Sensor Reference Voltage 4 Circuit Open	P2088 - Camshaft Position Actuator Control Circuit Low	P2089 - Camshaft Position Actuator Control Circuit High	P2090 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 1	P2091 - Exhaust Camshaft Position Actuator Control Circuit High Bank 1	P2092 - Intake Camshaft Position Actuator Control Circuit Low Bank 2	P2093 - Intake Camshaft Position Actuator Control Circuit High Bank 2	P2094 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 2	P2095 - Exhaust Camshaft Position Actuator Control Circuit High Bank 2	P2098 - Post Catalyst Fuel Trim System Low Limit Bank 2	P2099 - Post Catalyst Fuel Trim System High Limit Bank 2	P212B - Throttle Position Sensor 2 Performance Bank 2	P212C - Throttle Position Sensor 2 Circuit Low Bank 2	CONTINUED NEXT LINE
	P212D - Throttle Position Sensor 2 Circuit High Bank 2	P2179 - Fuel Trim System Lean Off Idle Bank 2	P2180 - Fuel Trim System Rich Off Idle Bank 2	P2189 - Fuel Trim System Lean at Idle Bank 2	P2190 - Fuel Trim System Rich at Idle Bank 2	P2197 - Oxygen Sensor Signal Biased Lean Bank 2 Sensor 1	P2198 - Oxygen Sensor Signal Biased Rich Bank 2 Sensor 1	P2235 - Oxygen Sensor Signal Circuit Shorted to Heater Circuit Bank 2 Sensor 2	P2272 - Oxygen Sensor Signal Stuck Lean Bank 2 Sensor 2	P2273 - Oxygen Sensor Signal Stuck Rich Bank 2 Sensor 2	P2A0B - Manifold Absolute Pressure Sensor Performance Bank 2	P2A0C - Manifold Absolute Pressure Sensor Circuit Low Bank 2	P2A0D - Manifold Absolute Pressure Sensor Circuit High Bank 2	P2E6A - Fuel Trim System Lean During Cylinder Deactivation Bank 2	P2E6B - Fuel Trim System Rich During Cylinder Deactivation Bank 2	P318A - Cylinder 2 Reactivation Performance - Trapped High Pressure Exhaust Charge	P318B - Cylinder 3 Reactivation Performance - Trapped High Pressure Exhaust Charge	P318D - Cylinder 5 Reactivation Performance - Trapped High Pressure Exhaust Charge	P3190 - Cylinder 8 Reactivation Performance - Trapped High Pressure Exhaust Charge	P3409 - Cylinder 2 Deactivation Solenoid Control Circuit Open	P3411 - Cylinder 2 Deactivation Solenoid Control Circuit Low	P3412 - Cylinder 2 Deactivation Solenoid Control Circuit High	CONTINUED NEXT LINE
	P3417 - Cylinder 3 Deactivation Solenoid Control Circuit Open	P3419 - Cylinder 3 Deactivation Solenoid Control Circuit Low	P3420 - Cylinder 3 Deactivation Solenoid Control Circuit High	P3433 - Cylinder 5 Deactivation Solenoid Control Circuit Open	P3435 - Cylinder 5 Deactivation Solenoid Control Circuit Low	P3436 - Cylinder 5 Deactivation Solenoid Control Circuit High	P3457 - Cylinder 8 Deactivation Solenoid Control Circuit Open	P3459 - Cylinder 8 Deactivation Solenoid Control Circuit Low	P3460 - Cylinder 8 Deactivation Solenoid Control Circuit High	P3499 - Cylinder 2 Deactivation Performance	P349A - Cylinder 3 Deactivation Performance	P349C - Cylinder 5 Deactivation Performance	P349F - Cylinder 8 Deactivation Performance	U0607 - Lost Communication With Throttle Position Sensor Bank 1 Sensor 2	U0688 - Lost Communication With Throttle Position Sensor Bank 2 Sensor 2	U136D - Invalid Data Received From Throttle Position Sensor 2	U136F - Invalid Data Received From Throttle Position Sensor Bank 2 Sensor 2	END					
P227B - Barometric Pressure Sensor Performance Bank 1 Sensor 2	P2227 - Barometric Pressure Sensor Performance Bank 1 Sensor 1	P2228 - Barometric Pressure Sensor Circuit Low Bank 1 Sensor 1	P2229 - Barometric Pressure Sensor Circuit High Bank 1 Sensor 1	END																			
P227C - Barometric Pressure Sensor Circuit Low Bank 1 Sensor 2	P2227 - Barometric Pressure Sensor Performance Bank 1 Sensor 1	P2228 - Barometric Pressure Sensor Circuit Low Bank 1 Sensor 1	P2229 - Barometric Pressure Sensor Circuit High Bank 1 Sensor 1	END																			
P227D - Barometric Pressure Sensor Circuit High Bank 1 Sensor 2	P2227 - Barometric Pressure Sensor Performance Bank 1 Sensor 1	P2228 - Barometric Pressure Sensor Circuit Low Bank 1 Sensor 1	P2229 - Barometric Pressure Sensor Circuit High Bank 1 Sensor 1	END																			
P228C - Fuel Pressure Regulator Exceeded Control Limits - Pressure Too Low	P0090 - Fuel Pressure Regulator Control Circuit Open	P0191 - Fuel Rail Pressure Sensor Performance	P10E8 - Fuel Pressure Regulator High Control Circuit Shorted to Control Circuit	P2C02 - Fuel Pressure Regulator Control Circuit Open Bank 2	P313A - Fuel Pressure Regulator High Control Circuit Shorted to Control Circuit Bank 2	END																	
P228D - Fuel Pressure Regulator Exceeded Control Limits - Pressure Too High	P0090 - Fuel Pressure Regulator Control Circuit Open	P0191 - Fuel Rail Pressure Sensor Performance	P10E8 - Fuel Pressure Regulator High Control Circuit Shorted to Control Circuit	P2C02 - Fuel Pressure Regulator Control Circuit Open Bank 2	P313A - Fuel Pressure Regulator High Control Circuit Shorted to Control Circuit Bank 2	END																	
P2297 - Oxygen Sensor Out of Range During Deceleration Bank 1 Sensor 1	P0030 - Oxygen Sensor Heater Control Circuit Open Bank 1 Sensor 1	P0031 - Oxygen Sensor Heater Control Circuit Low Bank 1 Sensor 1	P0032 - Oxygen Sensor Heater Control Circuit High Bank 1 Sensor 1	P0130 - HO2S Circuit Bank 1 Sensor 1	P0131 - Oxygen Sensor Circuit Low Bank 1 Sensor 1	P0132 - Oxygen Sensor Circuit High Bank 1 Sensor 1	P064D - Control Module Oxygen Sensor Bank 1 Sensor 1 System Performance	P2195 - Oxygen Sensor Signal Biased Lean Bank 1 Sensor 1	P2196 - Oxygen Sensor Signal Biased Rich Bank 1 Sensor 1	P2237 - Oxygen Sensor Pumping Current Control Circuit Open Bank 1 Sensor 1	P2251 - Oxygen Sensor Low Reference Circuit Open Bank 1 Sensor 1	P2626 - Oxygen Sensor Pumping Current Trim Circuit Open Bank 1 Sensor 1	P30D8 - Control Module Processor Serial Peripheral Interface Bus 3	END									
P2298 - Oxygen Sensor Out of Range During Deceleration Bank 2 Sensor 1	P0050 - Oxygen Sensor Heater Control Circuit Open Bank 2 Sensor 1	P0051 - Oxygen Sensor Heater Control Circuit Low Bank 2 Sensor 1	P0052 - Oxygen Sensor Heater Control Circuit High Bank 2 Sensor 1	P0150 - HO2S Circuit Bank 2 Sensor 1	P0151 - Oxygen Sensor Circuit Low Bank 2 Sensor 1	P0152 - Oxygen Sensor Circuit High Bank 2 Sensor 1	P064E - Control Module Oxygen Sensor Bank 2 Sensor 1 System Performance	P2197 - Oxygen Sensor Signal Biased Lean Bank 2 Sensor 1	P2198 - Oxygen Sensor Signal Biased Rich Bank 2 Sensor 1	P2240 - Oxygen Sensor Pumping Current Control Circuit Open Bank 2 Sensor 1	P2254 - Oxygen Sensor Low Reference Circuit Open Bank 2 Sensor 1	P2629 - Oxygen Sensor Pumping Current Trim Circuit Open Bank 2 Sensor 1	P30D9 - Control Module Processor Serial Peripheral Interface Bus 4	END									
P2300 - Ignition Coil 1 Control Circuit Low	END																						
P2301 - Ignition Coil 1 Control Circuit High	END																						
P2303 - Ignition Coil 2 Control Circuit Low	END																						
P2304 - Ignition Coil 2 Control Circuit High	END																						
P2306 - Ignition Coil 3 Control Circuit Low	END																						
P2307 - Ignition Coil 3 Control Circuit High	END																						
P2309 - Ignition Coil 4 Control Circuit Low	END																						
P2310 - Ignition Coil 4 Control Circuit High	END																						
P2312 - Ignition Coil 5 Control Circuit Low	END																						
P2313 - Ignition Coil 5 Control Circuit High	END																						
P2315 - Ignition Coil 6 Control Circuit Low	END																						
P2316 - Ignition Coil 6 Control Circuit High	END																						
P2318 - Ignition Coil 7 Control Circuit Low	END																						
P2319 - Ignition Coil 7 Control Circuit High	END																						
P2321 - Ignition Coil 8 Control Circuit Low	END																						
P2322 - Ignition Coil 8 Control Circuit High	END																						
P2500 - Generator L-Terminal Circuit Low	END																						
P2501 - Generator L-Terminal Circuit High	END																						
P2534 - Ignition On/Start Switch Circuit Low	END																						
P2535 - Ignition On/Start Switch Circuit High	END																						
P2537 - Ignition Accessory Switch Circuit Low	END																						
P2538 - Ignition Accessory Switch Circuit High	END																						
P257D - Engine Hood Switch Performance	END																						
P257E - Engine Hood Switch Circuit Low	END																						
P257F - Engine Hood Switch Circuit High	END																						
P25A2 - Brake System Control Module Requested MIL Illumination	END																						
P25B3 - Turbocharger A Wastegate Stuck Open	END																						
P25B4 - Turbocharger A Wastegate Stuck Closed	END																						
P25B5 - Turbocharger B Wastegate Stuck Open	END																						
P25B6 - Turbocharger B Wastegate Stuck Closed	END																						
P25CA - Camshaft Position Actuator Park Lock Control Circuit Open	END																						
P25CB - Camshaft Position Actuator Park Lock Control Circuit Low	END																						
P25CC - Camshaft Position Actuator Park Lock Control Circuit High	END																						
P25CD - Intake Camshaft Position Actuator Park Lock Control Circuit Open Bank 2	END																						
P25CE - Intake Camshaft Position Actuator Park Lock Control Circuit Low Bank 2	END																						

The DTCs in this column is inhibited by the DTCs listed to the right	The DTCs in these columns inhibit the DTC to the left						The DTCs in these columns inhibit the DTC to the left						The DTCs in these columns inhibit the DTC to the left						The DTCs in these columns inhibit the DTC to the left				
Inhibited DTC	Fault Active DTCs						Fault Active DTCs						Fault Active DTCs						Fault Active DTCs				
P25CF - Intake Camshaft Position Actuator Park Lock Control Circuit High Bank 2	END																						
P2600 - Auxiliary Coolant Pump Relay Control Circuit Open	END																						
P2602 - Auxiliary Coolant Pump Relay Control Circuit Low	END																						
P2603 - Auxiliary Coolant Pump Relay Control Circuit High	END																						
P2626 - Oxygen Sensor Pumping Current Trim Circuit Open Bank 1 Sensor 1	P0030 - Oxygen Sensor Heater Control Circuit Open Bank 1 Sensor 1	P0031 - Oxygen Sensor Heater Control Circuit Low Bank 1 Sensor 1	P0032 - Oxygen Sensor Heater Control Circuit High Bank 1 Sensor 1	P0130 - HO2S Circuit Bank 1 Sensor 1	P0131 - Oxygen Sensor Circuit Low Bank 1 Sensor 1	P0132 - Oxygen Sensor Circuit High Bank 1 Sensor 1	P064D - Control Module Oxygen Sensor Bank 1 Sensor 1 System Performance	P2237 - Oxygen Sensor Pumping Current Control Circuit Open Bank 1 Sensor 1	P2251 - Oxygen Sensor Low Reference Circuit Open Bank 1 Sensor 1	P2626 - Oxygen Sensor Pumping Current Trim Circuit Open Bank 1 Sensor 1	P30D8 - Control Module Processor Serial Peripheral Interface Bus 3	END											
P2629 - Oxygen Sensor Pumping Current Trim Circuit Open Bank 2 Sensor 1	P0050 - Oxygen Sensor Heater Control Circuit Open Bank 2 Sensor 1	P0051 - Oxygen Sensor Heater Control Circuit Low Bank 2 Sensor 1	P0052 - Oxygen Sensor Heater Control Circuit High Bank 2 Sensor 1	P0150 - HO2S Circuit Bank 2 Sensor 1	P0151 - Oxygen Sensor Circuit Low Bank 2 Sensor 1	P0152 - Oxygen Sensor Circuit High Bank 2 Sensor 1	P064E - Control Module Oxygen Sensor Bank 2 Sensor 1 System Performance	P2240 - Oxygen Sensor Pumping Current Control Circuit Open Bank 2 Sensor 1	P2254 - Oxygen Sensor Low Reference Circuit Open Bank 2 Sensor 1	P2629 - Oxygen Sensor Pumping Current Trim Circuit Open Bank 2 Sensor 1	P30D9 - Control Module Processor Serial Peripheral Interface Bus 4	END											
P262B - Control Module Power Off Timer Performance	P0072 - Ambient Air Temperature Sensor Circuit Low	P0073 - Ambient Air Temperature Sensor Circuit High	P0074 - Ambient Air Temperature Sensor Circuit Intermittent	P0117 - Engine Coolant Temperature Sensor Circuit Low	P0118 - Engine Coolant Temperature Sensor Circuit High	P0119 - Engine Coolant Temperature Sensor Circuit Erratic	P0603 - Control Module Long Term Memory Reset	P0604 - Control Module Random Access Memory	P0651 - Sensor Reference Voltage 2 Circuit Open	P0689 - Engine Controls Ignition Relay Feedback Circuit Low	P0690 - Engine Controls Ignition Relay Feedback Circuit High	P0697 - Sensor Reference Voltage 3 Circuit Open	P262B - Control Module Power Off Timer Performance	END									
P2635 - Fuel Pump Flow Performance	END																						
P263A - Malfunction Indicator Lamp Control Circuit Low	END																						
P263B - Malfunction Indicator Lamp Control Circuit High	END																						
P26E4 - Starter Drive Pinion Relay Control Circuit Open	END																						
P26E5 - Starter Drive Pinion Relay Control Circuit Low	END																						
P26E6 - Starter Drive Pinion Relay Control Circuit High	END																						
P26FA - Low Temperature Loop Coolant Pump Overspeed	END																						
P2A0B - Manifold Absolute Pressure Sensor Performance Bank 2	P000A - Camshaft Position System Slow Response Bank 1	P000B - Exhaust Camshaft Position System Slow Response Bank 1	P000C - Intake Camshaft Position System Slow Response Bank 2	P000D - Exhaust Camshaft Position System Slow Response Bank 2	P0010 - Camshaft Position Actuator Control Circuit Open	P0011 - Camshaft Position System Performance	P0013 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 1	P0014 - Exhaust Camshaft Position System Performance Bank 1	P0020 - Intake Camshaft Position Actuator Control Circuit Open Bank 2	P0021 - Intake Camshaft Position System Performance Bank 2	P0023 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 2	P0024 - Exhaust Camshaft Position System Performance Bank 2	P00A6 - Intake Air Temperature Sensor 2 Performance Bank 2	P00A7 - Intake Air Temperature Sensor 2 Circuit Low Bank 2	P00A8 - Intake Air Temperature Sensor 2 Circuit High Bank 2	P00A9 - Intake Air Temperature Sensor 2 Circuit Erratic Bank 2	P0107 - Manifold Absolute Pressure Sensor Circuit Low	P0108 - Manifold Absolute Pressure Sensor Circuit High	P0226 - Throttle Position Sensor Performance Bank 2	P0227 - Throttle Position Sensor Circuit Low Bank 2	P0228 - Throttle Position Sensor Circuit High Bank 2	P0240 - Turbocharger Boost Sensor Performance Bank 2	CONTINUED NEXT LINE
	P0241 - Turbocharger Boost Sensor Circuit Low Bank 2	P0242 - Turbocharger Boost Sensor Circuit High Bank 2	P0335 - Crankshaft Position Sensor Circuit	P0336 - Crankshaft Position Sensor Performance	P034A - Crankshaft Position Sensor Start Position Incorrect	P034B - Crankshaft Position Sensor Direction Incorrect	P2088 - Camshaft Position Actuator Control Circuit Low	P2089 - Camshaft Position Actuator Control Circuit High	P2090 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 1	P2091 - Exhaust Camshaft Position Actuator Control Circuit High Bank 1	P2092 - Intake Camshaft Position Actuator Control Circuit Low Bank 2	P2093 - Intake Camshaft Position Actuator Control Circuit High Bank 2	P2094 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 2	P2095 - Exhaust Camshaft Position Actuator Control Circuit High Bank 2	P212B - Throttle Position Sensor 2 Performance Bank 2	P212C - Throttle Position Sensor 2 Circuit Low Bank 2	P212D - Throttle Position Sensor 2 Circuit High Bank 2	P218A - Minimum Throttle Position Not Learned Bank 2	P2227 - Barometric Pressure Sensor Performance Bank 1 Sensor 1	P2228 - Barometric Pressure Sensor Circuit Low Bank 1 Sensor 1	P2229 - Barometric Pressure Sensor Circuit High Bank 1 Sensor 1	P2A0B - Manifold Absolute Pressure Sensor Performance Bank 2	CONTINUED NEXT LINE
	P2A0C - Manifold Absolute Pressure Sensor Circuit Low Bank 2	P2A0D - Manifold Absolute Pressure Sensor Circuit High Bank 2	U0688 - Lost Communication With Throttle Position Sensor Bank 2 Sensor 2	U136F - Invalid Data Received From Throttle Position Sensor Bank 2 Sensor 2	END																		
P2A0C - Manifold Absolute Pressure Sensor Circuit Low Bank 2	P0641 - Sensor Reference Voltage 1 Circuit Open	END																					
P2A0D - Manifold Absolute Pressure Sensor Circuit High Bank 2	P0641 - Sensor Reference Voltage 1 Circuit Open	END																					
P2AB8 - Turbocharger A Wastegate Position Sensor Circuit Low	END																						
P2AB9 - Turbocharger A Wastegate Position Sensor Circuit High	END																						
P2ABB - Turbocharger B Wastegate Position Sensor Circuit Low	END																						
P2ABC - Turbocharger B Wastegate Position Sensor Circuit High	END																						
P2ABD - Turbocharger Wastegate Actuator A Driver Current/Temperature Too High	END																						
P2ABE - Turbocharger Wastegate Actuator B Driver Current/Temperature Too High	END																						
P2B81 - Turbocharger A Wastegate Position Sensor Performance	END																						
P2B82 - Turbocharger B Wastegate Position Sensor Performance	END																						
P2B93 - Turbocharger A Wastegate Position Sensor Exceeded Learning Limit	P25B3 - Turbocharger A Wastegate Stuck Open	P25B4 - Turbocharger A Wastegate Stuck Closed	END																				
P2B94 - Turbocharger B Wastegate Position Sensor Exceeded Learning Limit	P25B5 - Turbocharger B Wastegate Stuck Open	P25B6 - Turbocharger B Wastegate Stuck Closed	END																				
P2B95 - Cold Start Injection Pulse Performance	END																						
P2BA0 - Low Temperature Loop Coolant Pump Underspeed	END																						
P2C02 - Fuel Pressure Regulator Control Circuit Open Bank 2	END																						
P2C03 - Fuel Pressure Regulator Control Circuit Low Bank 2	END																						
P2C04 - Fuel Pressure Regulator Control Circuit High Bank 2	END																						
P2C48 - Low Temperature Loop Coolant Pump Performance	END																						
P2C9B - Cold Start Turbocharger A Wastegate Control Performance	END																						
P2C9C - Cold Start Turbocharger B Wastegate Control Performance	END																						
P2E68 - Fuel Trim System Lean During Cylinder Deactivation Bank 1	P000A - Camshaft Position System Slow Response Bank 1	P000B - Exhaust Camshaft Position System Slow Response Bank 1	P000C - Intake Camshaft Position System Slow Response Bank 2	P000D - Exhaust Camshaft Position System Slow Response Bank 2	P0010 - Camshaft Position Actuator Control Circuit Open	P0011 - Camshaft Position System Performance	P0013 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 1	P0014 - Exhaust Camshaft Position System Performance Bank 1	P0016 - Crankshaft to Camshaft Correlation	P0017 - Crankshaft to Exhaust Camshaft Correlation Bank 1	P0018 - Crankshaft to Intake Camshaft Correlation Bank 2	P0019 - Crankshaft to Exhaust Camshaft Correlation Bank 2	P0020 - Intake Camshaft Position Actuator Control Circuit Open Bank 2	P0021 - Intake Camshaft Position System Performance Bank 2	P0023 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 2	P0024 - Exhaust Camshaft Position System Performance Bank 2	P0030 - Oxygen Sensor Heater Control Circuit Open Bank 1 Sensor 1	P0031 - Oxygen Sensor Heater Control Circuit Low Bank 1 Sensor 1	P0032 - Oxygen Sensor Heater Control Circuit High Bank 1 Sensor 1	P0050 - Oxygen Sensor Heater Control Circuit Open Bank 2 Sensor 1	P0051 - Oxygen Sensor Heater Control Circuit Low Bank 2 Sensor 1	P0052 - Oxygen Sensor Heater Control Circuit High Bank 2 Sensor 1	CONTINUED NEXT LINE
	P0096 - Intake Air Temperature Sensor 2 Performance	P0097 - Intake Air Temperature Sensor 2 Circuit Low	P0098 - Intake Air Temperature Sensor 2 Circuit High	P0099 - Intake Air Temperature Sensor 2 Circuit Erratic	P00A6 - Intake Air Temperature Sensor 2 Performance Bank 2	P00A7 - Intake Air Temperature Sensor 2 Circuit Low Bank 2	P00A8 - Intake Air Temperature Sensor 2 Circuit High Bank 2	P00A9 - Intake Air Temperature Sensor 2 Circuit Erratic Bank 2	P0121 - Throttle Position Sensor Performance	P0122 - Throttle Position Sensor Circuit Low	P0123 - Throttle Position Sensor Circuit High	P0130 - HO2S Circuit Bank 1 Sensor 1	P0131 - Oxygen Sensor Circuit Low Bank 1 Sensor 1	P0132 - Oxygen Sensor Circuit High Bank 1 Sensor 1	P0133 - Oxygen Sensor Slow Response Bank 1 Sensor 1	P0150 - HO2S Circuit Bank 2 Sensor 1	P0151 - Oxygen Sensor Circuit Low Bank 2 Sensor 1	P0152 - Oxygen Sensor Circuit High Bank 2 Sensor 1	P0153 - Oxygen Sensor Slow Response Bank 2 Sensor 1	P0221 - Throttle Position Sensor 2 Performance	P0222 - Throttle Position Sensor 2 Circuit Low	P0223 - Throttle Position Sensor 2 Circuit High	CONTINUED NEXT LINE
	P0226 - Throttle Position Sensor Performance Bank 2	P0227 - Throttle Position Sensor Circuit Low Bank 2	P0228 - Throttle Position Sensor Circuit High Bank 2	P0300 - Engine Misfire Detected	P0301 - Cylinder 1 Misfire Detected	P0302 - Cylinder 2 Misfire Detected	P0303 - Cylinder 3 Misfire Detected	P0304 - Cylinder 4 Misfire Detected	P0305 - Cylinder 5 Misfire Detected	P0306 - Cylinder 6 Misfire Detected	P0307 - Cylinder 7 Misfire Detected	P0308 - Cylinder 8 Misfire Detected	P0335 - Crankshaft Position Sensor Circuit	P0336 - Crankshaft Position Sensor Performance	P034A - Crankshaft Position Sensor Start Position Incorrect	P034B - Crankshaft Position Sensor Direction Incorrect	P0443 - Evaporative Emission Purge Solenoid Control Circuit Open	P0458 - Evaporative Emission Purge Solenoid Control Circuit Low	P0459 - Evaporative Emission Purge Solenoid Control Circuit High	P0496 - Evaporative Emission System Flow During Non-Purge	P04AB - Evaporative Emission Purge Solenoid Control Circuit Open Bank 2	P04AC - Evaporative Emission Purge Solenoid Control Circuit Low Bank 2	CONTINUED NEXT LINE
	P04AD - Evaporative Emission Purge Solenoid Control Circuit High Bank 2	P04AE - Evaporative Emission Purge Solenoid Performance Bank 2	P04DF - Evaporative Emission Purge Solenoid Performance Bank 1	P05CC - Cold Start Intake Camshaft Position System Performance Bank 1	P05CD - Cold Start Intake Camshaft Position System Performance Bank 2	P0641 - Sensor Reference Voltage 1 Circuit Open	P064D - Control Module Oxygen Sensor Bank 1 Sensor 1 System Performance	P064E - Control Module Oxygen Sensor Bank 2 Sensor 1 System Performance	P0651 - Sensor Reference Voltage 2 Circuit Open	P0697 - Sensor Reference Voltage 3 Circuit Open	P06A3 - Sensor Reference Voltage 4 Circuit Open	P2088 - Camshaft Position Actuator Control Circuit Low	P2089 - Camshaft Position Actuator Control Circuit High	P2090 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 1	P2091 - Exhaust Camshaft Position Actuator Control Circuit High Bank 1	P2092 - Intake Camshaft Position Actuator Control Circuit Low Bank 2	P2093 - Intake Camshaft Position Actuator Control Circuit High Bank 2	P2094 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 2	P2095 - Exhaust Camshaft Position Actuator Control Circuit High Bank 2	P2096 - Post Catalyst Fuel Trim System Low Limit Bank 1	P2097 - Post Catalyst Fuel Trim System High Limit Bank 1	P2098 - Post Catalyst Fuel Trim System Low Limit Bank 2	CONTINUED NEXT LINE
	P2099 - Post Catalyst Fuel Trim System High Limit Bank 2	P212B - Throttle Position Sensor 2 Performance Bank 2	P212C - Throttle Position Sensor 2 Circuit Low Bank 2	P212D - Throttle Position Sensor 2 Circuit High Bank 2	P2176 - Minimum Throttle Position Not Learned	P218A - Minimum Throttle Position Not Learned Bank 2	P2195 - Oxygen Sensor Signal Biased Lean Bank 1 Sensor 1	P2196 - Oxygen Sensor Signal Biased Rich Bank 1 Sensor 1	P2197 - Oxygen Sensor Signal Biased Lean Bank 2 Sensor 1	P2198 - Oxygen Sensor Signal Biased Rich Bank 2 Sensor 1	P2237 - Oxygen Sensor Pumping Current Control Circuit Open Bank 1 Sensor 1	P2240 - Oxygen Sensor Pumping Current Control Circuit Open Bank 2 Sensor 1	P2251 - Oxygen Sensor Low Reference Circuit Open Bank 1 Sensor 1	P2254 - Oxygen Sensor Low Reference Circuit Open Bank 2 Sensor 1	P2297 - Oxygen Sensor Out of Range During Deceleration Bank 1 Sensor 1	P2298 - Oxygen Sensor Out of Range During Deceleration Bank 2 Sensor 1	P2626 - Oxygen Sensor Pumping Current Trim Circuit Open Bank 1 Sensor 1	P2629 - Oxygen Sensor Pumping Current Trim Circuit Open Bank 2 Sensor 1	P30D8 - Control Module Processor Serial Peripheral Interface Bus 3	P30D9 - Control Module Processor Serial Peripheral Interface Bus 4	U0607 - Lost Communication With Throttle Position Sensor Bank 1 Sensor 2	U0688 - Lost Communication With Throttle Position Sensor Bank 2 Sensor 2	CONTINUED NEXT LINE
	U136D - Invalid Data Received From Throttle Position Sensor 2	U136F - Invalid Data Received From Throttle Position Sensor Bank 2 Sensor 2	END																				

19 OBDG07 ECM DTC Inhibit Tables

The DTCs in this column is inhibited by the DTCs listed to the right	The DTCs in these columns inhibit the DTC to the left						The DTCs in these columns inhibit the DTC to the left						The DTCs in these columns inhibit the DTC to the left						The DTCs in these columns inhibit the DTC to the left				
Inhibited DTC	Fault Active DTCs						Fault Active DTCs						Fault Active DTCs						Fault Active DTCs				
P2E69 - Fuel Trim System Rich During Cylinder Deactivation Bank 1	P000A - Camshaft Position System Slow Response Bank 1	P000B - Exhaust Camshaft Position System Slow Response Bank 1	P000C - Intake Camshaft Position System Slow Response Bank 2	P000D - Exhaust Camshaft Position System Slow Response Bank 2	P0010 - Camshaft Position Actuator Control Circuit Open	P0011 - Camshaft Position System Performance	P0013 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 1	P0014 - Exhaust Camshaft Position System Performance Bank 1	P0016 - Crankshaft to Camshaft Correlation	P0017 - Crankshaft to Exhaust Camshaft Correlation Bank 1	P0018 - Crankshaft to Intake Camshaft Correlation Bank 2	P0019 - Crankshaft to Exhaust Camshaft Correlation Bank 2	P0020 - Intake Camshaft Position Actuator Control Circuit Open Bank 2	P0021 - Intake Camshaft Position System Performance Bank 2	P0023 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 2	P0024 - Exhaust Camshaft Position System Performance Bank 2	P0030 - Oxygen Sensor Heater Control Circuit Open Bank 1 Sensor 1	P0031 - Oxygen Sensor Heater Control Circuit Low Bank 1 Sensor 1	P0032 - Oxygen Sensor Heater Control Circuit High Bank 1 Sensor 1	P0050 - Oxygen Sensor Heater Control Circuit Open Bank 2 Sensor 1	P0051 - Oxygen Sensor Heater Control Circuit Low Bank 2 Sensor 1	P0052 - Oxygen Sensor Heater Control Circuit High Bank 2 Sensor 1	CONTINUED NEXT LINE
	P0096 - Intake Air Temperature Sensor 2 Performance	P0097 - Intake Air Temperature Sensor 2 Circuit Low	P0098 - Intake Air Temperature Sensor 2 Circuit High	P0099 - Intake Air Temperature Sensor 2 Circuit Erratic	P00A6 - Intake Air Temperature Sensor 2 Performance Bank 2	P00A7 - Intake Air Temperature Sensor 2 Circuit Low Bank 2	P00A8 - Intake Air Temperature Sensor 2 Circuit High Bank 2	P00A9 - Intake Air Temperature Sensor 2 Circuit Erratic Bank 2	P0121 - Throttle Position Sensor Performance	P0122 - Throttle Position Sensor Circuit Low	P0123 - Throttle Position Sensor Circuit High	P0130 - HO2S Circuit Bank 1 Sensor 1	P0131 - Oxygen Sensor Circuit Low Bank 1 Sensor 1	P0132 - Oxygen Sensor Circuit High Bank 1 Sensor 1	P0133 - Oxygen Sensor Slow Response Bank 1 Sensor 1	P0150 - HO2S Circuit Bank 2 Sensor 1	P0151 - Oxygen Sensor Circuit Low Bank 2 Sensor 1	P0152 - Oxygen Sensor Circuit High Bank 2 Sensor 1	P0153 - Oxygen Sensor Slow Response Bank 2 Sensor 1	P0221 - Throttle Position Sensor 2 Performance	P0222 - Throttle Position Sensor 2 Circuit Low	P0223 - Throttle Position Sensor 2 Circuit High	CONTINUED NEXT LINE
	P0226 - Throttle Position Sensor Performance Bank 2	P0227 - Throttle Position Sensor Circuit Low Bank 2	P0228 - Throttle Position Sensor Circuit High Bank 2	P0300 - Engine Misfire Detected	P0301 - Cylinder 1 Misfire Detected	P0302 - Cylinder 2 Misfire Detected	P0303 - Cylinder 3 Misfire Detected	P0304 - Cylinder 4 Misfire Detected	P0305 - Cylinder 5 Misfire Detected	P0306 - Cylinder 6 Misfire Detected	P0307 - Cylinder 7 Misfire Detected	P0308 - Cylinder 8 Misfire Detected	P0335 - Crankshaft Position Sensor Circuit	P0336 - Crankshaft Position Sensor Performance	P034A - Crankshaft Position Sensor Start Position Incorrect	P034B - Crankshaft Position Sensor Direction Incorrect	P0443 - Evaporative Emission Purge Solenoid Control Circuit Open	P0458 - Evaporative Emission Purge Solenoid Control Circuit Low	P0459 - Evaporative Emission Purge Solenoid Control Circuit High	P0496 - Evaporative Emission System Flow During Non-Purge	P04AB - Evaporative Emission Purge Solenoid Control Circuit Open Bank 2	P04AC - Evaporative Emission Purge Solenoid Control Circuit Low Bank 2	CONTINUED NEXT LINE
	P04AD - Evaporative Emission Purge Solenoid Control Circuit High Bank 2	P04AE - Evaporative Emission Purge Solenoid Performance Bank 2	P04DF - Evaporative Emission Purge Solenoid Performance Bank 1	P05CC - Cold Start Intake Camshaft Position System Performance Bank 1	P05CD - Cold Start Intake Camshaft Position System Performance Bank 2	P0641 - Sensor Reference Voltage 1 Circuit Open	P064D - Control Module Oxygen Sensor Bank 1 Sensor 1 System Performance	P064E - Control Module Oxygen Sensor Bank 2 Sensor 1 System Performance	P0651 - Sensor Reference Voltage 2 Circuit Open	P0697 - Sensor Reference Voltage 3 Circuit Open	P06A3 - Sensor Reference Voltage 4 Circuit Open	P2088 - Camshaft Position Actuator Control Circuit Low	P2089 - Camshaft Position Actuator Control Circuit High	P2090 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 1	P2091 - Exhaust Camshaft Position Actuator Control Circuit High Bank 1	P2092 - Intake Camshaft Position Actuator Control Circuit Low Bank 2	P2093 - Intake Camshaft Position Actuator Control Circuit High Bank 2	P2094 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 2	P2095 - Exhaust Camshaft Position Actuator Control Circuit High Bank 2	P2096 - Post Catalyst Fuel Trim System Low Limit Bank 1	P2097 - Post Catalyst Fuel Trim System High Limit Bank 1	P2098 - Post Catalyst Fuel Trim System Low Limit Bank 2	CONTINUED NEXT LINE
	P2099 - Post Catalyst Fuel Trim System High Limit Bank 2	P212B - Throttle Position Sensor 2 Performance Bank 2	P212C - Throttle Position Sensor 2 Circuit Low Bank 2	P212D - Throttle Position Sensor 2 Circuit High Bank 2	P2176 - Minimum Throttle Position Not Learned	P218A - Minimum Throttle Position Not Learned Bank 2	P2195 - Oxygen Sensor Signal Biased Lean Bank 1 Sensor 1	P2196 - Oxygen Sensor Signal Biased Rich Bank 1 Sensor 1	P2197 - Oxygen Sensor Signal Biased Lean Bank 2 Sensor 1	P2198 - Oxygen Sensor Signal Biased Rich Bank 2 Sensor 1	P2237 - Oxygen Sensor Pumping Current Control Circuit Open Bank 1 Sensor 1	P2240 - Oxygen Sensor Pumping Current Control Circuit Open Bank 2 Sensor 1	P2251 - Oxygen Sensor Low Reference Circuit Open Bank 1 Sensor 1	P2254 - Oxygen Sensor Low Reference Circuit Open Bank 2 Sensor 1	P2297 - Oxygen Sensor Out of Range During Deceleration Bank 1 Sensor 1	P2298 - Oxygen Sensor Out of Range During Deceleration Bank 2 Sensor 1	P2626 - Oxygen Sensor Pumping Current Trim Circuit Open Bank 1 Sensor 1	P2629 - Oxygen Sensor Pumping Current Trim Circuit Open Bank 2 Sensor 1	P30D8 - Control Module Processor Serial Peripheral Interface Bus 3	P30D9 - Control Module Processor Serial Peripheral Interface Bus 4	U0607 - Lost Communication With Throttle Position Sensor Bank 1 Sensor 2	U0688 - Lost Communication With Throttle Position Sensor Bank 2 Sensor 2	CONTINUED NEXT LINE
	U136D - Invalid Data Received From Throttle Position Sensor 2	U136F - Invalid Data Received From Throttle Position Sensor Bank 2 Sensor 2	END																				
P2E6A - Fuel Trim System Lean During Cylinder Deactivation Bank 2	P000A - Camshaft Position System Slow Response Bank 1	P000B - Exhaust Camshaft Position System Slow Response Bank 1	P000C - Intake Camshaft Position System Slow Response Bank 2	P000D - Exhaust Camshaft Position System Slow Response Bank 2	P0010 - Camshaft Position Actuator Control Circuit Open	P0011 - Camshaft Position System Performance	P0013 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 1	P0014 - Exhaust Camshaft Position System Performance Bank 1	P0016 - Crankshaft to Camshaft Correlation	P0017 - Crankshaft to Exhaust Camshaft Correlation Bank 1	P0018 - Crankshaft to Intake Camshaft Correlation Bank 2	P0019 - Crankshaft to Exhaust Camshaft Correlation Bank 2	P0020 - Intake Camshaft Position Actuator Control Circuit Open Bank 2	P0021 - Intake Camshaft Position System Performance Bank 2	P0023 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 2	P0024 - Exhaust Camshaft Position System Performance Bank 2	P0030 - Oxygen Sensor Heater Control Circuit Open Bank 1 Sensor 1	P0031 - Oxygen Sensor Heater Control Circuit Low Bank 1 Sensor 1	P0032 - Oxygen Sensor Heater Control Circuit High Bank 1 Sensor 1	P0050 - Oxygen Sensor Heater Control Circuit Open Bank 2 Sensor 1	P0051 - Oxygen Sensor Heater Control Circuit Low Bank 2 Sensor 1	P0052 - Oxygen Sensor Heater Control Circuit High Bank 2 Sensor 1	CONTINUED NEXT LINE
	P0096 - Intake Air Temperature Sensor 2 Performance	P0097 - Intake Air Temperature Sensor 2 Circuit Low	P0098 - Intake Air Temperature Sensor 2 Circuit High	P0099 - Intake Air Temperature Sensor 2 Circuit Erratic	P00A6 - Intake Air Temperature Sensor 2 Performance Bank 2	P00A7 - Intake Air Temperature Sensor 2 Circuit Low Bank 2	P00A8 - Intake Air Temperature Sensor 2 Circuit High Bank 2	P00A9 - Intake Air Temperature Sensor 2 Circuit Erratic Bank 2	P0121 - Throttle Position Sensor Performance	P0122 - Throttle Position Sensor Circuit Low	P0123 - Throttle Position Sensor Circuit High	P0130 - HO2S Circuit Bank 1 Sensor 1	P0131 - Oxygen Sensor Circuit Low Bank 1 Sensor 1	P0132 - Oxygen Sensor Circuit High Bank 1 Sensor 1	P0133 - Oxygen Sensor Slow Response Bank 1 Sensor 1	P0150 - HO2S Circuit Bank 2 Sensor 1	P0151 - Oxygen Sensor Circuit Low Bank 2 Sensor 1	P0152 - Oxygen Sensor Circuit High Bank 2 Sensor 1	P0153 - Oxygen Sensor Slow Response Bank 2 Sensor 1	P0221 - Throttle Position Sensor 2 Performance	P0222 - Throttle Position Sensor 2 Circuit Low	P0223 - Throttle Position Sensor 2 Circuit High	CONTINUED NEXT LINE
	P0226 - Throttle Position Sensor Performance Bank 2	P0227 - Throttle Position Sensor Circuit Low Bank 2	P0228 - Throttle Position Sensor Circuit High Bank 2	P0300 - Engine Misfire Detected	P0301 - Cylinder 1 Misfire Detected	P0302 - Cylinder 2 Misfire Detected	P0303 - Cylinder 3 Misfire Detected	P0304 - Cylinder 4 Misfire Detected	P0305 - Cylinder 5 Misfire Detected	P0306 - Cylinder 6 Misfire Detected	P0307 - Cylinder 7 Misfire Detected	P0308 - Cylinder 8 Misfire Detected	P0335 - Crankshaft Position Sensor Circuit	P0336 - Crankshaft Position Sensor Performance	P034A - Crankshaft Position Sensor Start Position Incorrect	P034B - Crankshaft Position Sensor Direction Incorrect	P0443 - Evaporative Emission Purge Solenoid Control Circuit Open	P0458 - Evaporative Emission Purge Solenoid Control Circuit Low	P0459 - Evaporative Emission Purge Solenoid Control Circuit High	P0496 - Evaporative Emission System Flow During Non-Purge	P04AB - Evaporative Emission Purge Solenoid Control Circuit Open Bank 2	P04AC - Evaporative Emission Purge Solenoid Control Circuit Low Bank 2	CONTINUED NEXT LINE
	P04AD - Evaporative Emission Purge Solenoid Control Circuit High Bank 2	P04AE - Evaporative Emission Purge Solenoid Performance Bank 2	P04DF - Evaporative Emission Purge Solenoid Performance Bank 1	P05CC - Cold Start Intake Camshaft Position System Performance Bank 1	P05CD - Cold Start Intake Camshaft Position System Performance Bank 2	P0641 - Sensor Reference Voltage 1 Circuit Open	P064D - Control Module Oxygen Sensor Bank 1 Sensor 1 System Performance	P064E - Control Module Oxygen Sensor Bank 2 Sensor 1 System Performance	P0651 - Sensor Reference Voltage 2 Circuit Open	P0697 - Sensor Reference Voltage 3 Circuit Open	P06A3 - Sensor Reference Voltage 4 Circuit Open	P2088 - Camshaft Position Actuator Control Circuit Low	P2089 - Camshaft Position Actuator Control Circuit High	P2090 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 1	P2091 - Exhaust Camshaft Position Actuator Control Circuit High Bank 1	P2092 - Intake Camshaft Position Actuator Control Circuit Low Bank 2	P2093 - Intake Camshaft Position Actuator Control Circuit High Bank 2	P2094 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 2	P2095 - Exhaust Camshaft Position Actuator Control Circuit High Bank 2	P2096 - Post Catalyst Fuel Trim System Low Limit Bank 1	P2097 - Post Catalyst Fuel Trim System High Limit Bank 1	P2098 - Post Catalyst Fuel Trim System Low Limit Bank 2	CONTINUED NEXT LINE
	P2099 - Post Catalyst Fuel Trim System High Limit Bank 2	P212B - Throttle Position Sensor 2 Performance Bank 2	P212C - Throttle Position Sensor 2 Circuit Low Bank 2	P212D - Throttle Position Sensor 2 Circuit High Bank 2	P2176 - Minimum Throttle Position Not Learned	P218A - Minimum Throttle Position Not Learned Bank 2	P2195 - Oxygen Sensor Signal Biased Lean Bank 1 Sensor 1	P2196 - Oxygen Sensor Signal Biased Rich Bank 1 Sensor 1	P2197 - Oxygen Sensor Signal Biased Lean Bank 2 Sensor 1	P2198 - Oxygen Sensor Signal Biased Rich Bank 2 Sensor 1	P2237 - Oxygen Sensor Pumping Current Control Circuit Open Bank 1 Sensor 1	P2240 - Oxygen Sensor Pumping Current Control Circuit Open Bank 2 Sensor 1	P2251 - Oxygen Sensor Low Reference Circuit Open Bank 1 Sensor 1	P2254 - Oxygen Sensor Low Reference Circuit Open Bank 2 Sensor 1	P2297 - Oxygen Sensor Out of Range During Deceleration Bank 1 Sensor 1	P2298 - Oxygen Sensor Out of Range During Deceleration Bank 2 Sensor 1	P2626 - Oxygen Sensor Pumping Current Trim Circuit Open Bank 1 Sensor 1	P2629 - Oxygen Sensor Pumping Current Trim Circuit Open Bank 2 Sensor 1	P30D8 - Control Module Processor Serial Peripheral Interface Bus 3	P30D9 - Control Module Processor Serial Peripheral Interface Bus 4	U0607 - Lost Communication With Throttle Position Sensor Bank 1 Sensor 2	U0688 - Lost Communication With Throttle Position Sensor Bank 2 Sensor 2	CONTINUED NEXT LINE
	U136D - Invalid Data Received From Throttle Position Sensor 2	U136F - Invalid Data Received From Throttle Position Sensor Bank 2 Sensor 2	END																				
P2E6B - Fuel Trim System Rich During Cylinder Deactivation Bank 2	P000A - Camshaft Position System Slow Response Bank 1	P000B - Exhaust Camshaft Position System Slow Response Bank 1	P000C - Intake Camshaft Position System Slow Response Bank 2	P000D - Exhaust Camshaft Position System Slow Response Bank 2	P0010 - Camshaft Position Actuator Control Circuit Open	P0011 - Camshaft Position System Performance	P0013 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 1	P0014 - Exhaust Camshaft Position System Performance Bank 1	P0016 - Crankshaft to Camshaft Correlation	P0017 - Crankshaft to Exhaust Camshaft Correlation Bank 1	P0018 - Crankshaft to Intake Camshaft Correlation Bank 2	P0019 - Crankshaft to Exhaust Camshaft Correlation Bank 2	P0020 - Intake Camshaft Position Actuator Control Circuit Open Bank 2	P0021 - Intake Camshaft Position System Performance Bank 2	P0023 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 2	P0024 - Exhaust Camshaft Position System Performance Bank 2	P0030 - Oxygen Sensor Heater Control Circuit Open Bank 1 Sensor 1	P0031 - Oxygen Sensor Heater Control Circuit Low Bank 1 Sensor 1	P0032 - Oxygen Sensor Heater Control Circuit High Bank 1 Sensor 1	P0050 - Oxygen Sensor Heater Control Circuit Open Bank 2 Sensor 1	P0051 - Oxygen Sensor Heater Control Circuit Low Bank 2 Sensor 1	P0052 - Oxygen Sensor Heater Control Circuit High Bank 2 Sensor 1	CONTINUED NEXT LINE
	P0096 - Intake Air Temperature Sensor 2 Performance	P0097 - Intake Air Temperature Sensor 2 Circuit Low	P0098 - Intake Air Temperature Sensor 2 Circuit High	P0099 - Intake Air Temperature Sensor 2 Circuit Erratic	P00A6 - Intake Air Temperature Sensor 2 Performance Bank 2	P00A7 - Intake Air Temperature Sensor 2 Circuit Low Bank 2	P00A8 - Intake Air Temperature Sensor 2 Circuit High Bank 2	P00A9 - Intake Air Temperature Sensor 2 Circuit Erratic Bank 2	P0121 - Throttle Position Sensor Performance	P0122 - Throttle Position Sensor Circuit Low	P0123 - Throttle Position Sensor Circuit High	P0130 - HO2S Circuit Bank 1 Sensor 1	P0131 - Oxygen Sensor Circuit Low Bank 1 Sensor 1	P0132 - Oxygen Sensor Circuit High Bank 1 Sensor 1	P0133 - Oxygen Sensor Slow Response Bank 1 Sensor 1	P0150 - HO2S Circuit Bank 2 Sensor 1	P0151 - Oxygen Sensor Circuit Low Bank 2 Sensor 1	P0152 - Oxygen Sensor Circuit High Bank 2 Sensor 1	P0153 - Oxygen Sensor Slow Response Bank 2 Sensor 1	P0221 - Throttle Position Sensor 2 Performance	P0222 - Throttle Position Sensor 2 Circuit Low	P0223 - Throttle Position Sensor 2 Circuit High	CONTINUED NEXT LINE
	P0226 - Throttle Position Sensor Performance Bank 2	P0227 - Throttle Position Sensor Circuit Low Bank 2	P0228 - Throttle Position Sensor Circuit High Bank 2	P0300 - Engine Misfire Detected	P0301 - Cylinder 1 Misfire Detected	P0302 - Cylinder 2 Misfire Detected	P0303 - Cylinder 3 Misfire Detected	P0304 - Cylinder 4 Misfire Detected	P0305 - Cylinder 5 Misfire Detected	P0306 - Cylinder 6 Misfire Detected	P0307 - Cylinder 7 Misfire Detected	P0308 - Cylinder 8 Misfire Detected	P0335 - Crankshaft Position Sensor Circuit	P0336 - Crankshaft Position Sensor Performance	P034A - Crankshaft Position Sensor Start Position Incorrect	P034B - Crankshaft Position Sensor Direction Incorrect	P0443 - Evaporative Emission Purge Solenoid Control Circuit Open	P0458 - Evaporative Emission Purge Solenoid Control Circuit Low	P0459 - Evaporative Emission Purge Solenoid Control Circuit High	P0496 - Evaporative Emission System Flow During Non-Purge	P04AB - Evaporative Emission Purge Solenoid Control Circuit Open Bank 2	P04AC - Evaporative Emission Purge Solenoid Control Circuit Low Bank 2	CONTINUED NEXT LINE
	P04AD - Evaporative Emission Purge Solenoid Control Circuit High Bank 2	P04AE - Evaporative Emission Purge Solenoid Performance Bank 2	P04DF - Evaporative Emission Purge Solenoid Performance Bank 1	P05CC - Cold Start Intake Camshaft Position System Performance Bank 1	P05CD - Cold Start Intake Camshaft Position System Performance Bank 2	P0641 - Sensor Reference Voltage 1 Circuit Open	P064D - Control Module Oxygen Sensor Bank 1 Sensor 1 System Performance	P064E - Control Module Oxygen Sensor Bank 2 Sensor 1 System Performance	P0651 - Sensor Reference Voltage 2 Circuit Open	P0697 - Sensor Reference Voltage 3 Circuit Open	P06A3 - Sensor Reference Voltage 4 Circuit Open	P2088 - Camshaft Position Actuator Control Circuit Low	P2089 - Camshaft Position Actuator Control Circuit High	P2090 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 1	P2091 - Exhaust Camshaft Position Actuator Control Circuit High Bank 1	P2092 - Intake Camshaft Position Actuator Control Circuit Low Bank 2	P2093 - Intake Camshaft Position Actuator Control Circuit High Bank 2	P2094 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 2	P2095 - Exhaust Camshaft Position Actuator Control Circuit High Bank 2	P2096 - Post Catalyst Fuel Trim System Low Limit Bank 1	P2097 - Post Catalyst Fuel Trim System High Limit Bank 1	P2098 - Post Catalyst Fuel Trim System Low Limit Bank 2	CONTINUED NEXT LINE
	P2099 - Post Catalyst Fuel Trim System High Limit Bank 2	P212B - Throttle Position Sensor 2 Performance Bank 2	P212C - Throttle Position Sensor 2 Circuit Low Bank 2	P212D - Throttle Position Sensor 2 Circuit High Bank 2	P2176 - Minimum Throttle Position Not Learned	P218A - Minimum Throttle Position Not Learned Bank 2	P2195 - Oxygen Sensor Signal Biased Lean Bank 1 Sensor 1	P2196 - Oxygen Sensor Signal Biased Rich Bank 1 Sensor 1	P2197 - Oxygen Sensor Signal Biased Lean Bank 2 Sensor 1	P2198 - Oxygen Sensor Signal Biased Rich Bank 2 Sensor 1	P2237 - Oxygen Sensor Pumping Current Control Circuit Open Bank 1 Sensor 1	P2240 - Oxygen Sensor Pumping Current Control Circuit Open Bank 2 Sensor 1	P2251 - Oxygen Sensor Low Reference Circuit Open Bank 1 Sensor 1	P2254 - Oxygen Sensor Low Reference Circuit Open Bank 2 Sensor 1	P2297 - Oxygen Sensor Out of Range During Deceleration Bank 1 Sensor 1	P2298 - Oxygen Sensor Out of Range During Deceleration Bank 2 Sensor 1	P2626 - Oxygen Sensor Pumping Current Trim Circuit Open Bank 1 Sensor 1	P2629 - Oxygen Sensor Pumping Current Trim Circuit Open Bank 2 Sensor 1	P30D8 - Control Module Processor Serial Peripheral Interface Bus 3	P30D9 - Control Module Processor Serial Peripheral Interface Bus 4	U0607 - Lost Communication With Throttle Position Sensor Bank 1 Sensor 2	U0688 - Lost Communication With Throttle Position Sensor Bank 2 Sensor 2	CONTINUED NEXT LINE
	U136D - Invalid Data Received From Throttle Position Sensor 2	U136F - Invalid Data Received From Throttle Position Sensor Bank 2 Sensor 2	END																				
P3051 - DC/DC Converter Output Voltage Sensing Circuit 1 Low	END																						
P3052 - DC/DC Converter Output Voltage Sensing Circuit 2 Low	END																						
P3053 - DC/DC Converter Output Voltage Sensing Circuit 1 High	END																						
P3054 - DC/DC Converter Output Voltage Sensing Circuit 2 High	END																						
P3055 - DC/DC Converter Output Voltage 1 Performance	END																						
P3056 - DC/DC Converter Output Voltage 2 Performance	END																						
P305B - DC/DC Converter Ignition Switch Run/Start Position Circuit High	END																						
P305C - DC/DC Converter Ignition Switch Run/Start Position Circuit Low	END																						
P305D - DC/DC Converter Crank Input Signal Circuit High Voltage	END																						
P305E - DC/DC Converter Crank Input Signal Circuit Low Voltage	END																						
P30D6 - Control Module Processor Serial Peripheral Interface Bus 1	END																						
P30D7 - Control Module Processor Serial Peripheral Interface Bus 2	END																						
P30D8 - Control Module Processor Serial Peripheral Interface Bus 3	P064D - Control Module Oxygen Sensor Bank 1 Sensor 1 System Performance	END																					
P30D9 - Control Module Processor Serial Peripheral Interface Bus 4	P064E - Control Module Oxygen Sensor Bank 2 Sensor 1 System Performance	END																					
P30E3 - Closed Throttle Position Exceeded Maximum Learning Limit	P0121 - Throttle Position Sensor Performance	P0122 - Throttle Position Sensor Circuit Low	P0123 - Throttle Position Sensor Circuit High	P0221 - Throttle Position Sensor 2 Performance	P0222 - Throttle Position Sensor 2 Circuit Low	P0223 - Throttle Position Sensor 2 Circuit High	P0638 - Throttle Actuator Control Command Performance	P2100 - Throttle Actuator Control Motor Control Circuit Open	P2101 - Throttle Actuator Position Performance	P30D6 - Control Module Processor Serial Peripheral Interface Bus 1	END												
P30E4 - Closed Throttle Position Exceeded Minimum Learning Limit	P0121 - Throttle Position Sensor Performance	P0122 - Throttle Position Sensor Circuit Low	P0123 - Throttle Position Sensor Circuit High	P0221 - Throttle Position Sensor 2 Performance	P0222 - Throttle Position Sensor 2 Circuit Low	P0223 - Throttle Position Sensor 2 Circuit High	P0638 - Throttle Actuator Control Command Performance	P2100 - Throttle Actuator Control Motor Control Circuit Open	P2101 - Throttle Actuator Position Performance	P30D6 - Control Module Processor Serial Peripheral Interface Bus 1	END												
P30E5 - Closed Throttle Position Exceeded Maximum Learning Limit Bank 2	P0226 - Throttle Position Sensor Performance Bank 2	P0227 - Throttle Position Sensor Circuit Low Bank 2	P0228 - Throttle Position Sensor Circuit High Bank 2	P0639 - Throttle Actuator Control Command Performance Bank 2	P210A - Throttle Actuator Control Motor Control Circuit Open Bank 2	P210B - Throttle Actuator Position Performance Bank 2	P212B - Throttle Position Sensor 2 Performance Bank 2	P212C - Throttle Position Sensor 2 Circuit Low Bank 2	P212D - Throttle Position Sensor 2 Circuit High Bank 2	P30D7 - Control Module Processor Serial Peripheral Interface Bus 2	END												
P30E6 - Closed Throttle Position Exceeded Minimum Learning Limit Bank 2	P0226 - Throttle Position Sensor Performance Bank 2	P0227 - Throttle Position Sensor Circuit Low Bank 2	P0228 - Throttle Position Sensor Circuit High Bank 2	P0639 - Throttle Actuator Control Command Performance Bank 2	P210A - Throttle Actuator Control Motor Control Circuit Open Bank 2	P210B - Throttle Actuator Position Performance Bank 2	P212B - Throttle Position Sensor 2 Performance Bank 2	P212C - Throttle Position Sensor 2 Circuit Low Bank 2	P212D - Throttle Position Sensor 2 Circuit High Bank 2	P30D7 - Control Module Processor Serial Peripheral Interface Bus 2	END												
P30E7 - Throttle Rest Position Not Reached During Learn Bank 2	P0226 - Throttle Position Sensor Performance Bank 2	P0227 - Throttle Position Sensor Circuit Low Bank 2	P0228 - Throttle Position Sensor Circuit High Bank 2	P0639 - Throttle Actuator Control Command Performance Bank 2	P210A - Throttle Actuator Control Motor Control Circuit Open Bank 2	P210B - Throttle Actuator Position Performance Bank 2	P212B - Throttle Position Sensor 2 Performance Bank 2	P212C - Throttle Position Sensor 2 Circuit Low Bank 2	P212D - Throttle Position Sensor 2 Circuit High Bank 2	P30D7 - Control Module Processor Serial Peripheral Interface Bus 2	END												
P30E8 - Turbocharger A Wastegate Control Circuit 2 Low	END																						
P30E9 - Turbocharger A Wastegate Control Circuit 2 High	END																						
P30EA - Turbocharger B Wastegate Control Circuit 2 Low	END																						
P30EB - Turbocharger B Wastegate Control Circuit 2 High	END																						
P3138 - Fuel Pressure Regulator High Control Circuit Low Bank 2	END																						
P3139 - Fuel Pressure Regulator High Control Circuit High Bank 2	END																						
P313A - Fuel Pressure Regulator High Control Circuit Shorted to Control Circuit Bank 2	END																						
P318A - Cylinder 2 Reactivation Performance - Trapped High Pressure Exhaust Charge	END																						
P318B - Cylinder 3 Reactivation Performance - Trapped High Pressure Exhaust Charge	END																						
P318D - Cylinder 5 Reactivation Performance - Trapped High Pressure Exhaust Charge	END																						
P3190 - Cylinder 8 Reactivation Performance - Trapped High Pressure Exhaust Charge	END																						

The DTCs in this column is inhibited by the DTCs listed to the right	The DTCs in these columns inhibit the DTC to the left			The DTCs in these columns inhibit the DTC to the left	The DTCs in these columns inhibit the DTC to the left	The DTCs in these columns inhibit the DTC to the left
Inhibited DTC	Fault Active DTCs			Fault Active DTCs	Fault Active DTCs	Fault Active DTCs
P3196 - Low Temperature Loop Coolant Pump Speed Performance	END					
P3198 - Low Temperature Loop Coolant Pump Motor Current Out Of Range High	END					
P3199 - Low Temperature Loop Coolant Pump Motor Current Out Of Range Low	END					
P3409 - Cylinder 2 Deactivation Solenoid Control Circuit Open	END					
P3411 - Cylinder 2 Deactivation Solenoid Control Circuit Low	END					
P3412 - Cylinder 2 Deactivation Solenoid Control Circuit High	END					
P3417 - Cylinder 3 Deactivation Solenoid Control Circuit Open	END					
P3419 - Cylinder 3 Deactivation Solenoid Control Circuit Low	END					
P3420 - Cylinder 3 Deactivation Solenoid Control Circuit High	END					
P3433 - Cylinder 5 Deactivation Solenoid Control Circuit Open	END					
P3435 - Cylinder 5 Deactivation Solenoid Control Circuit Low	END					
P3436 - Cylinder 5 Deactivation Solenoid Control Circuit High	END					
P3457 - Cylinder 8 Deactivation Solenoid Control Circuit Open	END					
P3459 - Cylinder 8 Deactivation Solenoid Control Circuit Low	END					
P3460 - Cylinder 8 Deactivation Solenoid Control Circuit High	END					
P3499 - Cylinder 2 Deactivation Performance	END					
P349A - Cylinder 3 Deactivation Performance	END					
P349C - Cylinder 5 Deactivation Performance	END					
P349F - Cylinder 8 Deactivation Performance	END					
U0073 - Control Module Communication High Speed CAN Bus Off	END					
U0074 - Control Module Communication Powertrain Expansion CAN Bus Off	END					
U0076 - Control Module Communication Powertrain Sensor CAN Bus Off	END					
U0101 - Lost Communication With Transmission Control Module	END					
U0102 - Lost Communication with Transfer Case Control Module	END					
U0104 - Lost Communication With Adaptive Cruise Control Module	END					
U0129 - Lost Communication With Brake System Control Module	END					
U0140 - Lost Communication With Body Control Module	END					
U0146 - Lost Communication With Gateway	END					
U01B0 - Lost Communication With Battery Sensor Module	END					
U023A - Lost Communication with Active Safety Control Module 1	END					
U0402 - Invalid Data Received From Transmission Control Module	END					
U0403 - Invalid Data Received From Transfer Case Control Module	END					
U0404 - Invalid Data Received From Transmission Range Selector Control Module	END					
U0405 - Invalid Data Received From Cruise Control Module	END					
U0418 - Invalid Data Received From Brake System Control Module	END					
U0422 - Invalid Data Received From Body Control Module	END					
U0447 - Invalid Data Received From Serial Data Gateway Module	END					
U0499 - Invalid Data Received From Telematics Communication Interface Control Module	END					
U04B1 - Invalid Data Received From Battery Sensor Module	END					
U053B - Invalid Data Received From Active Safety Control Module 1	END					
U0599 - Invalid Data Received From DC/DC Converter Control Module	END					
U0606 - Lost Communication With Throttle Position Sensor Bank 1 Sensor 1	END					
U0607 - Lost Communication With Throttle Position Sensor Bank 1 Sensor 2	P0641 - Sensor Reference Voltage 1 Circuit Open	P06A3 - Sensor Reference Voltage 4 Circuit Open	END			
U0608 - Lost Communication With Throttle Position Sensor Bank 2 Sensor 1	END					
U0611 - Lost Communication With Intake Air Temperature Sensor Bank 1 Sensor 1	END					
U0612 - Lost Communication With Intake Air Temperature Sensor Bank 2 Sensor 1	END					
U0625 - Lost Communication With Fuel Rail Pressure Sensor Bank 1 Sensor 1	END					
U062F - Loss Of Communication with Low Temperature Loop Coolant Pump	END					

19 OBDG07 ECM DTC Inhibit Tables

The DTCs in this column is inhibited by the DTCs listed to the right	The DTCs in these columns inhibit the DTC to the left			The DTCs in these columns inhibit the DTC to the left	The DTCs in these columns inhibit the DTC to the left	The DTCs in these columns inhibit the DTC to the left
Inhibited DTC	Fault Active DTCs			Fault Active DTCs	Fault Active DTCs	Fault Active DTCs
U0644 - Lost Communication With Turbocharger A Wastegate Position Sensor	END					
U0674 - Lost Communication With Turbocharger B Wastegate Position Sensor	END					
U0680 - Lost Communication With Barometric Pressure Sensor Bank 2 Sensor 1	END					
U0688 - Lost Communication With Throttle Position Sensor Bank 2 Sensor 2	P0697 - Sensor Reference Voltage 3 Circuit Open	END				
U068A - Lost Communication With Barometric Pressure Sensor Bank 1 Sensor 2	END					
U101B - Lost Communication With Fuel Rail Pressure Sensor Bank 1 Sensor 2	P0651 - Sensor Reference Voltage 2 Circuit Open	END				
U131D - Invalid Data Received From Fuel Pump Driver Control Module	END					
U1345 - Engine Control Module LIN Bus 1	END					
U1346 - Engine Control Module LIN Bus 2	END					
U1348 - Engine Control Module LIN Bus 4	END					
U1349 - Engine Control Module LIN Bus 5	END					
U135E - Lost Communication with Transmission Control Module on Engine Control Module LIN Bus 1	END					
U136C - Invalid Data Received From Throttle Position Sensor 1	END					
U136D - Invalid Data Received From Throttle Position Sensor 2	P0641 - Sensor Reference Voltage 1 Circuit Open	P06A3 - Sensor Reference Voltage 4 Circuit Open	END			
U136E - Invalid Data Received From Throttle Position Sensor Bank 2 Sensor 1	END					
U136F - Invalid Data Received From Throttle Position Sensor Bank 2 Sensor 2	P0697 - Sensor Reference Voltage 3 Circuit Open	END				
U1370 - Invalid Data Received From Intake Air Temperature Sensor 1	END					
U1371 - Invalid Data Received From Barometric Pressure Sensor 2	END					
U1372 - Invalid Data Received From Intake Air Temperature Sensor Bank 2 Sensor 1	END					
U1373 - Invalid Data Received From Barometric Pressure Sensor Bank 2 Sensor 1	P0651 - Sensor Reference Voltage 2 Circuit Open	END				
U1374 - Invalid Data Received From Fuel Rail Pressure Sensor 1	END					
U1375 - Invalid Data Received From Fuel Rail Pressure Sensor 2	P0651 - Sensor Reference Voltage 2 Circuit Open	END				
U1376 - Invalid Data Received From Turbocharger Wastegate Position Sensor Bank 1	END					
U1377 - Invalid Data Received From Turbocharger Wastegate Position Sensor Bank 2	END					
U1378 - Invalid Data Received From Low Temperature Coolant Loop Pump	END					
U18A2 - Lost Communication With Fuel Pump Driver Control Module	END					
U18A7 - Lost Communication with DC/DC Converter Control Module on Powertrain Expansion CAN Bus	END					
U18C6 - Transmission Range Selector Control Module Lost Communication With ECM on Powertrain Sensor CAN Bus	END					
U18C7 - Transmission Range Selector Control Module Lost Communication With ECM on Powertrain Expansion CAN Bus	END					
U18D2 - Lost Communication with Transmission Range Selector Control Module on Powertrain Sensor CAN Bus	END					
U18D3 - Lost Communication with Transmission Range Selector Control Module on Powertrain Expansion CAN Bus	END					
U18D5 - Central Gateway Module Lost Communication with Engine Control Module	END					
U18D7 - Central Gateway Module Lost Communication with Transmission Control Module	END					
U18DC - Central Gateway Module Lost Communication with Brake System Control Module 1	END					
U240D - Transmission Range Selector Control Module Powertrain Expansion CAN Bus Off	END					
U240E - Transmission Range Selector Control Module Sensor CAN Bus Off	END					
U2413 - Central Gateway Module High Speed CAN Bus Off	END					
U2414 - Central Gateway Module High Speed Extension CAN Bus Off	END					
U250D - Invalid Data Received From Transmission Control Module on LIN Bus	END					

19 OBDG07 ECM Additional Basic Enable Conditions

This document is intended to meet the requirements documented in section 1968.2 of Title 13,
California Code of Regulations entitled Modifications to Malfunction and Diagnosis System Requirements
for 2004 and Subsequent Model-Year Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles and Engines (OBD II),
paragraphs (i)(2.2) for a table detailing **supplemental** calibration parameter data.

Enable Matrix for Diagnostic System Manager

DTC	Additional Basic Enable Conditions			
B071F - Transmission Range Indicator	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
B2A00 - Door Open Switch Signal - Door Ajar Switch Signal Correlation	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
B2B0D - Central Gateway Module Ignition Switch Run/Start Position Circuit Low	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
B2B0E - Central Gateway Module Ignition Switch Run/Start Position Circuit High	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
B2B11 - Central Gateway Module System Voltage Low	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
B2B12 - Central Gateway Module Control Module Memory	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
B2B13 - Central Gateway Module Control Module Internal Performance	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P000A - Camshaft Position System Slow Response Bank 1	Battery saver mode not active	END		
P000B - Exhaust Camshaft Position System Slow Response Bank 1	Battery saver mode not active	END		
P000C - Intake Camshaft Position System Slow Response Bank 2	Battery saver mode not active	END		
P000D - Exhaust Camshaft Position System Slow Response Bank 2	Battery saver mode not active	END		
P0010 - Camshaft Position Actuator Control Circuit Open	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P0011 - Camshaft Position System Performance	Battery saver mode not active	END		
P0013 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 1	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P0014 - Exhaust Camshaft Position System Performance Bank 1	Battery saver mode not active	END		
P0016 - Crankshaft to Camshaft Correlation	Battery saver mode not active	END		
P0017 - Crankshaft to Exhaust Camshaft Correlation Bank 1	Battery saver mode not active	END		
P0018 - Crankshaft to Intake Camshaft Correlation Bank 2	Battery saver mode not active	END		
P0019 - Crankshaft to Exhaust Camshaft Correlation Bank 2	Battery saver mode not active	END		
P0020 - Intake Camshaft Position Actuator Control Circuit Open Bank 2	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P0021 - Intake Camshaft Position System Performance Bank 2	Battery saver mode not active	END		
P0023 - Exhaust Camshaft Position Actuator Control Circuit Open Bank 2	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P0024 - Exhaust Camshaft Position System Performance Bank 2	Battery saver mode not active	END		
P0030 - Oxygen Sensor Heater Control Circuit Open Bank 1 Sensor 1	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P0031 - Oxygen Sensor Heater Control Circuit Low Bank 1 Sensor 1	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P0032 - Oxygen Sensor Heater Control Circuit High Bank 1 Sensor 1	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P0033 - Boost Bypass Valve A Control Circuit Open	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P0034 - Boost Bypass Valve A Control Circuit Low	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P0035 - Boost Bypass Valve A Control Circuit High	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P0036 - Oxygen Sensor Heater Control Circuit Open Bank 1 Sensor 2	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P0037 - Oxygen Sensor Heater Control Circuit Low Bank 1 Sensor 2	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P0038 - Oxygen Sensor Heater Control Circuit High Bank 1 Sensor 2	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P0050 - Oxygen Sensor Heater Control Circuit Open Bank 2 Sensor 1	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P0051 - Oxygen Sensor Heater Control Circuit Low Bank 2 Sensor 1	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P0052 - Oxygen Sensor Heater Control Circuit High Bank 2 Sensor 1	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END

19 OBDG07 ECM Additional Basic Enable Conditions

DTC	Additional Basic Enable Conditions				
P0056 - Oxygen Sensor Heater Control Circuit Open Bank 2 Sensor 2	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P0057 - Oxygen Sensor Heater Control Circuit Low Bank 2 Sensor 2	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P0058 - Oxygen Sensor Heater Control Circuit High Bank 2 Sensor 2	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P0071 - Ambient Air Temperature Sensor Performance	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P0072 - Ambient Air Temperature Sensor Circuit Low	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P0073 - Ambient Air Temperature Sensor Circuit High	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P0074 - Ambient Air Temperature Sensor Circuit Intermittent	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	Engine is not in ready state (which is active when the ignition is on or following a stall of the engine)	END
P0089 - Fuel Pressure Regulator Performance	Battery saver mode not active	END			
P0090 - Fuel Pressure Regulator Control Circuit Open	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P0091 - Fuel Pressure Regulator Control Circuit Low	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P0092 - Fuel Pressure Regulator Control Circuit High	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P0096 - Intake Air Temperature Sensor 2 Performance	Battery saver mode not active	END			
P0097 - Intake Air Temperature Sensor 2 Circuit Low	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P0098 - Intake Air Temperature Sensor 2 Circuit High	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P0099 - Intake Air Temperature Sensor 2 Circuit Erratic	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	Engine is not in ready state (which is active when the ignition is on or following a stall of the engine)	END
P00A6 - Intake Air Temperature Sensor 2 Performance Bank 2	Battery saver mode not active	END			
P00A7 - Intake Air Temperature Sensor 2 Circuit Low Bank 2	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P00A8 - Intake Air Temperature Sensor 2 Circuit High Bank 2	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P00A9 - Intake Air Temperature Sensor 2 Circuit Erratic Bank 2	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	Engine is not in ready state (which is active when the ignition is on or following a stall of the engine)	END
P00AB - Intake Air Temperature Sensor 1 Performance Bank 2	Battery saver mode not active	END			
P00AC - Intake Air Temperature Sensor 1 Circuit Low Bank 2	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P00AD - Intake Air Temperature Sensor 1 Circuit High Bank 2	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P00AE - Intake Air Temperature Sensor 1 Circuit Erratic Bank 2	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	Engine is not in ready state (which is active when the ignition is on or following a stall of the engine)	END
P00C0 - Boost Bypass Valve B Control Circuit Open	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P00C1 - Boost Bypass Valve B Control Circuit Low	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P00C2 - Boost Bypass Valve B Control Circuit High	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P00C4 - Boost Bypass Valve B Stuck	Battery saver mode not active	END			
P00C9 - Fuel Pressure Regulator High Control Circuit Low	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P00CA - Fuel Pressure Regulator High Control Circuit High	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P0101 - Mass Air Flow Sensor Performance	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P0102 - Mass Air Flow Sensor Circuit Low	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P0103 - Mass Air Flow Sensor Circuit High	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P0106 - Manifold Absolute Pressure Sensor Performance	Battery saver mode not active	END			
P0107 - Manifold Absolute Pressure Sensor Circuit Low	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P0108 - Manifold Absolute Pressure Sensor Circuit High	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P010B - Mass Air Flow Sensor 2 Performance	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P010C - Mass Air Flow Sensor 2 Circuit Low	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	

DTC	Additional Basic Enable Conditions				
P010D - Mass Air Flow Sensor 2 Circuit High	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P0111 - Intake Air Temperature Sensor Performance	Battery saver mode not active	END			
P0112 - Intake Air Temperature Sensor Circuit Low	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P0113 - Intake Air Temperature Sensor Circuit High	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P0114 - Intake Air Temperature Sensor Circuit Erratic	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	Engine is not in ready state (which is active when the ignition is on or following a stall of the engine)	END
P0116 - Engine Coolant Temperature Sensor Performance	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P0117 - Engine Coolant Temperature Sensor Circuit Low	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P0118 - Engine Coolant Temperature Sensor Circuit High	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P0119 - Engine Coolant Temperature Sensor Circuit Erratic	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	Engine is not in ready state (which is active when the ignition is on or following a stall of the engine)	END
P0128 - Engine Coolant Temperature Below Thermostat Regulating Temperature	Battery saver mode not active	END			
P0130 - HO2S Circuit Bank 1 Sensor 1	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P0131 - Oxygen Sensor Circuit Low Bank 1 Sensor 1	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P0132 - Oxygen Sensor Circuit High Bank 1 Sensor 1	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P0133 - Oxygen Sensor Slow Response Bank 1 Sensor 1	Battery saver mode not active	END			
P0137 - Oxygen Sensor Circuit Low Bank 1 Sensor 2	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P0138 - Oxygen Sensor Circuit High Bank 1 Sensor 2	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P013A - Oxygen Sensor Slow Response - Rich to Lean Bank 1 Sensor 2	Battery voltage is equal to or above 10.9 V	Battery saver mode not active	END		
P013B - Oxygen Sensor Slow Response - Lean to Rich Bank 1 Sensor 2	Battery voltage is equal to or above 10.9 V	Battery saver mode not active	END		
P013C - Oxygen Sensor Slow Response - Rich to Lean Bank 2 Sensor 2	Battery voltage is equal to or above 10.9 V	Battery saver mode not active	END		
P013D - Oxygen Sensor Slow Response - Lean to Rich Bank 2 Sensor 2	Battery voltage is equal to or above 10.9 V	Battery saver mode not active	END		
P013E - Oxygen Sensor Delayed Response - Rich to Lean Bank 1 Sensor 2	Battery voltage is equal to or above 10.9 V	Battery saver mode not active	END		
P013F - Oxygen Sensor Delayed Response - Lean to Rich Bank 1 Sensor 2	Battery voltage is equal to or above 10.9 V	Battery saver mode not active	END		
P0140 - Oxygen Sensor Circuit Insufficient Activity Bank 1 Sensor 2	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P0141 - Oxygen Sensor Heater Performance Bank 1 Sensor 2	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P014A - Oxygen Sensor Delayed Response - Rich to Lean Bank 2 Sensor 2	Battery voltage is equal to or above 10.9 V	Battery saver mode not active	END		
P014B - Oxygen Sensor Delayed Response - Lean to Rich Bank 2 Sensor 2	Battery voltage is equal to or above 10.9 V	Battery saver mode not active	END		
P0150 - HO2S Circuit Bank 2 Sensor 1	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P0151 - Oxygen Sensor Circuit Low Bank 2 Sensor 1	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P0152 - Oxygen Sensor Circuit High Bank 2 Sensor 1	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P0153 - Oxygen Sensor Slow Response Bank 2 Sensor 1	Battery saver mode not active	END			
P0157 - Oxygen Sensor Circuit Low Bank 2 Sensor 2	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P0158 - Oxygen Sensor Circuit High Bank 2 Sensor 2	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P0160 - Oxygen Sensor Circuit Insufficient Activity Bank 2 Sensor 2	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P0161 - Oxygen Sensor Heater Performance Bank 2 Sensor 2	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P0171 - Fuel Trim System Lean Bank 1	Battery saver mode not active	END			
P0172 - Fuel Trim System Rich Bank 1	Battery saver mode not active	END			
P0174 - Fuel Trim System Lean Bank 2	Battery saver mode not active	END			

DTC	Additional Basic Enable Conditions				
P0175 - Fuel Trim System Rich Bank 2	Battery saver mode not active	END			
P018B - Fuel Pressure Sensor Performance	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P018C - Fuel Pressure Sensor Circuit Low	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P018D - Fuel Pressure Sensor Circuit High	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P0191 - Fuel Rail Pressure Sensor Performance	Battery saver mode not active	END			
P0196 - Engine Oil Temperature Sensor Performance	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P0197 - Engine Oil Temperature Sensor Circuit Low	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P0198 - Engine Oil Temperature Sensor Circuit High	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P0199 - Engine Oil Temperature Sensor Erratic	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	Engine is not in ready state (which is active when the ignition is on or following a stall of the engine)	END
P0201 - Fuel Injector 1 Control Circuit Open	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P0202 - Fuel Injector 2 Control Circuit Open	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P0203 - Fuel Injector 3 Control Circuit Open	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P0204 - Fuel Injector 4 Control Circuit Open	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P0205 - Fuel Injector 5 Control Circuit Open	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P0206 - Fuel Injector 6 Control Circuit Open	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P0207 - Fuel Injector 7 Control Circuit Open	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P0208 - Fuel Injector 8 Control Circuit Open	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P0234 - Boost System A Overboost Condition	Battery saver mode not active	END			
P0236 - Turbocharger Boost Sensor Performance	Battery saver mode not active	END			
P0237 - Turbocharger Boost Sensor Circuit Low	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P0238 - Turbocharger Boost Sensor Circuit High	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P0240 - Turbocharger Boost Sensor Performance Bank 2	Battery saver mode not active	END			
P0241 - Turbocharger Boost Sensor Circuit Low Bank 2	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P0242 - Turbocharger Boost Sensor Circuit High Bank 2	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P0243 - Turbocharger A Wastegate Control Circuit Open	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P0245 - Turbocharger A Wastegate Control Circuit Low	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P0246 - Turbocharger A Wastegate Control Circuit High	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P0247 - Turbocharger B Wastegate Control Circuit Open	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P0249 - Turbocharger B Wastegate Control Circuit Low	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P0250 - Turbocharger B Wastegate Control Circuit High	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P0299 - Boost System A Underboost Condition	Battery saver mode not active	END			
P029D - Fuel Injector 1 Leak	Battery saver mode not active	END			
P02A1 - Fuel Injector 2 Leak	Battery saver mode not active	END			
P02A5 - Fuel Injector 3 Leak	Battery saver mode not active	END			
P02A9 - Fuel Injector 4 Leak	Battery saver mode not active	END			
P02AD - Fuel Injector 5 Leak	Battery saver mode not active	END			
P02B1 - Fuel Injector 6 Leak	Battery saver mode not active	END			

DTC	Additional Basic Enable Conditions			
P02B5 - Fuel Injector 7 Leak	Battery saver mode not active	END		
P02B9 - Fuel Injector 8 Leak	Battery saver mode not active	END		
P02CA - Boost System B Overboost Condition	Battery saver mode not active	END		
P02CB - Boost System B Underboost Condition	Battery saver mode not active	END		
P02EE - Cylinder 1 Injector Control Performance	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P02EF - Cylinder 2 Injector Control Performance	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P02F0 - Cylinder 3 Injector Control Performance	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P02F1 - Cylinder 4 Injector Control Performance	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P02F2 - Cylinder 5 Injector Control Performance	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P02F3 - Cylinder 6 Injector Control Performance	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P02F4 - Cylinder 7 Injector Control Performance	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P02F5 - Cylinder 8 Injector Control Performance	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P0300 - Engine Misfire Detected	Battery saver mode not active	END		
P0301 - Cylinder 1 Misfire Detected	Battery saver mode not active	END		
P0302 - Cylinder 2 Misfire Detected	Battery saver mode not active	END		
P0303 - Cylinder 3 Misfire Detected	Battery saver mode not active	END		
P0304 - Cylinder 4 Misfire Detected	Battery saver mode not active	END		
P0305 - Cylinder 5 Misfire Detected	Battery saver mode not active	END		
P0306 - Cylinder 6 Misfire Detected	Battery saver mode not active	END		
P0307 - Cylinder 7 Misfire Detected	Battery saver mode not active	END		
P0308 - Cylinder 8 Misfire Detected	Battery saver mode not active	END		
P0315 - Crankshaft Position System Variation Not Learned	Battery saver mode not active	END		
P0325 - Knock Sensor Circuit Open	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P0326 - Knock Sensor Performance	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P0327 - Knock Sensor Circuit Low	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P0328 - Knock Sensor Circuit High	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P032A - Knock Sensor 3 Circuit Open	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P032B - Knock Sensor 3 Performance	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P032C - Knock Sensor 3 Circuit Low	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P032D - Knock Sensor 3 Circuit High	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P0330 - Knock Sensor 2 Circuit Open	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P0331 - Knock Sensor 2 Performance	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P0332 - Knock Sensor 2 Circuit Low	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P0333 - Knock Sensor 2 Circuit High	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P0335 - Crankshaft Position Sensor Circuit	Battery saver mode not active	END		
P0336 - Crankshaft Position Sensor Performance	Battery saver mode not active	END		
P033A - Knock Sensor 4 Circuit Open	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END

DTC	Additional Basic Enable Conditions			
P033B - Knock Sensor 4 Performance	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P033C - Knock Sensor 4 Circuit Low	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P033D - Knock Sensor 4 Circuit High	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P0341 - Camshaft Position Sensor Performance	Battery saver mode not active	END		
P0342 - Camshaft Position Sensor Circuit Low	Battery saver mode not active	END		
P0343 - Camshaft Position Sensor Circuit High	Battery saver mode not active	END		
P0346 - Intake Camshaft Position Sensor Performance Bank 2	Battery saver mode not active	END		
P0347 - Intake Camshaft Position Sensor Circuit Low Bank 2	Battery saver mode not active	END		
P0348 - Intake Camshaft Position Sensor Circuit High Bank 2	Battery saver mode not active	END		
P034A - Crankshaft Position Sensor Start Position Incorrect	Battery saver mode not active	END		
P034B - Crankshaft Position Sensor Direction Incorrect	Battery saver mode not active	END		
P0351 - Ignition Coil 1 Control Circuit Open	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P0352 - Ignition Coil 2 Control Circuit Open	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P0353 - Ignition Coil 3 Control Circuit Open	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P0354 - Ignition Coil 4 Control Circuit Open	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P0355 - Ignition Coil 5 Control Circuit Open	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P0356 - Ignition Coil 6 Control Circuit Open	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P0357 - Ignition Coil 7 Control Circuit Open	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P0358 - Ignition Coil 8 Control Circuit Open	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P0366 - Exhaust Camshaft Position Sensor Performance Bank 1	Battery saver mode not active	END		
P0367 - Exhaust Camshaft Position Sensor Circuit Low Bank 1	Battery saver mode not active	END		
P0368 - Exhaust Camshaft Position Sensor Circuit High Bank 1	Battery saver mode not active	END		
P0391 - Exhaust Camshaft Position Sensor Performance Bank 2	Battery saver mode not active	END		
P0392 - Exhaust Camshaft Position Sensor Circuit Low Bank 2	Battery saver mode not active	END		
P0393 - Exhaust Camshaft Position Sensor Circuit High Bank 2	Battery saver mode not active	END		
P0420 - Catalyst System Low Efficiency	Battery saver mode not active	END		
P0430 - Catalyst System Low Efficiency Bank 2	Battery saver mode not active	END		
P0442 - Evaporative Emission System Small Leak Detected	Battery saver mode not active	END		
P0443 - Evaporative Emission Purge Solenoid Control Circuit Open	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P0446 - Evaporative Emission Vent System Performance	Battery saver mode not active	END		
P0449 - Evaporative Emission Vent Solenoid Control Circuit Open	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P0451 - Fuel Tank Pressure Sensor Performance	Battery saver mode not active	END		
P0452 - Fuel Tank Pressure Sensor Circuit Low	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P0453 - Fuel Tank Pressure Sensor Circuit High	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P0454 - Fuel Tank Pressure Sensor Circuit Intermittent	Battery saver mode not active	END		
P0455 - Evaporative Emission System Large Leak Detected	Battery saver mode not active	END		
P0458 - Evaporative Emission Purge Solenoid Control Circuit Low	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END

DTC	Additional Basic Enable Conditions				
P0459 - Evaporative Emission Purge Solenoid Control Circuit High	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P0461 - Fuel Level Sensor Performance	Battery saver mode not active	END			
P0462 - Fuel Level Sensor Circuit Low	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	System Power Mode is run	END
P0463 - Fuel Level Sensor Circuit High	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	System Power Mode is run	END
P0480 - Cooling Fan Relay 1 Control Circuit Open	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P0496 - Evaporative Emission System Flow During Non-Purge	Battery saver mode not active	END			
P0497 - Evaporative Emission System No Flow During Purge	Battery saver mode not active	END			
P0498 - Evaporative Emission Vent Solenoid Control Circuit Low	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P0499 - Evaporative Emission Vent Solenoid Control Circuit High	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P04AB - Evaporative Emission Purge Solenoid Control Circuit Open Bank 2	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P04AC - Evaporative Emission Purge Solenoid Control Circuit Low Bank 2	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P04AD - Evaporative Emission Purge Solenoid Control Circuit High Bank 2	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P04AE - Evaporative Emission Purge Solenoid Performance Bank 2	Battery saver mode not active	END			
P04DB - Crankcase Ventilation System Disconnected	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P04DF - Evaporative Emission Purge Solenoid Performance Bank 1	Battery saver mode not active	END			
P0506 - Idle Speed Low	Battery saver mode not active	END			
P0507 - Idle Speed High	Battery saver mode not active	END			
P050A - Cold Start Idle Speed System	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END		
P050B - Cold Start Ignition Timing System	Battery voltage is equal to or above 10.9 V	Battery saver mode not active	END		
P0513 - Theft Deterrent Key Incorrect	Battery saver mode not active	END			
P051B - Crankcase Vapor Pressure Sensor Performance	Battery saver mode not active	END			
P051C - Crankcase Vapor Pressure Sensor Circuit Low	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P051D - Crankcase Vapor Pressure Sensor Circuit High	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P0521 - Engine Oil Pressure Sensor 1 Performance	Battery saver mode not active	END			
P0522 - Engine Oil Pressure Sensor 1 Circuit Low	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P0523 - Engine Oil Pressure Sensor 1 Circuit High	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P0524 - Engine Oil Pressure Too Low	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Engine is not in standby state (standby state occurs after ECM initialization or following after-run)	Battery saver mode not active	Engine is not in ready state (which is active when the ignition is on or following a stall of the engine)	END
P0532 - Air Conditioning Refrigerant Pressure Sensor Circuit Low	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P0533 - Air Conditioning Refrigerant Pressure Sensor Circuit High	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P053F - Cold Start Fuel Pressure Performance	Battery voltage is equal to or above 10.9 V	Battery saver mode not active	END		
P0562 - System Voltage Low	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END		
P0563 - System Voltage High	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END		
P0564 - Cruise Control Multi-Function Switch 1 Circuit	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	System Power Mode is run	END
P0565 - Cruise Control Switch Circuit	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	System Power Mode is run	END
P0567 - Cruise Control Resume Switch 1 Circuit	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	System Power Mode is run	END
P0568 - Cruise Control Set Switch 1 Circuit	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	System Power Mode is run	END
P056C - Cruise Control Cancel Switch Circuit	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	System Power Mode is run	END

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DTC	Additional Basic Enable Conditions				
P0572 - Brake Switch Circuit 1 Low	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P0573 - Brake Switch Circuit 1 High	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P057B - Brake Pedal Position Sensor Performance	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P057C - Brake Pedal Position Sensor Circuit Low	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P057D - Brake Pedal Position Sensor Circuit High	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P0580 - Cruise Control Multi-Function Switch 1 Circuit Low	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	System Power Mode is run	END
P0581 - Cruise Control Multi-Function Switch 1 Circuit High	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	System Power Mode is run	END
P0589 - Cruise Control Multi-Function Switch 2 Circuit	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	System Power Mode is run	END
P058A - Battery Sensor Module Performance	Battery saver mode not active	END			
P058B - Battery Sensor Module Current Sensor Performance	Battery saver mode not active	END			
P058C - Battery Sensor Module Temperature Sensor Performance	Battery saver mode not active	END			
P058D - Battery Sensor Module Voltage Sensing Performance	Battery saver mode not active	END			
P058E - Battery Sensor Module Temperature High	Battery saver mode not active	END			
P058F - Battery Sensor Module Temperature Low	Battery saver mode not active	END			
P0592 - Cruise Control Multi-Function Switch 2 Circuit Low	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	System Power Mode is run	END
P0593 - Cruise Control Multi-Function Switch 2 Circuit High	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	System Power Mode is run	END
P05CC - Cold Start Intake Camshaft Position System Performance Bank 1	Battery saver mode not active	END			
P05CD - Cold Start Intake Camshaft Position System Performance Bank 2	Battery saver mode not active	END			
P05D1 - Driver Mode Select Switch Circuit Low	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P05D2 - Driver Mode Select Switch Circuit High	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P05D3 - Driver Mode Select Switch Performance	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P0602 - Control Module Not Programmed	Battery saver mode not active	END			
P0603 - Control Module Long Term Memory Reset	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P0604 - Control Module Random Access Memory	Battery saver mode not active	END			
P0606 - Control Module Internal Performance	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P0615 - Starter Relay Control Circuit Open	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P0616 - Starter Relay Control Circuit Low	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P0617 - Starter Relay Control Circuit High	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P0621 - Generator L-Terminal Circuit Open	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P0625 - Generator F-Terminal Circuit Low	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P0626 - Generator F-Terminal Circuit High	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P0627 - Fuel Pump Relay Control Circuit Open	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P0628 - Fuel Pump Relay Control Circuit Low	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P0629 - Fuel Pump Relay Control Circuit High	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P062B - Control Module Fuel Injector Control Performance	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P0630 - VIN Not Programmed or Mismatched - Engine Control Module	Battery saver mode not active	END			
P0633 - Theft Deterrent Key Not Programmed	Battery saver mode not active	END			

DTC	Additional Basic Enable Conditions			
P0645 - Air Conditioning Clutch Relay Control Circuit Open	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P0646 - Air Conditioning Clutch Relay Control Circuit Low	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P0647 - Air Conditioning Clutch Relay Control Circuit High	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P064D - Control Module Oxygen Sensor Bank 1 Sensor 1 System Performance	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P064E - Control Module Oxygen Sensor Bank 2 Sensor 1 System Performance	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P0650 - Malfunction Indicator Lamp Control Circuit Open	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P0689 - Engine Controls Ignition Relay Feedback Circuit Low	Battery saver mode not active	END		
P0690 - Engine Controls Ignition Relay Feedback Circuit High	Battery saver mode not active	END		
P0691 - Cooling Fan Relay 1 Control Circuit Low	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P0692 - Cooling Fan Relay 1 Control Circuit High	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P06AF - Torque Management System - Forced Engine Shutdown	Battery saver mode not active	END		
P06B6 - Control Module Knock Sensor Processor 1 Performance	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P06D1 - Control Module Ignition Coil Internal Circuit	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P06DA - Engine Oil Pressure Control Circuit Open	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P06DB - Engine Oil Pressure Control Circuit Low	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P06DC - Engine Oil Pressure Control Circuit High	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P06DD - Engine Oil Pressure Control Performance	Battery saver mode not active	END		
P0700 - Transmission Control Module Requested Malfunction Indicator Lamp Illumination	Battery saver mode not active	END		
P073D - Unable to Engage Neutral	Battery saver mode not active	END		
P073E - Unable to Engage Reverse	Battery saver mode not active	END		
P07B3 - Transmission Range Selector Park Position Switch 1 Circuit Low	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P07B4 - Transmission Range Selector Park Position Switch 1 Circuit High	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P07B5 - Transmission Range Selector Park Position Switch 1 Performance	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P07B9 - Transmission Range Selector Park Position Switch 2 Circuit Low	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P07BA - Transmission Range Selector Park Position Switch 2 Circuit High	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P07BB - Transmission Range Selector Park Position Switch 2 Circuit Performance	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P07BE - Transmission Range Selector Park Position Switch 1/2 Correlation	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P07E4 - Unable to Engage Park	Battery saver mode not active	END		
P07E5 - Unable to Engage Drive	Battery saver mode not active	END		
P082A - Transmission Range Selector X-Axis Position Sensor 1 Performance	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P082B - Transmission Range Selector X-Axis Position Sensor 1 Circuit Low	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P082C - Transmission Range Selector X-Axis Position Sensor 1 Circuit High	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P082D - Transmission Range Selector Y-Axis Position Sensor 1 Performance	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P082E - Transmission Range Selector Y-Axis Position Sensor 1 Circuit Low	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P082F - Transmission Range Selector Y-Axis Position Sensor 1 Circuit High	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P089B - Transmission Range Selector X-Axis Position Sensor 2 Performance	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P089C - Transmission Range Selector X-Axis Position Sensor 2 Circuit Low	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END

DTC	Additional Basic Enable Conditions				
P089D - Transmission Range Selector X-Axis Position Sensor 2 Circuit High	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P08A0 - Transmission Range Selector Y-Axis Position Sensor 2 Performance	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P08A1 - Transmission Range Selector Y-Axis Position Sensor 2 Circuit Low	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P08A2 - Transmission Range Selector Y-Axis Position Sensor 2 Circuit High	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P1002 - Fuel Pump Driver Control Module System Voltage Performance	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	System Power Mode is run	END	
P1005 - Fuel Pump Driver Control Module Too Many Resets	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	System Power Mode is run	END
P1007 - Fuel Pump Driver Control Module Ignition On/Start Switch Circuit High	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	System Power Mode is run	END
P100C - Battery Sensor Module Temperature Erratic	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	Engine is not in ready state (which is active when the ignition is on or following a stall of the engine)	END
P100D - Battery Sensor Module Internal Temperature Circuit Erratic	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	Engine is not in ready state (which is active when the ignition is on or following a stall of the engine)	END
P1011 - Camshaft Position Actuator Park Position	Battery saver mode not active	END			
P1012 - Exhaust Camshaft Position Actuator Park Position Bank 1	Battery saver mode not active	END			
P1013 - Intake Camshaft Position Actuator Park Position Bank 2	Battery saver mode not active	END			
P1014 - Exhaust Camshaft Position Actuator Park Position Bank 2	Battery saver mode not active	END			
P1029 - Fuel Pump Phase U-V-W Circuits Open	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	System Power Mode is run	END
P102A - Fuel Pump Phase U-V-W Circuits Low	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	System Power Mode is run	END
P102B - Fuel Pump Phase U-V-W Circuits High	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	System Power Mode is run	END
P102C - Fuel Pump Phase U-V-W Circuits Shorted	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	System Power Mode is run	END
P1038 - Turbocharger A Wastegate Actuator Supply Voltage Circuit Low	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P103A - Turbocharger A Wastegate Control Circuit Shorted	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P10A3 - Cylinder 1 Injection Pulse Offset Exceeded Minimum Learning Limit	Battery saver mode not active	END			
P10A4 - Cylinder 1 Injection Pulse Offset Exceeded Maximum Learning Limit	Battery saver mode not active	END			
P10A5 - Cylinder 2 Injection Pulse Offset Exceeded Minimum Learning Limit	Battery saver mode not active	END			
P10A6 - Cylinder 2 Injection Pulse Offset Exceeded Maximum Learning Limit	Battery saver mode not active	END			
P10A7 - Cylinder 3 Injection Pulse Offset Exceeded Minimum Learning Limit	Battery saver mode not active	END			
P10A8 - Cylinder 3 Injection Pulse Offset Exceeded Maximum Learning Limit	Battery saver mode not active	END			
P10A9 - Cylinder 4 Injection Pulse Offset Exceeded Minimum Learning Limit	Battery saver mode not active	END			
P10AA - Cylinder 4 Injection Pulse Offset Exceeded Maximum Learning Limit	Battery saver mode not active	END			
P10AB - Cylinder 5 Injection Pulse Offset Exceeded Minimum Learning Limit	Battery saver mode not active	END			
P10AC - Cylinder 5 Injection Pulse Offset Exceeded Maximum Learning Limit	Battery saver mode not active	END			
P10AD - Cylinder 6 Injection Pulse Offset Exceeded Minimum Learning Limit	Battery saver mode not active	END			
P10AE - Cylinder 6 Injection Pulse Offset Exceeded Maximum Learning Limit	Battery saver mode not active	END			
P10AF - Cylinder 7 Injection Pulse Offset Exceeded Minimum Learning Limit	Battery saver mode not active	END			
P10B0 - Cylinder 7 Injection Pulse Offset Exceeded Maximum Learning Limit	Battery saver mode not active	END			
P10B1 - Cylinder 8 Injection Pulse Offset Exceeded Minimum Learning Limit	Battery saver mode not active	END			
P10B2 - Cylinder 8 Injection Pulse Offset Exceeded Maximum Learning Limit	Battery saver mode not active	END			
P10BD - Turbocharger B Wastegate Actuator Supply Voltage Circuit Low	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P10BE - Turbocharger B Wastegate Control Circuit Shorted	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	

DTC	Additional Basic Enable Conditions							
P10E8 - Fuel Pressure Regulator High Control Circuit Shorted to Control Circuit	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END				
P1176 - Fuel Pump Driver Control Module 5V Reference 1 Circuit	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END				
P1177 - Fuel Pump Driver Control Module 5V Reference 2 Circuit	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END				
P1178 - Fuel Pump Driver Control Module Fuel Level Sensor 1 Internal Supply Circuit	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END				
P1179 - Fuel Pump Driver Control Module Fuel Level Sensor 2 Internal Supply Circuit	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END				
P1248 - Fuel Injector 1 High Control Circuit Shorted to Control Circuit	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END				
P1249 - Fuel Injector 2 High Control Circuit Shorted to Control Circuit	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END				
P124A - Fuel Injector 3 High Control Circuit Shorted to Control Circuit	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END				
P124B - Fuel Injector 4 High Control Circuit Shorted to Control Circuit	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END				
P124C - Fuel Injector 5 High Control Circuit Shorted to Control Circuit	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END				
P124D - Fuel Injector 6 High Control Circuit Shorted to Control Circuit	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END				
P124E - Fuel Injector 7 High Control Circuit Shorted to Control Circuit	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END				
P124F - Fuel Injector 8 High Control Circuit Shorted to Control Circuit	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END				
P1255 - Fuel Pump Control Module Driver High Temperature	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	System Power Mode is run	END			
P128A - Fuel Rail Pressure Sensor Internal Performance Bank 1 Sensor 1	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END				
P128B - Fuel Rail Pressure Sensor Internal Performance Bank 1 Sensor 2	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END				
P129B - Fuel Pump Driver Control Module System Voltage Low	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	System Power Mode is run	END				
P129C - Fuel Pump Driver Control Module System Voltage High	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	System Power Mode is run	END				
P129D - Fuel Pump Driver Control Module Ignition On/Start Switch Circuit Low	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	System Power Mode is run	END			
P129F - Fuel Pump Driver Control Module Fuel Pump Speed Signal Incorrect	Battery voltage is equal to or above 10.9 V	Battery saver mode not active	System Power Mode is run	END				
P12A6 - Fuel Pump Driver Control Module Enable Circuit Performance	Battery saver mode not active	System Power Mode is run	END					
P135A - Ignition Coil Supply Voltage Circuit Bank 1	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END					
P135B - Ignition Coil Supply Voltage Circuit Bank 2	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END					
P138B - Brake Pedal Position Sensor "A" Exceeded Learning Limit	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END				
P1434 - Fuel Level Sensor 1 Reference Feedback Performance	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	System Power Mode is run	END			
P143E - Fuel Level Sensor 2 Reference Feedback Performance	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	System Power Mode is run	END			
P155A - Cruise Control Switch State Undetermined	Battery voltage is equal to or above 10.9 V	Engine not in afterrun mode (defined as engine stopped with ignition off)	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Engine is not in standby state (standby state occurs after ECM initialization or following after-run)	Battery saver mode not active	Engine not in stopping mode (defined as engine speed greater than 0 rpm with ignition off)	System Power Mode is run	END
P155B - Cruise Control Set Switch 2 Circuit	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	System Power Mode is run	END			
P155C - Cruise Control Resume Switch 2 Circuit	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	System Power Mode is run	END			
P1589 - Cruise Control Lane Center Switch Circuit	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	System Power Mode is run	END			
P1631 - Theft Deterrent Fuel Enable Signal Not Correct	Battery saver mode not active	END						
P1649 - Theft Deterrent Security Code Not Programmed	Battery saver mode not active	END						
P16D4 - Battery Sensor Module Voltage Sensing Circuit Low	Battery saver mode not active	END						
P16D5 - Battery Sensor Module Voltage Sensing Circuit High	Battery saver mode not active	END						
P16D6 - Battery Sensor Module Current Sensor Low	Battery saver mode not active	END						
P16D7 - Sensor Supply Voltage Relay Control Circuit Open	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END				
P16D8 - Sensor Supply Voltage Relay Control Circuit Low	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END				

DTC	Additional Basic Enable Conditions				
P16D9 - Sensor Supply Voltage Relay Control Circuit High	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P16DD - Battery Sensor Module Current Sensor High	Battery saver mode not active	END			
P16DE - Battery Sensor Module Internal Temperature Circuit Low	Battery saver mode not active	END			
P16DF - Battery Sensor Module Internal Temperature Circuit High	Battery saver mode not active	END			
P16E1 - Battery Sensor Module Random Access Memory	Battery saver mode not active	END			
P16E2 - Battery Sensor Module Read Only Memory	Battery saver mode not active	END			
P16E3 - Battery Sensor Module Calibration Incorrect	Battery saver mode not active	END			
P16F4 - Internal Control Module Transmission Range Control Performance	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P1787 - Unexpected Range Change Detected	Battery saver mode not active	END			
P1789 - Current Transmission Range Unknown	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P17A3 - Transmission Range Selector Shift Interlock Switch 1 Circuit Low	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P17A4 - Transmission Range Selector Shift Interlock Switch 1 Circuit High	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P17A5 - Transmission Range Selector Shift Interlock Switch 1 Performance	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P17A6 - Transmission Range Selector Shift Interlock Switch 1/2 Correlation	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P17A7 - Transmission Range Selector Shift Interlock Switch 2 Circuit Low	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P17A8 - Transmission Range Selector Shift Interlock Switch 2 Circuit High	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P17A9 - Transmission Range Selector Shift Interlock Switch 2 Performance	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P17D8 - Transmission Range Selector Control Module Memory Checksum Error	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P17D9 - Transmission Range Selector Control Module Read Only Memory (ROM) Error	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P17DA - Transmission Range Selector Control Module Internal Random Access Memory (RAM) Error	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P17DB - Transmission Range Selector Control Module Processor	Battery saver mode not active	END			
P17DC - Transmission Range Selector Control Module Keep Alive Memory (KAM) Performance	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P17DD - Transmission Range Selector Control Module System Voltage Low	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END		
P17DE - Transmission Range Selector Control Module System Voltage High	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END		
P17DF - Transmission Range Selector Control Module System Voltage Performance	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END		
P17E0 - Transmission Range Selector Control Module Ignition On/Start Switch Circuit Low	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P17E1 - Transmission Range Selector Control Module Ignition On/Start Switch Circuit High	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P17E2 - Transmission Range Selector Control Module Ignition Accessory Circuit Low	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P17F3 - Transmission Range Selector Park Position Switch 1/2 Stuck On	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P17F4 - Transmission Range Selector Shift Interlock Switch 1/2 Stuck On	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P189D - Transmission Range Selector Park Position Switch 1/2 Stuck Off	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P2066 - Fuel Level Sensor 2 Performance	Battery saver mode not active	END			
P2067 - Fuel Level Sensor 2 Circuit Low	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	System Power Mode is run	END
P2068 - Fuel Level Sensor 2 Circuit High	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	System Power Mode is run	END
P2088 - Camshaft Position Actuator Control Circuit Low	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P2089 - Camshaft Position Actuator Control Circuit High	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	
P2090 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 1	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END	

DTC	Additional Basic Enable Conditions			
P2091 - Exhaust Camshaft Position Actuator Control Circuit High Bank 1	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P2092 - Intake Camshaft Position Actuator Control Circuit Low Bank 2	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P2093 - Intake Camshaft Position Actuator Control Circuit High Bank 2	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P2094 - Exhaust Camshaft Position Actuator Control Circuit Low Bank 2	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P2095 - Exhaust Camshaft Position Actuator Control Circuit High Bank 2	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P2096 - Post Catalyst Fuel Trim System Low Limit Bank 1	Battery saver mode not active	END		
P2097 - Post Catalyst Fuel Trim System High Limit Bank 1	Battery saver mode not active	END		
P2098 - Post Catalyst Fuel Trim System Low Limit Bank 2	Battery saver mode not active	END		
P2099 - Post Catalyst Fuel Trim System High Limit Bank 2	Battery saver mode not active	END		
P2146 - Fuel Injector High Control Circuit 1 Open	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P2149 - Fuel Injector High Control Circuit 2 Open	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P2152 - Fuel Injector High Control Circuit 3 Open	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P2155 - Fuel Injector High Control Circuit 4 Open	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P216A - Fuel Injector High Control Circuit 5 Open	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P216D - Fuel Injector High Control Circuit 6 Open	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P2177 - Fuel Trim System Lean Off Idle Bank 1	Battery saver mode not active	END		
P2178 - Fuel Trim System Rich Off Idle Bank 1	Battery saver mode not active	END		
P2179 - Fuel Trim System Lean Off Idle Bank 2	Battery saver mode not active	END		
P217A - Fuel Injector High Control Circuit 7 Open	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P217D - Fuel Injector High Control Circuit 8 Open	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P2180 - Fuel Trim System Rich Off Idle Bank 2	Battery saver mode not active	END		
P2187 - Fuel Trim System Lean at Idle Bank 1	Battery saver mode not active	END		
P2188 - Fuel Trim System Rich at Idle Bank 1	Battery saver mode not active	END		
P2189 - Fuel Trim System Lean at Idle Bank 2	Battery saver mode not active	END		
P2190 - Fuel Trim System Rich at Idle Bank 2	Battery saver mode not active	END		
P2195 - Oxygen Sensor Signal Biased Lean Bank 1 Sensor 1	Battery saver mode not active	END		
P2196 - Oxygen Sensor Signal Biased Rich Bank 1 Sensor 1	Battery saver mode not active	END		
P2197 - Oxygen Sensor Signal Biased Lean Bank 2 Sensor 1	Battery saver mode not active	END		
P2198 - Oxygen Sensor Signal Biased Rich Bank 2 Sensor 1	Battery saver mode not active	END		
P219C - Cylinder 1 Fuel Trim Cylinder Balance	Battery saver mode not active	END		
P219D - Cylinder 2 Fuel Trim Cylinder Balance	Battery saver mode not active	END		
P219E - Cylinder 3 Fuel Trim Cylinder Balance	Battery saver mode not active	END		
P219F - Cylinder 4 Fuel Trim Cylinder Balance	Battery saver mode not active	END		
P21A0 - Cylinder 5 Fuel Trim Cylinder Balance	Battery saver mode not active	END		
P21A1 - Cylinder 6 Fuel Trim Cylinder Balance	Battery saver mode not active	END		
P21A2 - Cylinder 7 Fuel Trim Cylinder Balance	Battery saver mode not active	END		
P21A3 - Cylinder 8 Fuel Trim Cylinder Balance	Battery saver mode not active	END		

DTC	Additional Basic Enable Conditions			
P2227 - Barometric Pressure Sensor Performance Bank 1 Sensor 1	Battery saver mode not active	END		
P2228 - Barometric Pressure Sensor Circuit Low Bank 1 Sensor 1	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P2229 - Barometric Pressure Sensor Circuit High Bank 1 Sensor 1	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P222B - Barometric Pressure Sensor Performance Bank 2 Sensor 1	Battery saver mode not active	END		
P222C - Barometric Pressure Sensor Circuit Low Bank 2 Sensor 1	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P222D - Barometric Pressure Sensor Circuit High Bank 2 Sensor 1	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P2232 - Oxygen Sensor Signal Circuit Shorted to Heater Circuit Bank 1 Sensor 2	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P2235 - Oxygen Sensor Signal Circuit Shorted to Heater Circuit Bank 2 Sensor 2	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P2237 - Oxygen Sensor Pumping Current Control Circuit Open Bank 1 Sensor 1	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P2240 - Oxygen Sensor Pumping Current Control Circuit Open Bank 2 Sensor 1	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P2251 - Oxygen Sensor Low Reference Circuit Open Bank 1 Sensor 1	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P2254 - Oxygen Sensor Low Reference Circuit Open Bank 2 Sensor 1	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P2261 - Boost Bypass Valve A Stuck	Battery saver mode not active	END		
P2270 - Oxygen Sensor Signal Stuck Lean Bank 1 Sensor 2	Battery voltage is equal to or above 10.9 V	Battery saver mode not active	END	
P2271 - Oxygen Sensor Signal Stuck Rich Bank 1 Sensor 2	Battery voltage is equal to or above 10.9 V	Battery saver mode not active	END	
P2272 - Oxygen Sensor Signal Stuck Lean Bank 2 Sensor 2	Battery voltage is equal to or above 10.9 V	Battery saver mode not active	END	
P2273 - Oxygen Sensor Signal Stuck Rich Bank 2 Sensor 2	Battery voltage is equal to or above 10.9 V	Battery saver mode not active	END	
P227B - Barometric Pressure Sensor Performance Bank 1 Sensor 2	Battery saver mode not active	END		
P227C - Barometric Pressure Sensor Circuit Low Bank 1 Sensor 2	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P227D - Barometric Pressure Sensor Circuit High Bank 1 Sensor 2	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P228C - Fuel Pressure Regulator Exceeded Control Limits - Pressure Too Low	Battery saver mode not active	END		
P228D - Fuel Pressure Regulator Exceeded Control Limits - Pressure Too High	Battery saver mode not active	END		
P2297 - Oxygen Sensor Out of Range During Deceleration Bank 1 Sensor 1	Battery saver mode not active	END		
P2298 - Oxygen Sensor Out of Range During Deceleration Bank 2 Sensor 1	Battery saver mode not active	END		
P2300 - Ignition Coil 1 Control Circuit Low	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P2301 - Ignition Coil 1 Control Circuit High	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P2303 - Ignition Coil 2 Control Circuit Low	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P2304 - Ignition Coil 2 Control Circuit High	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P2306 - Ignition Coil 3 Control Circuit Low	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P2307 - Ignition Coil 3 Control Circuit High	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P2309 - Ignition Coil 4 Control Circuit Low	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P2310 - Ignition Coil 4 Control Circuit High	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P2312 - Ignition Coil 5 Control Circuit Low	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P2313 - Ignition Coil 5 Control Circuit High	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P2315 - Ignition Coil 6 Control Circuit Low	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P2316 - Ignition Coil 6 Control Circuit High	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P2318 - Ignition Coil 7 Control Circuit Low	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END

DTC	Additional Basic Enable Conditions			
P2319 - Ignition Coil 7 Control Circuit High	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P2321 - Ignition Coil 8 Control Circuit Low	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P2322 - Ignition Coil 8 Control Circuit High	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P2500 - Generator L-Terminal Circuit Low	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P2501 - Generator L-Terminal Circuit High	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P2534 - Ignition On/Start Switch Circuit Low	Battery voltage is equal to or above 10.9 V	Battery saver mode not active	END	
P2535 - Ignition On/Start Switch Circuit High	Battery voltage is equal to or above 10.9 V	Battery saver mode not active	END	
P2537 - Ignition Accessory Switch Circuit Low	Battery voltage is equal to or above 10.9 V	Battery saver mode not active	END	
P2538 - Ignition Accessory Switch Circuit High	Battery voltage is equal to or above 10.9 V	Battery saver mode not active	END	
P257D - Engine Hood Switch Performance	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P257E - Engine Hood Switch Circuit Low	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P257F - Engine Hood Switch Circuit High	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P25A2 - Brake System Control Module Requested MIL Illumination	Battery saver mode not active	END		
P25B3 - Turbocharger A Wastegate Stuck Open	Battery saver mode not active	END		
P25B4 - Turbocharger A Wastegate Stuck Closed	Battery saver mode not active	END		
P25B5 - Turbocharger B Wastegate Stuck Open	Battery saver mode not active	END		
P25B6 - Turbocharger B Wastegate Stuck Closed	Battery saver mode not active	END		
P25CA - Camshaft Position Actuator Park Lock Control Circuit Open	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P25CB - Camshaft Position Actuator Park Lock Control Circuit Low	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P25CC - Camshaft Position Actuator Park Lock Control Circuit High	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P25CD - Intake Camshaft Position Actuator Park Lock Control Circuit Open Bank 2	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P25CE - Intake Camshaft Position Actuator Park Lock Control Circuit Low Bank 2	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P25CF - Intake Camshaft Position Actuator Park Lock Control Circuit High Bank 2	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P2600 - Auxiliary Coolant Pump Relay Control Circuit Open	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P2602 - Auxiliary Coolant Pump Relay Control Circuit Low	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P2603 - Auxiliary Coolant Pump Relay Control Circuit High	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P2626 - Oxygen Sensor Pumping Current Trim Circuit Open Bank 1 Sensor 1	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P2629 - Oxygen Sensor Pumping Current Trim Circuit Open Bank 2 Sensor 1	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P262B - Control Module Power Off Timer Performance	Battery saver mode not active	END		
P2635 - Fuel Pump Flow Performance	Battery saver mode not active	END		
P263A - Malfunction Indicator Lamp Control Circuit Low	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P263B - Malfunction Indicator Lamp Control Circuit High	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P26E4 - Starter Drive Pinion Relay Control Circuit Open	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P26E5 - Starter Drive Pinion Relay Control Circuit Low	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P26E6 - Starter Drive Pinion Relay Control Circuit High	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P26FA - Low Temperature Loop Coolant Pump Overspeed	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P2A0B - Manifold Absolute Pressure Sensor Performance Bank 2	Battery saver mode not active	END		

DTC	Additional Basic Enable Conditions			
P2A0C - Manifold Absolute Pressure Sensor Circuit Low Bank 2	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P2A0D - Manifold Absolute Pressure Sensor Circuit High Bank 2	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P2AB8 - Turbocharger A Wastegate Position Sensor Circuit Low	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P2AB9 - Turbocharger A Wastegate Position Sensor Circuit High	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P2ABB - Turbocharger B Wastegate Position Sensor Circuit Low	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P2ABC - Turbocharger B Wastegate Position Sensor Circuit High	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P2ABD - Turbocharger Wastegate Actuator A Driver Current/Temperature Too High	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P2ABE - Turbocharger Wastegate Actuator B Driver Current/Temperature Too High	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P2B81 - Turbocharger A Wastegate Position Sensor Performance	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P2B82 - Turbocharger B Wastegate Position Sensor Performance	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P2B93 - Turbocharger A Wastegate Position Sensor Exceeded Learning Limit	Battery saver mode not active	END		
P2B94 - Turbocharger B Wastegate Position Sensor Exceeded Learning Limit	Battery saver mode not active	END		
P2B95 - Cold Start Injection Pulse Performance	Battery voltage is equal to or above 10.9 V	Battery saver mode not active	END	
P2BA0 - Low Temperature Loop Coolant Pump Underspeed	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P2C02 - Fuel Pressure Regulator Control Circuit Open Bank 2	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P2C03 - Fuel Pressure Regulator Control Circuit Low Bank 2	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P2C04 - Fuel Pressure Regulator Control Circuit High Bank 2	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P2C48 - Low Temperature Loop Coolant Pump Performance	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P2C9B - Cold Start Turbocharger A Wastegate Control Performance	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P2C9C - Cold Start Turbocharger B Wastegate Control Performance	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P2E68 - Fuel Trim System Lean During Cylinder Deactivation Bank 1	Battery saver mode not active	END		
P2E69 - Fuel Trim System Rich During Cylinder Deactivation Bank 1	Battery saver mode not active	END		
P2E6A - Fuel Trim System Lean During Cylinder Deactivation Bank 2	Battery saver mode not active	END		
P2E6B - Fuel Trim System Rich During Cylinder Deactivation Bank 2	Battery saver mode not active	END		
P3051 - DC/DC Converter Output Voltage Sensing Circuit 1 Low	Battery saver mode not active	END		
P3052 - DC/DC Converter Output Voltage Sensing Circuit 2 Low	Battery saver mode not active	END		
P3053 - DC/DC Converter Output Voltage Sensing Circuit 1 High	Battery saver mode not active	END		
P3054 - DC/DC Converter Output Voltage Sensing Circuit 2 High	Battery saver mode not active	END		
P3055 - DC/DC Converter Output Voltage 1 Performance	Battery saver mode not active	END		
P3056 - DC/DC Converter Output Voltage 2 Performance	Battery saver mode not active	END		
P305B - DC/DC Converter Ignition Switch Run/Start Position Circuit High	Battery saver mode not active	END		
P305C - DC/DC Converter Ignition Switch Run/Start Position Circuit Low	Battery saver mode not active	END		
P305D - DC/DC Converter Crank Input Signal Circuit High Voltage	Battery saver mode not active	END		
P305E - DC/DC Converter Crank Input Signal Circuit Low Voltage	Battery saver mode not active	END		
P30D8 - Control Module Processor Serial Peripheral Interface Bus 3	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P30D9 - Control Module Processor Serial Peripheral Interface Bus 4	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END
P30E8 - Turbocharger A Wastegate Control Circuit 2 Low	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END

DTC	Additional Basic Enable Conditions							
P30E9 - Turbocharger A Wastegate Control Circuit 2 High	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END				
P30EA - Turbocharger B Wastegate Control Circuit 2 Low	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END				
P30EB - Turbocharger B Wastegate Control Circuit 2 High	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END				
P3138 - Fuel Pressure Regulator High Control Circuit Low Bank 2	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END				
P3139 - Fuel Pressure Regulator High Control Circuit High Bank 2	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END				
P313A - Fuel Pressure Regulator High Control Circuit Shorted to Control Circuit Bank 2	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END				
P318A - Cylinder 2 Reactivation Performance - Trapped High Pressure Exhaust Charge	Battery saver mode not active	END						
P318B - Cylinder 3 Reactivation Performance - Trapped High Pressure Exhaust Charge	Battery saver mode not active	END						
P318D - Cylinder 5 Reactivation Performance - Trapped High Pressure Exhaust Charge	Battery saver mode not active	END						
P3190 - Cylinder 8 Reactivation Performance - Trapped High Pressure Exhaust Charge	Battery saver mode not active	END						
P3196 - Low Temperature Loop Coolant Pump Speed Performance	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END				
P3198 - Low Temperature Loop Coolant Pump Motor Current Out Of Range High	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END				
P3199 - Low Temperature Loop Coolant Pump Motor Current Out Of Range Low	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END				
P3409 - Cylinder 2 Deactivation Solenoid Control Circuit Open	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END				
P3411 - Cylinder 2 Deactivation Solenoid Control Circuit Low	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END				
P3412 - Cylinder 2 Deactivation Solenoid Control Circuit High	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END				
P3417 - Cylinder 3 Deactivation Solenoid Control Circuit Open	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END				
P3419 - Cylinder 3 Deactivation Solenoid Control Circuit Low	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END				
P3420 - Cylinder 3 Deactivation Solenoid Control Circuit High	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END				
P3433 - Cylinder 5 Deactivation Solenoid Control Circuit Open	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END				
P3435 - Cylinder 5 Deactivation Solenoid Control Circuit Low	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END				
P3436 - Cylinder 5 Deactivation Solenoid Control Circuit High	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END				
P3457 - Cylinder 8 Deactivation Solenoid Control Circuit Open	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END				
P3459 - Cylinder 8 Deactivation Solenoid Control Circuit Low	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END				
P3460 - Cylinder 8 Deactivation Solenoid Control Circuit High	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END				
P3499 - Cylinder 2 Deactivation Performance	Battery saver mode not active	END						
P349A - Cylinder 3 Deactivation Performance	Battery saver mode not active	END						
P349C - Cylinder 5 Deactivation Performance	Battery saver mode not active	END						
P349F - Cylinder 8 Deactivation Performance	Battery saver mode not active	END						
U0073 - Control Module Communication High Speed CAN Bus Off	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	System Power Mode is run	END			
U0074 - Control Module Communication Powertrain Expansion CAN Bus Off	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	System Power Mode is run	END			
U0076 - Control Module Communication Powertrain Sensor CAN Bus Off	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	System Power Mode is run	END			
U0101 - Lost Communication With Transmission Control Module	Battery voltage is equal to or above 10.9 V	Engine not in afterrun mode (defined as engine stopped with ignition off)	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Engine is not in standby state (standby state occurs after ECM initialization or following after-run)	Battery saver mode not active	Engine not in stopping mode (defined as engine speed greater than 0 rpm with ignition off)	System Power Mode is run	END
U0102 - Lost Communication with Transfer Case Control Module	Battery voltage is equal to or above 10.9 V	Engine not in afterrun mode (defined as engine stopped with ignition off)	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Engine is not in standby state (standby state occurs after ECM initialization or following after-run)	Battery saver mode not active	Engine not in stopping mode (defined as engine speed greater than 0 rpm with ignition off)	System Power Mode is run	END
U0104 - Lost Communication With Adaptive Cruise Control Module	Battery voltage is equal to or above 10.9 V	Engine not in afterrun mode (defined as engine stopped with ignition off)	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Engine is not in standby state (standby state occurs after ECM initialization or following after-run)	Battery saver mode not active	Engine not in stopping mode (defined as engine speed greater than 0 rpm with ignition off)	System Power Mode is run	END
U0129 - Lost Communication With Brake System Control Module	Battery voltage is equal to or above 10.9 V	Engine not in afterrun mode (defined as engine stopped with ignition off)	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Engine is not in standby state (standby state occurs after ECM initialization or following after-run)	Battery saver mode not active	Engine not in stopping mode (defined as engine speed greater than 0 rpm with ignition off)	System Power Mode is run	END
U0140 - Lost Communication With Body Control Module	Battery voltage is equal to or above 10.9 V	Engine not in afterrun mode (defined as engine stopped with ignition off)	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Engine is not in standby state (standby state occurs after ECM initialization or following after-run)	Battery saver mode not active	Engine not in stopping mode (defined as engine speed greater than 0 rpm with ignition off)	System Power Mode is run	END

DTC	Additional Basic Enable Conditions							
U0146 - Lost Communication With Gateway	Battery voltage is equal to or above 10.9 V	Engine not in afterrun mode (defined as engine stopped with ignition off)	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Engine is not in standby state (standby state occurs after ECM initialization or following after-run)	Battery saver mode not active	Engine not in stopping mode (defined as engine speed greater than 0 rpm with ignition off)	System Power Mode is run	END
U01B0 - Lost Communication With Battery Sensor Module	Battery voltage is equal to or above 10.9 V	Engine not in afterrun mode (defined as engine stopped with ignition off)	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Engine is not in standby state (standby state occurs after ECM initialization or following after-run)	Battery saver mode not active	Engine not in stopping mode (defined as engine speed greater than 0 rpm with ignition off)	System Power Mode is run	END
U023A - Lost Communication with Active Safety Control Module 1	Battery voltage is equal to or above 10.9 V	Engine not in afterrun mode (defined as engine stopped with ignition off)	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Engine is not in standby state (standby state occurs after ECM initialization or following after-run)	Battery saver mode not active	Engine not in stopping mode (defined as engine speed greater than 0 rpm with ignition off)	System Power Mode is run	END
U0402 - Invalid Data Received From Transmission Control Module	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	System Power Mode is run	END			
U0403 - Invalid Data Received From Transfer Case Control Module	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	System Power Mode is run	END			
U0404 - Invalid Data Received From Transmission Range Selector Control Module	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	System Power Mode is run	END			
U0405 - Invalid Data Received From Cruise Control Module	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	System Power Mode is run	END			
U0418 - Invalid Data Received From Brake System Control Module	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	System Power Mode is run	END			
U0422 - Invalid Data Received From Body Control Module	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	System Power Mode is run	END			
U0447 - Invalid Data Received From Serial Data Gateway Module	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	System Power Mode is run	END			
U0499 - Invalid Data Received From Telematics Communication Interface Control Module	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	System Power Mode is run	END			
U04B1 - Invalid Data Received From Battery Sensor Module	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END				
U053B - Invalid Data Received From Active Safety Control Module 1	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	System Power Mode is run	END			
U0599 - Invalid Data Received From DC/DC Converter Control Module	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	System Power Mode is run	END			
U0611 - Lost Communication With Intake Air Temperature Sensor Bank 1 Sensor 1	Battery voltage is equal to or above 10.9 V	Engine not in afterrun mode (defined as engine stopped with ignition off)	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Engine is not in standby state (standby state occurs after ECM initialization or following after-run)	Battery saver mode not active	Engine not in stopping mode (defined as engine speed greater than 0 rpm with ignition off)	System Power Mode is run	END
U0612 - Lost Communication With Intake Air Temperature Sensor Bank 2 Sensor 1	Battery voltage is equal to or above 10.9 V	Engine not in afterrun mode (defined as engine stopped with ignition off)	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Engine is not in standby state (standby state occurs after ECM initialization or following after-run)	Battery saver mode not active	Engine not in stopping mode (defined as engine speed greater than 0 rpm with ignition off)	System Power Mode is run	END
U062F - Loss Of Communication with Low Temperature Loop Coolant Pump	Battery voltage is equal to or above 10.9 V	Engine not in afterrun mode (defined as engine stopped with ignition off)	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Engine is not in standby state (standby state occurs after ECM initialization or following after-run)	Battery saver mode not active	Engine not in stopping mode (defined as engine speed greater than 0 rpm with ignition off)	System Power Mode is run	END
U0644 - Lost Communication With Turbocharger A Wastegate Position Sensor	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END				
U0674 - Lost Communication With Turbocharger B Wastegate Position Sensor	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END				
U0680 - Lost Communication With Barometric Pressure Sensor Bank 2 Sensor 1	Battery voltage is equal to or above 10.9 V	Engine not in afterrun mode (defined as engine stopped with ignition off)	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Engine is not in standby state (standby state occurs after ECM initialization or following after-run)	Battery saver mode not active	Engine not in stopping mode (defined as engine speed greater than 0 rpm with ignition off)	System Power Mode is run	END
U068A - Lost Communication With Barometric Pressure Sensor Bank 1 Sensor 2	Battery voltage is equal to or above 10.9 V	Engine not in afterrun mode (defined as engine stopped with ignition off)	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Engine is not in standby state (standby state occurs after ECM initialization or following after-run)	Battery saver mode not active	Engine not in stopping mode (defined as engine speed greater than 0 rpm with ignition off)	System Power Mode is run	END
U101B - Lost Communication With Fuel Rail Pressure Sensor Bank 1 Sensor 2	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END				
U131D - Invalid Data Received From Fuel Pump Driver Control Module	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	System Power Mode is run	END			
U1345 - Engine Control Module LIN Bus 1	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	System Power Mode is run	END			
U1346 - Engine Control Module LIN Bus 2	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	System Power Mode is run	END			
U1348 - Engine Control Module LIN Bus 4	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	System Power Mode is run	END			
U1349 - Engine Control Module LIN Bus 5	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	System Power Mode is run	END			
U135E - Lost Communication with Transmission Control Module on Engine Control Module LIN Bus 1	Battery voltage is equal to or above 10.9 V	Engine not in afterrun mode (defined as engine stopped with ignition off)	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Engine is not in standby state (standby state occurs after ECM initialization or following after-run)	Battery saver mode not active	Engine not in stopping mode (defined as engine speed greater than 0 rpm with ignition off)	System Power Mode is run	END
U1370 - Invalid Data Received From Intake Air Temperature Sensor 1	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END				
U1371 - Invalid Data Received From Barometric Pressure Sensor 2	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END				
U1372 - Invalid Data Received From Intake Air Temperature Sensor Bank 2 Sensor 1	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END				
U1373 - Invalid Data Received From Barometric Pressure Sensor Bank 2 Sensor 1	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END				
U1375 - Invalid Data Received From Fuel Rail Pressure Sensor 2	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END				
U1376 - Invalid Data Received From Turbocharger Wastegate Position Sensor Bank 1	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END				
U1377 - Invalid Data Received From Turbocharger Wastegate Position Sensor Bank 2	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END				
U1378 - Invalid Data Received From Low Temperature Coolant Loop Pump	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	System Power Mode is run	END			
U18A2 - Lost Communication With Fuel Pump Driver Control Module	Battery voltage is equal to or above 10.9 V	Engine not in afterrun mode (defined as engine stopped with ignition off)	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Engine is not in standby state (standby state occurs after ECM initialization or following after-run)	Battery saver mode not active	Engine not in stopping mode (defined as engine speed greater than 0 rpm with ignition off)	System Power Mode is run	END

DTC	Additional Basic Enable Conditions							
U18A7 - Lost Communication with DC/DC Converter Control Module on Powertrain Expansion CAN Bus	Battery voltage is equal to or above 10.9 V	Engine not in afterrun mode (defined as engine stopped with ignition off)	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	Engine not in stopping mode (defined as engine speed greater than 0 rpm with ignition off)	END		
U18C6 - Transmission Range Selector Control Module Lost Communication With ECM on Powertrain Sensor CAN Bus	Battery voltage is equal to or above 10.9 V	Engine not in afterrun mode (defined as engine stopped with ignition off)	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Engine is not in standby state (standby state occurs after ECM initialization or following after-run)	Battery saver mode not active	Engine not in stopping mode (defined as engine speed greater than 0 rpm with ignition off)	END	
U18C7 - Transmission Range Selector Control Module Lost Communication With ECM on Powertrain Expansion CAN Bus	Battery voltage is equal to or above 10.9 V	Engine not in afterrun mode (defined as engine stopped with ignition off)	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Engine is not in standby state (standby state occurs after ECM initialization or following after-run)	Battery saver mode not active	Engine not in stopping mode (defined as engine speed greater than 0 rpm with ignition off)	END	
U18D2 - Lost Communication with Transmission Range Selector Control Module on Powertrain Sensor CAN Bus	Battery voltage is equal to or above 10.9 V	Engine not in afterrun mode (defined as engine stopped with ignition off)	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Engine is not in standby state (standby state occurs after ECM initialization or following after-run)	Battery saver mode not active	Engine not in stopping mode (defined as engine speed greater than 0 rpm with ignition off)	System Power Mode is run	END
U18D3 - Lost Communication with Transmission Range Selector Control Module on Powertrain Expansion CAN Bus	Battery voltage is equal to or above 10.9 V	Engine not in afterrun mode (defined as engine stopped with ignition off)	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Engine is not in standby state (standby state occurs after ECM initialization or following after-run)	Battery saver mode not active	Engine not in stopping mode (defined as engine speed greater than 0 rpm with ignition off)	System Power Mode is run	END
U18D5 - Central Gateway Module Lost Communication with Engine Control Module	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END					
U18D7 - Central Gateway Module Lost Communication with Transmission Control Module	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END					
U18DC - Central Gateway Module Lost Communication with Brake System Control Module 1	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END					
U240D - Transmission Range Selector Control Module Powertrain Expansion CAN Bus Off	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END				
U240E - Transmission Range Selector Control Module Sensor CAN Bus Off	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END				
U2413 - Central Gateway Module High Speed CAN Bus Off	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END					
U2414 - Central Gateway Module High Speed Extension CAN Bus Off	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END					
U250D - Invalid Data Received From Transmission Control Module on LIN Bus	Battery voltage is equal to or above 10.9 V	Engine not in starting mode (defined as engine crank with speed not equal to run mode)	Battery saver mode not active	END				

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Backup Transmission Range Command Message Counter Incorrect	C1201	UPDATE The diagnostic monitor detects an alive rolling count error or protection value (checksum) error in the LIN bus frame containing the Electronic Transmission Range Selector (ETRS) signal data. The alive rolling count sequences 0, 1, 2, 3 repeatedly. As each serial data frame is broadcast by the transmitting controller, the transmitting controller increments the alive rolling count in this sequence manner. The receiving controller compares the most recent received alive rolling count value to the previous value plus one. If the values are not equal, an alive rolling count error has occurred. The protection value is based on the checksum of the ETRS data parameters in the transmit message frame, and is incorporated in the transmit message frame. If the TCM receives the ECM/ CHCM ETRS data	rolling count value received from ECM/ CHCM and expected TCM calculated value not equal	= TRUE	Loop rate calibration either 10 milliseconds or 12.5 milliseconds service mode $04 active battery voltage battery voltage time ETRS ECM/CHCM frame recieved	= CeCFMD_e_DEC_TimeBase_12p5 = FALSE ≥ 11.00 volts ≥ 300.000 seconds = TRUE	alive rolling count errors ≥ 8 out of 10 sample counts	Type B, 2 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
		message frame, the TCM calculates the protection value, again based on the ETRS data parameters, in the receive message frame. If the TCM calculated protection value does not equal the protection value incorporated in the ECM/CHCM ETRS data message frame, a or protection value error has occurred. If continuous alive rolling count errors or protection value errors occur, the DTC is set.						

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Steering Wheel Angle Sensor Signal Message Counter Incorrect	C1211	This DTC monitors for an error in the Steering Wheel Angle Sensor Signal Message Counter Emission neutral default action sets steering angle to 0.0.	Communication of the Alive Rolling Count or Protection Value from the Steering Wheel Angle Sensor over CAN bus is incorrect for out of total samples	 >= 8.00 counts >= 10.00 counts	Message frame All the following conditions are met for Power Mode Powertrain Relay Voltage Run/Crank Ignition Voltage	= Is available >= 300.00 milliseconds = Run >= 11.00 Volts >= 11.00 Volts	Executes in 10ms loop.	Emissions Neutral Diagnostic – Type C

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lateral Acceleration Sensor Circuit Low	C124F	Controller specific analog circuit diagnoses the raw lateral acceleration signal for a short to ground or open fault by comparing raw signal value to fail thresholds. Emission neutral default state sets lateral acceleration signal = 0.0 g.	raw lateral acceleration signal when sensor type is directly proportional OR raw lateral acceleration signal when sensor type is inversely proportional update raw lateral acceleration signal stability time, fail and sample time, 50 millisecond update rate	≤ -3.8500 g ≥ -3.8500 g (≤ 0.5 Ω impedance between signal and controller ground)	battery voltage run crank voltage diagnostic monitor enable sensor type is either directly proportional or inversely proportional U0073 fault active U0073 test fail this key on	≥ 11.00 volts ≥ 11.00 volts = 1 Boolean = CeLATR_e_VoltageDirectProp = FALSE = FALSE	raw lateral acceleration signal stability time ≥ 30.0 seconds, fail time ≥ 75.0 seconds out of sample time ≥ 120.0 seconds, 50 millisecond update rate	Emissions Neutral Diagnostic – Type C

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lateral Acceleration Sensor Circuit High	C1250	Controller specific analog circuit diagnoses the raw lateral acceleration signal for a short to power or open fault by comparing raw signal value to fail thresholds. Emission neutral default state sets lateral acceleration signal = 0.0 g.	raw lateral acceleration signal when sensor type is directly proportional OR raw lateral acceleration signal when sensor type is inversely proportional update raw lateral acceleration signal stability time, fail and sample time, 50 millisecond update rate	≥ 3.8500 g ≤ 3.8500 g (≤ 0.5 Ω impedance between signal and controller power)	battery voltage run crank voltage diagnostic monitor enable sensor type is either directly proportional or inversely proportional U0073 fault active U0073 test fail this key on	≥ 11.00 volts ≥ 11.00 volts = 1 Boolean = CeLATR_e_VoltageDirectProp = FALSE = FALSE	raw lateral acceleration signal stability time ≥ 30.0 seconds, fail time ≥ 75.0 seconds out of sample time ≥ 120.0 seconds, 50 millisecond update rate	Emissions Neutral Diagnostic – Type C

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lateral Acceleration Sensor Performance	C1251	Controller specific analog circuit diagnoses the raw lateral acceleration signal for a signal value that is stuck in a valid range by comparing raw signal value to fail thresholds. Emission neutral default state sets lateral acceleration signal = 0.0 g.	ABS(raw lateral acceleration signal) AND ABS(raw lateral acceleration signal) update raw lateral acceleration signal fail, 50 millisecond update rate	≥ 0.5300 g ≤ 3.8500 g	battery voltage run crank voltage diagnostic monitor enable update raw lateral acceleration signal stablity time: TOSS vehicle speed automatic transmission is clutch to clutch OR dual clutch high side drive 1 enable high side drive 2 enable diagnsotic fault sequence gear active P0716 fault active P0716 test fail this key on P0717 fault active P0717 test fail this key on P07BF fault active P07BF test fail this key on P07C0 fault active P07C0test fail this key on attained gear ABS(raw lateral acceleration signal) update sample time U0073 fault active U0073 test fail this key on DTCs not fault active	≥ 11.00 volts ≥ 11.00 volts = 1 Boolean ≥ 15.0 KPH = TRUE = TRUE = TRUE = FALSE = FALSE = FALSE = FALSE = FALSE = FALSE = FALSE = FALSE = FALSE = 1st thru 10th < 0.5300 g = FALSE = FALSE VehicleSpeedSensor_FA	raw lateral acceleration signal stability time ≥ 10.0 seconds, fail time ≥ 75.0 seconds out of sample time ≥ 120.0 seconds, 50 millisecond update rate	Emissions Neutral Diagnostic – Type C

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Longitudinal Acceleration Sensor Circuit Low	C1252	Controller specific analog circuit diagnoses the raw longitudinal acceleration signal for a short to ground or open fault by comparing raw signal value to fail thresholds. Emission neutral default state sets lateral longitudinal acceleration signal = 0.0 g.	raw longitudinal acceleration signal when sensor type is directly proportional OR raw longitudinal acceleration signal when sensor type is inversely proportional update raw longitudinal acceleration signal stability time, fail and sample time, 50 millisecond update rate	≤ -3.8500 g ≥ -3.8500 g (≤ 0.5 Ω impedance between signal and controller ground)	battery voltage run crank voltage diagnostic monitor enable sensor type is either directly proportional or inversely proportional U0073 fault active U0073 test fail this key on	≥ 11.00 volts ≥ 11.00 volts = 1 Boolean = CeLATR_e_VoltageDirectProp = FALSE = FALSE	raw longitudinal acceleration signal stability time ≥ 30.0 seconds, fail time ≥ 75.0 seconds out of sample time ≥ 120.0 seconds, 50 millisecond update rate	Emissions Neutral Diagnostic – Type C

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Longitudinal Acceleration Sensor Circuit High	C1253	Controller specific analog circuit diagnoses the raw longitudinal acceleration signal for a short to power or open fault by comparing raw signal value to fail thresholds. Emission neutral default state sets lateral longitudinal acceleration signal = 0.0 g.	raw longitudinal acceleration signal when sensor type is directly proportional OR raw longitudinal acceleration signal when sensor type is inversely proportional update raw longitudinal acceleration signal stability time, fail and sample time, 50 millisecond update rate	≥ 3.8500 g ≤ 3.8500 g (≤ 0.5 Ω impedance between signal and controller power)	battery voltage run crank voltage diagnostic monitor enable sensor type is either directly proportional or inversely proportional U0073 fault active U0073 test fail this key on	≥ 11.00 volts ≥ 11.00 volts = 1 Boolean = CeLATR_e_VoltageDirectProp = FALSE = FALSE	raw longitudinal acceleration signal stability time ≥ 30.0 seconds, fail time ≥ 75.0 seconds out of sample time ≥ 120.0 seconds, 50 millisecond update rate	Emissions Neutral Diagnostic – Type C

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Longitudinal Acceleration Sensor Performance	C1254	Controller specific analog circuit diagnoses the raw longitudinal acceleration signal rationalized against the TOSS vehicle speed acceleration. The diagnostic monitor can be designed to detect an invalid longitudinal acceleration signal based on the TOSS vehicle speed windows and TOSS vehicle speed acceleration, 4 windows can be enabled. The delta between the TOSS vehicle speed acceleration and longitudinal acceleration signal is taken within each window to verify the delta is small, no failure indicated, or the delta is large indicating the longitudinal acceleration signal is in error. Emission neutral default state sets lateral longitudinal acceleration signal = 0.0 g.	ABS(TOSS vehicle speed acceleration - raw longitudinal acceleration signal) update raw longitudinal acceleration signal region 1 fail time, 50 millisecond update rate	≥ 0.0800 g	battery voltage run crank voltage diagnostic monitor enable region 1 specific enable update raw lateral longitudinal acceleration signal stablity time: TOSS vehicle speed TOSS vehicle speed acceleration automatic transmission is clutch to clutch OR dual clutch high side drive 1 enable high side drive 2 enable diagnsotic fault sequence gear active P0716 fault active P0716 test fail this key on P0717 fault active P0717 test fail this key on P07BF fault active P07BF test fail this key on P07C0 fault active P07C0test fail this key on attained gear ABS(raw longitudinal acceleration signal) AND ABS(raw longitudinal acceleration signal) update region 1 sample time: brake pedal position engine torque TOSS vehicle speed acceleration TOSS vehicle speed TOSS vehicle speed	≥ 11.00 volts ≥ 11.00 volts = 1 Boolean = 1 Boolean ≥ 15.0 KPH ≤ 0.5300 g = TRUE = TRUE = TRUE = FALSE = FALSE = FALSE = FALSE = FALSE = FALSE = FALSE = FALSE = FALSE = 1st thru 10th ≥ 0.5300 g ≤ 3.8500 g ≤ 0.70 % ≥ 50.0 Nm ≥ 0.0800 g ≥ 2.0 KPH ≤ 120.0 KPH	raw lateral longitudinal acceleration signal stability time ≥ 10.0 seconds, fail time ≥ 75.0 seconds out of sample time ≥ 120.0 seconds, 50 millisecond update rate region 1 fail time ≥ 4.0 seconds out of region 1 sample time ≥ 5.0 seconds, 50 millisecond update rate	Emissions Neutral Diagnostic – Type C

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					ABS(raw longitudinal acceleration signal) update sample time U0073 fault active U0073 test fail this key on DTCs not fault active	< 0.5300 g = FALSE = FALSE VehicleSpeedSensor_FA VehicleSpeedSensorError		
			ABS(TOSS vehicle speed acceleration - raw longitudinal acceleration signal) update raw longitudinal acceleration signal region 2 fail time, 50 millisecond update rate	≥ 0.0000 g	battery voltage run crank voltage diagnostic monitor enable region 2 specific enable update raw lateral longitudinal acceleration signal stablity time: TOSS vehicle speed TOSS vehicle speed acceleration automatic transmission is clutch to clutch OR dual clutch high side drive 1 enable high side drive 2 enable diagnsotic fault sequence gear active P0716 fault active P0716 test fail this key on P0717 fault active P0717 test fail this key on P07BF fault active P07BF test fail this key on P07C0 fault active P07C0test fail this key on attained gear ABS(raw longitudinal acceleration signal) AND ABS(raw longitudinal acceleration signal)	≥ 11.00 volts ≥ 11.00 volts = 1 Boolean = 0 Boolean ≥ 15.0 KPH ≤ 0.5300 g = TRUE = TRUE = TRUE = FALSE = FALSE = FALSE = FALSE = FALSE = FALSE = FALSE = FALSE = FALSE = 1st thru 10th ≥ 0.5300 g ≤ 3.8500 g	raw lateral longitudinal acceleration signal stability time ≥ 10.0 seconds, fail time ≥ 75.0 seconds out of sample time ≥ 120.0 seconds, 50 millisecond update rate	

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					update region 2 sample time: brake pedal position engine torque TOSS vehicle speed acceleration TOSS vehicle speed TOSS vehicle speed ABS(raw longitudinal acceleration signal) update sample time U0073 fault active U0073 test fail this key on DTCs not fault active	 ≤ 0.70 % ≥ 80.0 Nm ≥ 0.1500 g ≥ 0.0 KPH ≤ 0.0 KPH < 0.5300 g = FALSE = FALSE VehicleSpeedSensor_FA VehicleSpeedSensorError	region 2 fail time ≥ 75.0 seconds out of region 2 sample time ≥ 120.0 seconds, 50 millisecond update rate	
			ABS(TOSS vehicle speed acceleration - raw longitudinal acceleration signal) update raw longitudinal acceleration signal region 3 fail time, 50 millisecond update rate	≥ 0.0000 g	battery voltage run crank voltage diagnostic monitor enable region 3 specific enable update raw lateral longitudinal acceleration signal stablity time: TOSS vehicle speed TOSS vehicle speed acceleration automatic transmission is clutch to clutch OR dual clutch high side drive 1 enable high side drive 2 enable diagnsotic fault sequence gear active P0716 fault active P0716 test fail this key on P0717 fault active P0717 test fail this key on P07BF fault active P07BF test fail this key on	≥ 11.00 volts ≥ 11.00 volts = 1 Boolean = 0 Boolean ≥ 15.0 KPH ≤ 0.5300 g = TRUE = TRUE = TRUE = FALSE = FALSE = FALSE = FALSE = FALSE = FALSE = FALSE	raw lateral longitudinal acceleration signal stability time ≥ 10.0 seconds, fail time ≥ 75.0 seconds out of sample time ≥ 120.0 seconds, 50 millisecond update rate	

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					P07C0 fault active P07C0test fail this key on attained gear ABS(raw longitudinal acceleration signal) AND ABS(raw longitudinal acceleration signal) update region 3 sample time: brake pedal position engine torque ABS(TOSS vehicle speed acceleration) TOSS vehicle speed ABS(raw longitudinal acceleration signal) update sample time U0073 fault active U0073 test fail this key on DTCs not fault active	= FALSE = FALSE = 1st thru 10th ≥ 0.5300 g ≤ 3.8500 g ≤ 0.70 % ≥ 80.0 Nm ≤ 0.1000 g ≥ 0.0 KPH < 0.5300 g = FALSE = FALSE VehicleSpeedSensor_FA VehicleSpeedSensorError	region 3 fail time ≥ 75.0 seconds out of region 3 sample time ≥ 120.0 seconds, 50 millisecond update rate	
			ABS(TOSS vehicle speed acceleration - raw longitudinal acceleration signal) update raw longitudinal acceleration signal region 4 fail time, 50 millisecond update rate	≥ 0.1700 g	battery voltage run crank voltage diagnostic monitor enable region 3 specific enable update raw lateral longitudinal acceleration signal stablity time: TOSS vehicle speed TOSS vehicle speed acceleration automatic transmission is clutch to clutch OR dual clutch high side drive 1 enable high side drive 2 enable	≥ 11.00 volts ≥ 11.00 volts = 1 Boolean = 1 Boolean ≥ 15.0 KPH ≤ 0.5300 g = TRUE = TRUE = TRUE	raw lateral longitudinal acceleration signal stability time ≥ 10.0 seconds, fail time ≥ 75.0 seconds out of sample time ≥ 120.0 seconds, 50 millisecond update rate	

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					diagnsotic fault sequence gear active P0716 fault active P0716 test fail this key on P0717 fault active P0717 test fail this key on P07BF fault active P07BF test fail this key on P07C0 fault active P07C0test fail this key on attained gear ABS(raw longitudinal acceleration signal) AND ABS(raw longitudinal acceleration signal) update region 4 sample time: brake pedal position engine torque TOSS vehicle speed acceleration TOSS vehicle speed TOSS vehicle speed ABS(raw longitudinal acceleration signal) update sample time U0073 fault active U0073 test fail this key on DTCs not fault active	= FALSE = FALSE = FALSE = FALSE = FALSE = FALSE = FALSE = FALSE = FALSE = 1st thru 10th ≥ 0.5300 g ≤ 3.8500 g ≤ 0.70 % ≤ 50.0 Nm ≤ -0.1700 g ≥ 2.0 KPH ≤ 120.0 KPH < 0.5300 g = FALSE = FALSE VehicleSpeedSensor_FA VehicleSpeedSensorError	region 4 fail time ≥ 2.0 seconds out of region 4 sample time ≥ 2.5 seconds, 50 millisecond update rate	

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
System Voltage Performance	P0561	Detects a low performing 12V battery system. This diagnostic reports the DTC when the absolute value of the difference between the battery voltage and the run/ crank voltage exceeds a calibrated value.	Run Crank voltage low and high	ABS(Battery voltage - Run Crank voltage) > 3.00	Battery voltage B+ line present = TRUE Battery voltage low and high diag enable = TRUE Run Crank voltage	1.00 1.00 Voltage ≥ 5.00 volts	40 failures out of 50 samples 100 ms / sample	Type A, 1 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Control Module Read Only Memory (ROM)	P0601	This DTC will be stored if the calibration check sum is incorrect or the flash memory detects an uncorrectable error via the Error Correcting Code.	The Primary Processor's calculated checksum does not match the stored checksum value. Covers all software and calibrations.	1 failure if the fault is detected during the first pass. 5.00 failures if the fault occurs after the first pass is complete.			Diagnostic runs continuously in the background.	Type A, 1 Trips
			The Primary Processor's Error Correcting Code hardware in the flash memory detects an error. Covers all software and calibrations.	254 failures detected via Error Correcting Code			Diagnostic runs continuously via the flash hardware.	
			The Primary Processor's calculated checksum does not match the stored checksum value for a selected subset of the calibrations.	2 consecutive failures detected or 5 total failures detected.			Diagnostic runs continuously. Will report a detected fault within 200 ms.	
				In all cases, the failure count is cleared when controller shuts down				

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Control Module Not Programmed	P0602	This DTC will be stored if the DEC ECU has not been flash programmed with production software and calibration.	controller not flash programmed calibration	= 0 Boolean	controller normal power up initialization, ignition run crank transtions from low to high		at controller power up intitalization one time (one event/ occurance) OR	Type A, 1 Trips
					service Mode $04 active during one second loop	= FALSE	in one second time loop	

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Control Module Long Term Memory Reset	P0603	This DTC detects an invalid NVM which includes a Static NVM, Perserved NVM, ECC ROM in NVM Flash Region, and Perserved NVM during shut down.	Static NVM region error detected during initialization				Diagnostic runs at controller power up.	Type A, 1 Trips
			Perserved NVM region error detected during initialization				Diagnostic runs at controller power up.	
			Perserved NVM region error detected during shut down.				Diagnostic runs at controller power down.	

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 TEST GROUP: KGMXV04.2088 EMISSIONS STDS: CAL--ULEV125; FED--BIN125

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Control Module RAM Failure	P0604	Indicates that the controller has detected a RAM fault. This includes Primary Processor System RAM Fault, Primary Processor Cache RAM Fault, Primary Processor TPU RAM Fault, Primary Processor Update Dual Store RAM Fault, Primary Processor Write Protected RAM Fault, and Secondary Processor RAM Fault. This diagnostic runs continuously.	Indicates that the primary processor is unable to correctly read data from or write data to system RAM. Detects data read does not match data written >=	254 counts			Will finish first memory scan within 30 seconds at all engine conditions - diagnostic runs continuously (background loop)	Type A, 1 Trips
			Indicates that the primary processor is unable to correctly read data from or write data to cached RAM. Detects data read does not match data written >=	3 counts			Will finish first memory scan within 30 seconds at all engine conditions - diagnostic runs continuously (background loop)	
			Indicates that the primary processor is unable to correctly read data from or write data to TPU RAM. Detects data read does not match data written >=	5 counts			Will finish first memory scan within 30 seconds at all engine conditions - diagnostic runs continuously (background loop)	
			Indicates that the primary processor detects a mismatch between the data and dual data is found during RAM updates. Detects a mismatch in data and dual data updates >	0.40000 s			When dual store updates occur.	

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
			Indicates that the primary processor detects an illegal write attempt to protected RAM. Number of illegal writes are >	65,534 counts			Diagnostic runs continuously (background loop)	

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Internal Processor Integrity Fault	P0606	Indicates that the conroller has detected an internal processor integrity fault. These include diagnostics done on the SPI Communication as well as a host of diagnostics for both the primary and secondary processsors.	Time new seed not received exceeded			always running	409.594 seconds	Type A, 1 Trips
			MAIN processor receives seed in wrong order			always running	18 / 17 counts intermittent. 50 ms/count in the ECM main processor	
			2 fails in a row in the MAIN processor's ALU check			Test is Enabled: CPU1 0 CPU2 1 CPU3 0 CPU4 0 (If 0, this test is disabled)	25 ms	
			2 fails in a row in the MAIN processor's configuration register masks versus known good data			Test is Enabled: 1 (If 0, this test is disabled)	12.5 to 25 ms	
			Checks number of stack over/under flow since last powerup reset >=	5.00		Test is Enabled: 1 (If 0, this test is disabled)	variable, depends on length of time to corrupt stack	
			Voltage deviation >	0.4950		Test is Enabled: 1 (If 0, this test is disabled)	5 / 10 counts or 0.450 seconds continuous; 50 ms/count in the ECM main processor	
			Checks for ECC (error correcting code) circuit	3 (results in MIL), 5 (results in MIL and		Test is Enabled: 1	variable, depends on	

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
			test errors reported by the hardware for flash memory. Increments counter during controller initialization if ECC error occured since last controller initialization. Counter >=	remedial action)		(If 0, this test is disabled)	length of time to access flash with corrupted memory	
			Checks for ECC (error correcting code) circuit test errors reported by the hardware for RAM memory circuit. Increments counter during controller initialization if ECC error occured since last controller initialization. Counter >=	3 (results in MIL), 5 (results in MIL and remedial action)		Test is Enabled: 1 (If 0, this test is disabled)	variable, depends on length of time to write flash to RAMvariable, depends on length of time to write flash to RAM	
			MAIN processor DMA transfer from Flash to RAM has 1 failure			Test is Enabled: 1 (If 0, this test is disabled)	variable, depends on length of time to write flash to RAM	
			Safety critical software is not executed in proper order.	>= 1 incorrect sequence.		Test is Enabled: **P0606 Program Sequence Watch Enable f(CPU#, loop time or event)** (If 0, this test is disabled)	Fail Table, f(Loop Time). See supporting tables: **P0606_PSW Sequence Fail f (Loop Time)** / Sample Table, f (Loop Time)See supporting tables: **P0606_PSW Sequence Sample f(Loop Time)**	

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
							counts 50 ms/count in the ECM main processor	
			MAIN processor determines a seed has not changed within a specified time period within the 50ms task.	Previous seed value equals current seed value.		Test is Enabled: 1 (If 0, this test is disabled)	Table, f(Loop Time). See supporting tables: **P0606_Last Seed Timeout f (Loop Time)**	

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Internal Processor Integrity Performance	P0607	Indicates that the controller has detected an internal processor integrity performance.	Performs the failure diagnostic for the offline and online BIST results.		calibration enable	= 1 Boolean	5 counts background task/ count in the ECM main processor	Type A, 1 Trips
			Checks for ECC (error correcting code) circuit test errors reported by the hardware for flash memory. Increments counter during controller initialization if ECC error occured since last controller initialization. Counter >=	3 (results in MIL), 5 (results in MIL and remedial action)	calibration enable	= 1 Boolean	variable, depends on length of time to access flash with corrupted memory	
			Checks for ECC (error correcting code) circuit test errors reported by the hardware for RAM memory circuit. Increments counter during controller initialization if ECC error occured since last controller initialization. Counter >=	3 (results in MIL), 5 (results in MIL and remedial action)	calibration enable	= 1 Boolean	variable, depends on length of time to write flash to RAMvariable, depends on length of time to write flash to RAM	

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Powertrain Internal Control Module EEPROM Error	P062F	This DTC detects a NVM long term performance. There are two types of diagnostics that run during controller power up. One for HWIO reports that writing to NVM (at shutdown) will not succeed, and the other HWIO reports the assembly calibration integrity check has failed.	HWIO reports that writing to NVM (at shutdown) will not succeed				Diagnostic runs at controller power up.	Type A, 1 Trips
			HWIO reports the assembly calibration integrity check has failed				Diagnostic runs at controller power up.	

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Actuator Supply Voltage Circuit Low	P0658	Controller specific output driver circuit diagnoses the high sided driver circuit for a short to ground failure, or where controller H/W cannot differentiate, diagnoses the high sided driver circuit for a short to ground failure or open circuit failure, when the output is powered on, by comparing a voltage measurement to controller specific voltage thresholds.	Voltage measurement outside of controller specific acceptable range during driver on state indicates short to ground failure. Controller specific output driver circuit voltage thresholds are set to meet the following controller specification for a short to ground or an open circuit.	≤ 0.5 Ω impedance between signal and controller ground OR ≥ 200 K Ω impedance between signal and controller ground When malfunction criteria threshold is met, increment fail count and increment sample count, otherwise increment only sample count	(ground short diagnostic monitor enable calibration OR open circuit diagnostic monitor enable calibration) high side drive ON service mode $04 active	= 1 Boolean = 1 Boolean = TRUE = FALSE	ground short fail count ≥ 6 counts within sample count of 2,400 counts OR open circuit fail count ≥ 6 counts within sample count of 2,400 counts 6.25 millisecond update rate	Type A, 1 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Transmission Fluid Temperature (TFT) Sensor Performance	P0711	The diagnostic monitor will verify the time to transmission fluid temperature warm up based on the raw transmission fluid temperature sesnor, any intermittent signal that causes multiple unrealistic delta changes (intermittent faults) based on the raw transmission fluid temperature sesnor, and, raw transmission fluid temperature sesnor signal stuck in valid range.	raw transmission fluid temperature and the transmission fluid temperature warm up time has elapsed	≤ 15.0 °C			transmission fluid temperature warm up time ≥ **transmission fluid temperature warm up time** seconds	Type B, 2 Trips
					diagnsotic monitor enable	= 1 Boolean		
					P0712 NOT fault active			
					P0713 NOT fault active			
					battery voltage	≥ 9.00 volts	battery voltage time ≥ 0.100 seconds	
					run crank voltage	≥ 9.00 volts	run crank voltage time ≥ 0.100 seconds	
					warm up test enable	= 1 Boolean		
					TFT rationality diagnostic monitor enabled	= VeTFSR_b_TFT_RatlEnbl		
					driver accelerator pdeal position	≥ 5.0 %		
					engine torque	≥ 50.0 Nm		
					engine speed	≥ 500.0 RPM		
					vehicle speed	≥ 10.0 KPH		
					engine coolant temperature	≥ -40.0 °C		
					engine coolant temperature	≤ 150.0 °C		
					raw transmission fluid temperature	≥ -40.0 °C		
					raw transmission fluid temperature	≤ 150.0 °C		
					P2818 fault active	= FALSE		
					P2818 test fail this key on	= FALSE		
					DTCs not fault active			

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
						EngineTorqueEstInaccurate AcceleratorPedalFailure CrankSensor_FA ECT_Sensor_FA VehicleSpeedSensor_FA		
			current transmission fluid temperature string length = previous transmission fluid temperature transmission temperature string length + (raw transmission fluid temperature - previous raw transmission fluid temperature, update rate 100 milliseconds, increment sample count	≥ 80.0 °C			sample count ≥ 10 counts evaluate fail temperature threshold, 100 millisecond update rate, if transmission fluid temperature string length above fail threshold increment fail time fail time ≥ 8.0 seconds out of sample time ≥ 12.0 seconds	
					diagnsotic monitor enable P0712 NOT fault active P0713 NOT fault active battery voltage	= 1 Boolean ≥ 9.00 volts	 battery voltage time ≥ 0.100 seconds	
					run crank voltage	≥ 9.00 volts	run crank voltage time ≥ 0.100 seconds	
					intermittent test enable propulsion system active	= 1 Boolean = TRUE		
			raw transmission fluid temperature - previous	≤ 0.0000 °C			fail time ≥ 600.0 seconds	

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
			raw transmission fluid temperature, update rate 100 milliseconds, update fail time		diagnsotic monitor enable P0712 NOT fault active P0713 NOT fault active battery voltage	= 1 Boolean ≥ 9.00 volts	 battery voltage time ≥ 0.100 seconds	
					run crank voltage	≥ 9.00 volts	run crank voltage time ≥ 0.100 seconds	
					stuck in range test enable propulsion system active raw transmission fluid temperature raw transmission fluid temperature	= 1 Boolean = TRUE ≥ -40.0 °C ≤ 150.0 °C		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Transmission Fluid Temperature Sensor Circuit Low Voltage	P0712	Controller specific analog circuit diagnoses the transmission fluid temperature sensor and wiring for a short to ground fault by comparing a voltage measurement to controller specific voltage thresholds, converted to a resistance value.	circuit resistance update fail time 1 seconds update rate	≤ 13.000 Ω			fail time ≥ 5.00 seconds out of sample time ≥ 6.00 seconds 1 seconds update rate	Type B, 2 Trips
					diagnostic monitor enable	= 1 Boolean	battery voltage in range time ≥ 0.100 seconds	
					battery voltage	≥ 9.00 volts		
					run crank voltage	≥ 9.00 volts	run crank voltage in range time ≥ 0.100 seconds	
					run crank voltage in range time			

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Transmission Fluid Temperature Sensor Circuit Low Voltage	P0713	Controller specific analog circuit diagnoses the transmission fluid temperature sensor and wiring for an open circuit or short to voltage failure by comparing a voltage measurement to controller specific voltage thresholds, converted to a resistance value.	circuit resistance update fail time 1 seconds update rate	≥ 206,875.0 Ω			fail time ≥ 5.00 seconds out of fail time ≥ 6.00 seconds 1 seconds update rate	Type B, 2 Trips
					diagnostic monitor enable	= 1 Boolean	battery voltage in range time ≥ 0.100 seconds	
					battery voltage	≥ 9.00 volts		
							run crank voltage in range time ≥ 0.100 seconds	
					run crank voltage run crank voltage in range time	≥ 9.00 volts		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Input Speed Sensor Performance	P0716	Detects unrealistic drop in raw transmission input speed signal RPM. Drop events are counted up to fail threshold. A drop event is defined by a sudden delta change in RPM from one value to a lower value. The raw transmission input speed must achieve a value high enough to record an unrealistic drop sample to sample. Once the drop threshold is met, fail time is accumualted indicating the raw transmission input speed has not recovered above a threshold, allowing the fail event count to increment. Multiple fail event counts must occur, but if the signal remains low, no further deltas occur, the "Input Speed Sensor Circuit Low Voltage" DTC will set before P0716, as P0716 is designed to set based on an intermittent raw transmission input speed signal RPM.	delta raw transmission input speed delta raw transmission input speed = raw transmission input speed - last valid raw transmission input speed, 25 millisecond update rate	≥ 2,000.0 RPM	service mode $04 active diagnostic monitor enable P0717 test fail this key on P07BF test fail this key on P07C0 test fail this key on High Side Driver 1 and 2 Run Crank Voltage Service Fast Learn Run Crank Active last valid raw transmission input speed OR valid raw transmission input speed (before drop event) ***************************** Stability Criteria last valid raw transmission input speed updates very 25 milliseconds when stablity time complete as long as (delta delta raw transmission input speed AND raw transmission input	= FALSE = 1 Boolean (0 is disable, 1 is enable) = FALSE = FALSE = FALSE = TRUE ≥ 9.0 Volts = FALSE = TRUE ≥ 240.0 RPM ≥ 240.0 RPM ***************************** ≤ 320.0 RPM > 200.0 RPM	fail time ≥ 1.500 seconds updated fail event count, fail event count ≥ 5 counts, 25 millisecond update rate raw transmission input speed time ≥ 2.000 seconds stability time ≥ 0.100 seconds	Type A, 1 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					speed)			
					raw transmission output speed	≥ 377.0 RPM		
					accelerator pedal position	≥ 5.0 %		
					engine torque	≤ 8,191.9 Nm		
					engine torque	≥ 30.0 Nm		
					hydraulic system pressure available	= TRUE		
					DTCs not fault active	AcceleratorPedalFailure EngineTorqueEstInaccurate		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Input Speed Sensor Circuit Low Voltage	P0717	Detects no activity in raw transmission input speed signal RPM due to open ciruit electrical failure mode or sensor internal faults, or, controller internal failure modes. The raw transmission input speed signal RPM is rationalized against vehicle conditions in which the the powertrain is producing torque available at the drive wheels, but raw transmission input speed signal RPM remains low. After a sudden drop in raw transmission input speed signal RPM, a race condition can occur between P0717 and "Input Speed Sensor Performance" depending on the true nature of the failure.	raw transmission input speed OR TISS/TOSS fault (single power supply to TISS and TOSS) = TRUE, update fail time 25 millisecond update rate	≤ 168.0 RPM < 175.0 RPM	service mode $04 active diagnostic monitor enable run crank active service fast learn active run crank voltage hydraulic pressure avail P0722 fault active P0723 fault active P077C fault active P077D fault active brake pedal position P0716 test fail this key on P07BF test fail this key on P07C0 test fail this key on accelerator pedal position engine torque engine torque AND ****************************** (transmission current attained gear transmission current attained gear raw transmission output speed OR transmission current attained gear transmission current attained gear raw transmission output speed)	= FALSE = 1 Boolean (0 is disable, 1 is enable) = TRUE = FALSE ≥ 9.0 volts = TRUE = FALSE = FALSE = FALSE = FALSE < 70.0 % = FALSE = FALSE = FALSE ≥ 5.0 % ≥ 30.0 Nm ≤ 8,191.9 Nm ****************************** ≤ CeCGSR_e_CR_Fourth ≥ CeCGSR_e_CR_First ≥ 250.0 RPM ≤ CeCGSR_e_CR_Tenth ≥ CeCGSR_e_CR_Fourth ≥ 377.0 RPM	fail time ≥ 4.00 seconds run crank voltage time ≥ 25 milliseconds	Type A, 1 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					*****************************	*****************************		
					AND			
					(P0717 fault active	= FALSE		
					OR			
					P0717 test fail this key on)	= FALSE		
					*****************************	*****************************		
					TISS/TOSS fault (single power supply to TISS and TOSS) = TRUE occurs when:			
					(P0722 fail time high gear exceeds fail threshold	≥ 4.00 s		
					OR			
					P0722 fail time low gear exceeds fail threshold)	≥ 3.00 s		
					AND			
					TISS/TOSS has single power supply calibration	= 0 Boolean		
					TISS/TOSS single power supply test enabled	= 1 Boolean		
					Raw Input Speed	< 175.00 rpm		
					DTCs not fault active	EngineTorqueEstInaccurate		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Output Speed Sensor Performance	P0721	The diagnostic monitor determines if the direction TOSS value is coherent based on the on period time of the directional sensor and TOSS raw. When the on period time indicates a transitional state, the direction must also be transitional as measured by very slow TOSS raw RPM. When the on period time indicates a non-transitional state, forward or reverse, the direction must also be transition, not forward and not reverse.	TOSS raw direction when TOSS transitional period = FALSE AND (TOSS raw direction when TOSS transitional period = FALSE OR TOSS raw when TOSS transitional period = TRUE) update fail and sample time 6.25 ms update rate	≠ FORWARD ≠ REVERSE ≥ 225.0 RPM	service mode $04 active diagnostic monitor enable TOSS count sample period (P0721 fault active OR P0721 test fail this key on) senor type is directional senor type cailbration ****************************** TOSS transitional period detected = FALSE when: (on period OR on period when direction unknown OR on period AND on period when direction is reverse OR on period AND on period when direction is forward) TOSS transitional period detected = TRUE when: on period AND	= FALSE = 1 Boolean ≠ 0 counts = FALSE = FALSE = CeTOSR_e_Directional ****************************** ≥ 0.4434 seconds ≤ 0.2773 seconds < 0.2363 seconds > 0.1240 seconds < 0.0811 seconds > 0.0088 seconds < 0.4434 seconds > 0.2773 seconds	fail time ≥ 3.500 seconds out of sample time ≥ 5.000 seconds	Type A, 1 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					on period when direction unknown			

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Output Speed Sensor Circuit Low Voltage	P0722	Detects no activity in raw transmission output speed signal RPM due to open ciruit electrical failure mode or sensor internal faults, or, controller internal failure modes. The raw transmission output speed signal RPM is rationalized against vehicle conditions in which the the powertrain is producing torque, but raw transmission output speed signal RPM remains low. After a sudden drop in raw transmission output speed signal RPM, a race condition can occur between P0722 and "Output Speed Sensor Circuit Intermittent" depending on the true nature of the failure.	raw transmission output speed, update fail time 6.25 millisecond update rate	≤ 30.0 RPM			fail time ≥ 4.00 seconds high gear OR fail time ≥ 3.00 seconds low gear	Type A, 1 Trips
			use high gear fail time threshold when: (attained gear	≥ CeCGSR_e_CR_First	service mode $04 active	= FALSE		
					diagnostic monitor enable	= 1 Boolean		
			attained gear	≤ CeCGSR_e_CR_Tenth	*****************************	*****************************		
			attained gear)	> CeCGSR_e_CR_Fourth	when neutral range or shift occurs:			
					(Intrusive Shift Active	= TRUE		
			ELSE use low gear fail time threshold		OR (garage shift	≠ COMPLETE		
					AND Locked to Freewheel	= FALSE		
					AND Freewheel to Locked)	= FALSE		
					OR PRNDL	= PARK		
					OR PRNDL	= NEUTRAL		
					OR range inhibit state)	≠ no inhibit active		
					AND (engine torque	≥ 8,192.0 Nm		
					accelerator pedal position)	≥ 100.0 %		
					when not neutral range occurs:			
					attained gear	≥ CeCGSR_e_CR_First		
					attained gear	≤ CeCGSR_e_CR_Tenth		
					(attained gear	> CeCGSR_e_CR_Fourth		
					engine torque	≥ 30.0 Nm		
					accelerator pedal	≥ 3.0 %		
					(TCC slip	> 100.00 rpm		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					OR			
					TCC mode))	≠ Off Mode		
					when not neutral range occurs:			
					(attained gear	≤ CeCGSR_e_CR_Fourth		
					engine torque	≥ 50.0 Nm		
					accelerator pedal	≥ 3.5 %		
					(TCC slip	> 100.00 rpm		
					OR			
					TCC mode))	≠ Off Mode		
					******************************	******************************		
					(TISS	≤ 8,191.9 RPM		
					AND			
					TISS)	≥ 175.0 RPM		
					OR			
					(Engine Speed	≤ 8,191.9 RPM		
					AND			
					Engine Speed)	≥ 3,500.0 RPM		
					******************************	******************************		
					P0716 test fail this key on	= FALSE		
					P0717 test fail this key on	= FALSE		
					P07BF test fail this key on	= FALSE		
					P07C0 test fail this key on	= FALSE		
					PTO check:			
					PTO enable calibration is FALSE	= 1 Boolean		
					OR			
					(PTO enable calibration is TRUE	= 1 Boolean		
					AND			
					PTO active)	= FALSE		
					run crank voltage	≥ 5.00 volts	run crank voltage time ≥ 25 milliseconds	
					service fast learn active	= FALSE		
					run crank voltage	≥ 9.00 volts		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					transmission fluid temperature	≥ -40.00 °C		
					P0723 test fail this key on	= FALSE		
					P077C test fail this key on	= FALSE		
					P077D test fail this key on	= FALSE		
					(P0722 fault active	= FALSE		
					OR			
					P0722 test fail this key on)	= FALSE		
					(Hydraulic Pressure Avail	= TRUE	Pressure and Trans Engaged for delay time **P0722 OSS Direction Change Delay**	
					Trans Engaged State)	≠ NotEngaged		
					DTCs not fault active	AcceleratorPedalFailure EngineTorqueEstInaccurate		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Output Speed Sensor Circuit Intermittent	P0723	Detects unrealistic drop in raw transmission output speed signal RPM. Drop events are counted up to fail threshold. A drop event is defined by a sudden delta change in RPM from one value to a lower value. The raw transmission output speed must achieve a value high enough to record an unrealistic drop sample to sample. Once the drop threshold is met, fail time is accumualted indicating the raw transmission output speed has not recovered above a threshold, allowing the fail event count to increment. Multiple fail event counts must occur, but if the signal remains low, no further deltas occur, the "Output Speed Sensor Circuit Low Voltage" DTC will set before P0723, as P0723 is designed to set based on an intermittent raw transmission output speed signal RPM.	4WD low fail threshold: delta raw transmission output speed OR NOT 4WD low fail threshold, update fail time, delta raw transmission output speed = raw transmission output speed previous loop - raw transmission output speed, 25 millisecond update rate	≥ 1,755.0 RPM ≥ 650.0 RPM			fail time ≥ 1.500 seconds updated fail event count, fail event count ≥ 5 counts, 25 millisecond update rate	Type A, 1 Trips
					service mode $04 active	= FALSE		
					diagnostic monitor enable	= 1 Boolean		
					transmission engaged state	≠ not engaged	transmission engaged state time ≥ **P0723 transmission engaged state time threshold**	
					4WD low state	= 4WD low state previous loop, 25 millisecond update rate	4WD low change time ≥ 3.0 seconds	
					PTO check: PTO disable calibration is FALSE OR	≠ 1 Boolean		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					(PTO disable calibration is TRUE AND PTO active) run crank voltage service fast learn active run crank voltage P077C test fail this key on P077D test fail this key on ****************************** when PRNDL is moved to NEUTRAL allow transmission engaged state time before enabling fail evaluation, or, if raw transmission output speed is active in NEUTRAL enable fail evaluation: PRNDL OR PRNDL OR PRNDL OR raw transmission output speed OR last valid raw transmission output speed ****************************** determine if raw transmission input speed is stable:	= 1 Boolean = FALSE ≥ 5.00 volts = FALSE ≥ 9.00 volts = FALSE = FALSE ****************************** = CeTRGR_e_PRNDL_Neutral = CeTRGR_e_PRNDL_Transitional1 N-D transitional = CeTRGR_e_PRNDL_Transitional4 R-N transitional ≥ 250.0 RPM ≥ 250.0 RPM ******************************	 run crank voltage time ≥ 25 milliseconds	

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					(raw transmission input speed - raw transmission input speed previous, 25 millisecond update	≤ 4,095.9 RPM	raw transmission input speed stability time ≥ 2.00 seconds	
					AND			
					raw transmission input speed)	≥ 200.0 RPM		
					OR			
					(TISS/TOSS has single power supply calibration	= 0 Boolean	no time required	
					AND			
					raw transmission input speed)	= 0.0 RPM		
					******************************	******************************		
					select delta RPM fail theshold:			
					(4WD low state	= TRUE		
					AND 4WD low valid)	= TRUE		
					select P0723 4WD TOSS delta fail threshold otherwise use P0723 TOSS delta fail threshold			
					******************************	******************************		
					last valid raw transmission output speed	> 36.0 RPM	raw transmission output speed time ≥ 2.00 seconds	
					OR			
					valid raw transmission output speed (before drop event)	> 36.0 RPM		
					last valid raw transmission output speed updates every 25 milliseconds when stablity time complete as long as			
					(delta delta raw transmission output speed	≤ 140.0 RPM	stability time ≥ 0.100 seconds	
					AND			
					raw transmission output speed)	≥ 36.0 RPM		
					hydraulic pressure avail	= TRUE		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					**************************** PRNDL AND PRNDL AND **************************** ((PRNDL OR PRNDL OR PRNDL) AND (Output Speed raw transmission output speed - raw transmission output speed previous, 25 millisecond update)) OR **************************** (PRNDL AND PRNDL AND PRNDL)	**************************** ≠ ParkCeTRGR_e_PRNDL_Park ≠ CeTRGR_e_PRNDL_Transitional2 **************************** = CeTRGR_e_PRNDL_Neutral = CeTRGR_e_PRNDL_Transitional1 = CeTRGR_e_PRNDL_Transitional4 ≥ 50.00 RPM < 20.00 AND > -140.00 **************************** ≠ CeTRGR_e_PRNDL_Neutral ≠ CeTRGR_e_PRNDL_Transitional1 ≠ CeTRGR_e_PRNDL_Transitional4	Delta met time > 2.00	
					DTCs not fault active	AcceleratorPedalFailure EngineTorqueEstInaccurate		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Torque Converter Clutch (TCC) System Performance - GR10 specific	P0741	The GR10 diagnostic monitor detects the transmission torque converter control valve failed hydraulically on. The torque converter hydraulic control circuit is multiplexed with the transmission clutch select valve hydraulic control circuit, allowing for the torque converter control valve stuck on test to execute when the clutch select valve solenoid is commanded ON. When the clutch select valve solenoid is commanded ON as the vehicle speed decreases toward zero KPH, and, if the torque converter control valve is stuck on, the torque converter slip speed rate of change will have a large slope while decreasing toward zero RPM, and the torque converter slip speed will remain low near zero RPM.	calculated transmission torque converter K factor = engine speed / SQR (engine torque) increment fail count 25 millisecond update rate	> **P0741 GR10 torque converter K factor fail limit** see supporting table			fail count ≥ 4 counts in 100 count sample 25 millisecond update rate	Type A, 1 Trips
					diagnostic monitor enable	= 1 Boolean		
					(TCC stuck off enable	= 1 Boolean		
					OR			
					TCC stuck on enable)	= 1 Boolean		
					hydraulic pressure available:			
					engine speed	≥ 500.0 RPM	engine speed time ≥ **engine speed time for transmission hydraulic pressure available** see supporting table	
					battery voltage	≥ 9.00 volts	battery voltage time ≥ 0.100 seconds	
					run crank voltage	≥ 9.00 volts	run crank voltage time ≥ 0.100 seconds	
					P281B falut active	= FALSE		
					P281D falut active	= FALSE		
					P281E falut active	= FALSE		
					P0722 fault pending	= FALSE		
					P0723 fault pending	= FALSE		
					PRNDL	≠ PARK		
					PRNDL	≠ NEUTRAL		
					transmission fluid temperature	≥ -6.66 °C		
					transmission fluid temperature	≤ 130.0 °C		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					engine speed	≥ 1,500.0 RPM		
					intrusive shift active (intrusive shift due to fault maturing for clutch pressure control solenoid stuck off/on P0746, P0747, P0776, P0777, P0796, P0797, P2714, P2715, P2723, P2724, P2732, P2733, P2820, P2821)	= FALSE		
					P0741 test fail this key on	= FALSE		
					range shift state	= range shift complete (steagy state gear)		
					attained gear slip	≤ 75.0 RPM		
					engine torque	≥ 5.00 Nm		
					accelerator pedal position	≥ 0.00 %		
					accelerator pedal position	≤ 100.0 %		
					transmission torque converter speed ratio (transmission turbine shaft speed / engine speed)	≤ 0.950		
					DTCs not fault active	AcceleratorPedalFailure EngineTorqueEstInaccurate CrankSensor_FA P0716, P0717, P07BF, P07C0 P0722, P0723, P077C, P077D		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Pressure Control (PC) Solenoid A Stuck Off (GR10)	P0746	Each pressure control solenoid stuck off diagnostic monitor detects a clutch pressure control solenoid failed hydraulically off, while the solenoid is electrically functional. In the failure mode the clutch slip speed, and gear box gear slip, will be excessive, not near or at zero RPM. The clutch slip speed is calculated based on the transmission lever node design, requiring transmission input shaft speed, transmission output shaft speed, and, one transmission intermediate shaft speed. The clutch pressure control solenoid is tested after an automatic transmission shift occurs and has been considered shift complete, or, steady state gear is deemed active, range shift complete. When the automatic transmission shift is complete, steady state gear is considered, the clutch pressure control solenoid is mapped to transmission line	C1 clutch slip speed, update fail time 6.25 milliscond update	≥ 200.0 RPM			fail time ≥ 1.00 seconds, update fail count, fail count ≥ 3 counts 6.25 milliscond update	Type A, 1 Trips
					******************************	******************************		
					system-level enables:			
					use battery voltage calibration is FALSE OR	= 1 Boolean		
					(use battery voltage calibration is TRUE AND	= 1 Boolean		
					battery voltage)	≥ 9.00 volts	battery voltage time ≥ 0.100 seconds	
					use run crank voltage calibration is FALSE OR	= 0 Boolean		
					(use run crank voltage calibration is TRUE AND	= 0 Boolean		
					run crank voltage)	≥ 9.00 volts	run crank voltage time ≥ 0.100 seconds	
					TCM output driver high side driver 1, clutch pressure control solenoid driver circuit enabled	= TRUE Boolean		
					TCM output driver high side driver 2, clutch pressure control solenoid driver circuit enabled	= TRUE Boolean		
					service fast learn active	= FALSE Boolean		
					service solenoid cleaning			

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
		pressure control, which normally allows the clutch to maintain full torque holding capacity at the given engine crankshaft torque, to maintain true gear ratio. When the clutch pressure control solenoid is failed hydraulically off, the clutch does not maintain holding capacity at any engine crankshaft torque, and the clutch slip speed is uncontrollable. The clutch pressure control solenoid test is suspended if the higher level safety startle mitigation function is active. The safety startle mitigation function is triggered when a sudden vehicle deceleration occurs due to a clutch pressure control solenoid that has failed in the opposite sense, clutch pressure control solenoid failed hydraulically on, while the solenoid is electrically functional, which must take priority over any clutch pressure control solenoid stuck off diagnostic monitor. All clutch pressure control			procedure active hydraulic pressure available hydraulic line pressure **************************** enable C1 clutch slip speed fail compare when: ((startle mitigation active OR (startle mitigation active AND startle mitigation gear)) (see startle mitigation active NOTE below) unintended deceleration fault pending OR unintended deceleration fault pending enable cal is FALSE (startle mitigation) clutch steady state adaptive active (transmission output shaft speed OR (accelerator pedal position OR engine speed) C1 clutch slip speed valid	= FALSE Boolean = TRUE ≥ -999.00 kPa **************************** = FALSE = TRUE ≠ initial startle mitigation gear = FALSE = 0 (0 to enable, 1 to disable) = FALSE ≥ 36.0 RPM ≥ 0.50 % ≥ 1,000.0 RPM = TRUE (all speed sensors are functional for lever node clutch slip	≥ 1.000 seconds	

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
		solenoid stuck on/off diagnostic monitors are emission MIL DTCs. System voltage must be normal, all clutch pressure control solenoid driver circuits must be functional, no clutch pressure control solenoid electrical or performance faults can be present, and no speed sensor electrical or performance faults can be present, or the clutch pressure control solenoid stuck off test is disabled. This diagnostic monitor is relative to C1 (GR10 CB123456R) clutch pressure control solenoid.			 C1 clutch pressured map (enable forward gear cal AND driver direction request AND Attained Gear) OR (enable reverse gear cal AND driver direction request AND Attained Gear) range shift state ****************************** DTCs not fault pending DTCs not fault active	speed calculation) = mapped to line pressure, C1 clutch pressure has reached fully applied state = 1 (1 to enable, 0 to disable) = FORWARD = a FORWARD gear = 0 (1 to enable, 0 to disable) = REVERSE = REVERSE = range shift complete ****************************** P17CE P1783 P178F P17C6 P17C4 P17C7 P17D3 P17C5 P0721 P172A P172B P0716 P0717 P07C0 P07BF P0723 P0722 P077D P077C P176C P176D P176B P17D6 P2534 P0707 P0708 P0716 P0717 P07C0 P07BF P077D P077C P126C P176D P17CC P17CD P0962 P0966 P0970 P2720 P2729 P2738 P0963 P0967 P0971 P2721 P2730 P2739 P0960 P0964 P0968 P2718 P2727 P2736 P17CE P1783		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
						P17D3 P17C5 P0721 AcceleratorPedalFailure CrankSensor_FA		
					DTCs not test fail this key on	P0707 P0708 P0723 P0722 P176B P17D6 P0747 P0777 P0797 P2715 P2724 P2733 P0746 P0776 P0796 P2714 P2723 P2732 P2821 P2820 P178F P17C6 P17C4 P17C7 P172A P172B		
					NOTE: startle mitigation active is used to detect unintended deceleration due to clutch pressure control solenoid stuck on failure modes, the clutch pressure control solenoid stuck on DTCs being P0747 P0777 P0797 P2715 P2724 P2733 P2821			

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Pressure Control (PC) Solenoid A Stuck On	P0747	Each pressure control solenoid stuck on diagnostic monitor detects a clutch pressure control solenoid failed hydraulically on, while the solenoid is electrically functional. The clutch pressure control solenoid is tested during an automatic transmission shift by monitoring the off going clutch slip speed. With the clutch pressure control solenoid failed on, still allowing hydraulic pressure to the clutch being commanded off, the intended off going clutch continues to maintain torque capacity during the transmission automatic shift. In the failure mode, the off going clutch slip speed will remain near zero RPM when the clutch pressure control solenoid is commanded to an off pressure in the normal operation to release the holding clutch. The clutch slip speed is calculated based on the transmission lever node design, requiring	shift type is power down shift: C1 clutch slip speed OR shift type is garage shift: C1 clutch slip speed ELSE shift is another type: C1 clutch slip speed update fail time 6.25 milliscond update	 < 50.0 RPM < 100.00 RPM < 50.0 RPM			Base fail time: shift type is power down shift: fail time ≥ 0.60 seconds shift type is garage shift: fail time ≥ 0.25 shift type is another type: fail time ≥ 0.150 seconds Add fail time offset according to shift type: open throttle upshift: **Clutch Stuck On Fail Offset Time PU Shifts** open throttle downshift: **Clutch Stuck On Fail Offset Time PD Shifts** garage shift: **Clutch Stuck On Fail Offset Time GS Shifts** closed throttle downshift:	Type A, 1 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
		transmission input shaft speed, transmission output shaft speed, and, one transmission intermediate shaft speed. As part of the pressure control solenoid stuck on diagnostic monitor, the safety startle mitigation function executes when in steady state gear, no automatic transmission shift in progress. The safety startle mitigation function is triggered when a sudden vehicle deceleration occurs due to a clutch pressure control solenoid that has failed					**Clutch Stuck On Fail Offset Time CD Shifts** negative torque upshift: **Clutch Clip Press NU Shifts** clutch staging shift: **Clutch Stuck On Fail Offset Time STGR Shifts** update fail count, fail count ≥ 3 counts 6.25 milliscond update	
		hydraulically on, while the solenoid is electrically functional.			****************************** system-level enables:	******************************		
		All clutch pressure control solenoid stuck on diagnostic monitors are emission MIL DTCs. System voltage must be normal, all			use battery voltage calibration is FALSE OR (use battery voltage calibration is TRUE AND battery voltage)	= 1 Boolean = 1 Boolean ≥ 9.00 volts	battery voltage time ≥ 0.100 seconds	
		clutch pressure control solenoid driver circuits must be functional, no clutch pressure control solenoid electrical or performance faults can be present, and no speed sensor electrical or performance faults can be present, or the clutch pressure control solenoid stuck on test			use run crank voltage calibration is FALSE OR (use run crank voltage calibration is TRUE AND run crank voltage)	= 0 Boolean = 0 Boolean ≥ 9.00 volts	run crank voltage time ≥ 0.100 seconds	

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
		is disabled. This diagnostic monitor is relative to the GR10 C1 CB123456R clutch pressure control solenoid.			TCM output driver high side driver 1, clutch pressure control solenoid driver circuit enabled	= TRUE Boolean		
					TCM output driver high side driver 2, clutch pressure control solenoid driver circuit enabled	= TRUE Boolean		
					service fast learn active	= FALSE Boolean		
					service solenoid cleaning procedure active	= FALSE Boolean		
					hydraulic pressure available	= TRUE		
					hydraulic pressure ****************************	≥ -999 kPa *****************************		
					range shift state	≠ range shift complete		
					diagnostic clutch test	= OFF GOING CLUTCH TEST		
					transmission output shaft speed	≥ 36.0 RPM		
					((C1 off going clutch pressure control ramp time out complete	= TRUE		
					AND off going clutch pressure ramp control ramp time out enable)	= 1 (1 to enable, 0 to disable)		
					OR			
					C1 off going clutch command pressure)	≤ 350.0 kPa	exhaust delay by shift type:	

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
							closed throttle upshift: **C1 exhaust delay closed throttle lift foot up shift** open throttle upshift: **C1 exhaust delay open throttle power on up shift** garage shifts: **C1 exhaust delay garage shift** closed throttle downshift: **C1 exhaust delay closed throttle down shift** negative torque upshift: **C1 exhaust delay negative torque up shift** open throttle downshift: **C1 exhaust delay open throttle power down shift**	
					(engine torque AND Primary oncoming stuck	≥ 8,191.8 Nm = 0 (0 is enable, 1 is		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					on torque enable cal)	enable)		
					OR			
					(primary oncoming clutch active	= TRUE		
					primary on coming control state	≠ clutch fill phase		
					primary on coming commanded pressure)	≥ pressure clip threshold according to shift type:		
						closed and open throttle upshifts: pressure clip threshold is dependent on the oncoming clutch:	Post-torque phase delay for powered upshifts is dependent on the oncoming clutch:	
						C2 Torque-Based Pressure Clip OR **C3 Torque-Based Pressure Clip** OR **C4 Torque-Based Pressure Clip** OR **C5 Torque-Based Pressure Clip** OR **C6 Torque-Based Pressure Clip**	**C2_Oncoming Post-Torque Phase Delay** OR **C3_Oncoming Post-Torque Phase Delay** OR **C4_Oncoming Post-Torque Phase Delay** OR **C5_Oncoming Post-Torque Phase Delay** OR **C6_Oncoming Post-Torque Phase Delay**	
						clip thresholds for all other shift types:		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
						garage shifts: **Clutch Clip Press GS Shifts** closed throttle downshift: **Clutch Clip Press CD Shifts** negative torque upshift: **Clutch Clip Press NU Shifts** open throttle downshift: **Clutch Clip Press PD Shifts**		
					C1 clutch slip speed valid, all speed sensors are functional for lever node clucth slip speed calculation	= TRUE		
					******************************	******************************		
					conditions needed to trigger test:			
					(current shift type AND shift type enable cal for current shift type) OR	≠ Garage shift **Clutch Stuck On Shift** = **Type Enable** (0 table value will disable, 1 will enable)		
					(Intrusive shift active AND shift type enable cal for garage shift AND Attained Gear AND (stuck on enable cal for forward garge shifts	= FALSE = 1 (0 will enable, 1 will enable) = NEUTRAL OR commanded gear = 1 (0 to disable, 1 to		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					AND driver requested direction AND commanded gear) OR (stuck on enable cal for reverse garage shifts AND driver requested direction AND commanded gear)) clutch stuck off intrusive shift active startle mitigation active (see note on startle mitigation below) (new clutch controller has been initalized OR transitioning to a different clutch controller) current clutch solenoid test state ****************************** DTCs not fault pending DTCs not fault active	enable) = FORWARD = a FORWARD gear = 1 (0 to disable, 1 to enable) = REVERSE = REVERSE = FALSE = FALSE = TRUE = TRUE transitions to TestState or TUT_HOLD (see note below about state transitions) ****************************** P17CE P1783 P178F P17C6 P17C4 P17C7 P17D3 P17C5 P0721 P172A P172B P0716 P0717 P07C0 P07BF P0723 P0722 P077D P077C P176C P176D P176B P17D6 P2534 P0707 P0708		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
						P0716 P0717 P07C0 P07BF P077D P077C P126C P176D P17CC P17CD P0962 P0966 P0970 P2720 P2729 P2738 P0963 P0967 P0971 P2721 P2730 P2739 P0960 P0964 P0968 P2718 P2727 P2736 P17CE P1783 P17D3 P17C5 P0721 AcceleratorPedalFailure CrankSensor_FA		
					DTCs not test fail this key on	P0707 P0708 P0723 P0722 P176B P17D6 P0747 P0777 P0797 P2715 P2724 P2733 P0746 P0776 P0796 P2714 P2723 P2732 P2821 P2820 P178F P17C6 P17C4 P17C7 P172A P172B		
					*****************************	*****************************		
					NOTE: Clutch control solenoid test state TIE UP TEST HOLD is necessary, as it is possible to have multiple off going clutches during one automatic transmission shift. Clutch control solenoid test state is set to TIE UP TEST HOLD during an automatic transmission shift due to two conditions: Current value of clutch control solenoid test state			

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					is TIE UP TEST TEST STATE, when one off going clutch pressure control solenoid stuck on diagnostic monitor is currently executing. AND That off going clutch pressure control solenoid stuck on diagnostic monitor currently executing passes, the corresponding clutch slip speed ≥ clutch slip speed fail threshold. Once clutch control solenoid test state is set to TIE UP TEST HOLD, it remains TIE UP TEST HOLD during the automatic transmission shift, until: An additional off going clutch occurs, as indicated by solenoid stuck on test trigger = TRUE, subsequently clutch control solenoid test state is reset to TIE UP TEST TEST STATE, to allow the additional corresponding off going clutch pressure control solenoid stuck on diagnostic monitor to execute. OR The automatic transmission shift completes, range shift state = range shift complete.			

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					NOTE: Startle mitigation is used to detect unintended vehicle deceleration due to a clutch pressure control solenoid stuck on failure mode that occurs during steady state gear, not during an automatic transmission shift. The startle mitigation active then forces the transmission clutch pressure control system to a safe gear or neutral state, based on the active and inactive clutches, when the unintended vehicle deceleration occurred. Once a safe vehicle gear state is attained, the gear and clutch pressure control system allows transitions of the clutches on and off, to sequence automatic transmission shifts, single step shifts. As each single step automatic transmission shift occurs the normal pressure control solenoid stuck on diagnostic monitors execute to verify which clutch pressure control solenoid is in the stuck on failure mode, allowing one of the clutch pressure control solenoid stuck on DTCs to set P0747,			

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					P0777, P0797, P2715, P2724, P2733, P2821.			

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Pressure Control (PC) Solenoid B Stuck Off (GR10)	P0776	Each pressure control solenoid stuck off diagnostic monitor detects a clutch pressure control solenoid failed hydraulically off, while the solenoid is electrically functional. In the failure mode the clutch slip speed, and gear box gear slip, will be excessive, not near or at zero RPM. The clutch slip speed is calculated based on the transmission lever node design, requiring transmission input shaft speed, transmission output shaft speed, and, one transmission intermediate shaft speed. The clutch pressure control solenoid is tested after an automatic transmission shift occurs and has been considered shift complete, or, steady state gear is deemed active, range shift complete. When the automatic transmission shift is complete, steady state gear is considered, the clutch pressure control solenoid is mapped to transmission line	C2 clutch slip speed, update fail time 6.25 milliscond update	≥ 200.0 RPM			fail time ≥ 1.00 seconds, update fail count, fail count ≥ 3 counts 6.25 milliscond update	Type A, 1 Trips
					******************************	******************************		
					system-level enables:			
					use battery voltage calibration is FALSE OR	= 1 Boolean		
					(use battery voltage calibration is TRUE AND	= 1 Boolean		
					battery voltage)	≥ 9.00 volts	battery voltage time ≥ 0.100 seconds	
					use run crank voltage calibration is FALSE OR	= 0 Boolean		
					(use run crank voltage calibration is TRUE AND	= 0 Boolean		
					run crank voltage)	≥ 9.00 volts	run crank voltage time ≥ 0.100 seconds	
					TCM output driver high side driver 1, clutch pressure control solenoid driver circuit enabled	= TRUE Boolean		
					TCM output driver high side driver 2, clutch pressure control solenoid driver circuit enabled	= TRUE Boolean		
					service fast learn active	= FALSE Boolean		
					service solenoid cleaning			

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
		pressure control, which normally allows the clutch to maintain full torque holding capacity at the given engine crankshaft torque, to maintain true gear ratio. When the clutch pressure control solenoid is failed hydraulically off, the clutch does not maintain holding capacity at any engine crankshaft torque, and the clutch slip speed is uncontrollable. The clutch pressure control solenoid test is suspended if the higher level safety startle mitigation function is active. The safety startle mitigation function is triggered when a sudden vehicle deceleration occurs due to a clutch pressure control solenoid that has failed in the opposite sense, clutch pressure control solenoid failed hydraulically on, while the solenoid is electrically functional, which must take priority over any clutch pressure control solenoid stuck off diagnostic monitor. All clutch pressure control			procedure active hydraulic pressure available hydraulic line pressure **************************** enable C2 clutch slip speed fail compare when: ((startle mitigation active OR (startle mitigation active AND startle mitigation gear)) (see startle mitigation active NOTE below) unintended deceleration fault pending OR unintended deceleration fault pending enable cal is FALSE (startle mitigation) clutch steady state adaptive active (transmission output shaft speed OR (accelerator pedal position OR engine speed) C2 clutch slip speed valid	= FALSE Boolean = TRUE ≥ -999.00 kPa **************************** = FALSE = TRUE ≠ initial startle mitigation gear = FALSE = 0 (0 to enable, 1 to disable) = FALSE ≥ 36.0 RPM ≥ 0.50 % ≥ 1,000.0 RPM = TRUE (all speed sensors are functional for lever node clutch slip	≥ 1.000 seconds	

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
		solenoid stuck on/off diagnostic monitors are emission MIL DTCs. System voltage must be normal, all clutch pressure control solenoid driver circuits must be functional, no clutch pressure control solenoid electrical or performance faults can be present, and no speed sensor electrical or performance faults can be present, or the clutch pressure control solenoid stuck off test is disabled. This diagnostic monitor is relative to C2 (GR10 CB128910R) clutch pressure control solenoid.				speed calculation)		
					C2 clutch pressured map	= mapped to line pressure, C2 clutch pressure has reached fully applied state		
					(enable forward gear cal AND	= 1 (1 to enable, 0 to disable)		
					driver direction request AND	= FORWARD		
					Attained Gear)	= a FORWARD gear		
					OR			
					(enable reverse gear cal AND	= 0 (1 to enable, 0 to disable)		
					driver direction request AND	= REVERSE		
					Attained Gear)	= REVERSE		
					range shift state	= range shift complete		
					*****************************	*****************************		
					DTCs not fault pending	P17CE P1783 P178F P17C6 P17C4 P17C7 P17D3 P17C5 P0721 P172A P172B P0716 P0717 P07C0 P07BF P0723 P0722 P077D P077C P176C P176D P176B P17D6		
					DTCs not fault active	P2534 P0707 P0708 P0716 P0717 P07C0 P07BF P077D P077C P126C P176D P17CC P17CD P0962 P0966 P0970 P2720 P2729 P2738 P0963 P0967 P0971 P2721 P2730 P2739 P0960 P0964 P0968 P2718 P2727 P2736 P17CE P1783		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
						P17D3 P17C5 P0721 AcceleratorPedalFailure CrankSensor_FA		
					DTCs not test fail this key on	P0707 P0708 P0723 P0722 P176B P17D6 P0747 P0777 P0797 P2715 P2724 P2733 P0746 P0776 P0796 P2714 P2723 P2732 P2821 P2820 P178F P17C6 P17C4 P17C7 P172A P172B		
					NOTE: startle mitigation active is used to detect unintended deceleration due to clutch pressure control solenoid stuck on failure modes, the clutch pressure control solenoid stuck on DTCs being P0747 P0777 P0797 P2715 P2724 P2733 P2821			

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Pressure Control (PC) Solenoid B Stuck On	P0777	Each pressure control solenoid stuck on diagnostic monitor detects a clutch pressure control solenoid failed hydraulically on, while the solenoid is electrically functional. The clutch pressure control solenoid is tested during an automatic transmission shift by monitoring the off going clutch slip speed. With the clutch pressure control solenoid failed on, still allowing hydraulic pressure to the clutch being commanded off, the intended off going clutch continues to maintain torque capacity during the transmission automatic shift. In the failure mode, the off going clutch slip speed will remain near zero RPM when the clutch pressure control solenoid is commanded to an off pressure in the normal operation to release the holding clutch. The clutch slip speed is calculated based on the transmission lever node design, requiring	shift type is power down shift: C2 clutch slip speed OR shift type is garage shift: C2 clutch slip speed ELSE shift is another type: C2 clutch slip speed update fail time 6.25 milliscond update	 < 50.00 RPM < 100.00 RPM < 50.00 RPM			Base fail time: shift type is power down shift: fail time ≥ 0.60 seconds shift type is garage shift: fail time ≥ 0.25 shift type is another type: fail time ≥ 0.15 seconds Add fail time offset according to shift type: open throttle upshift: **Clutch Stuck On Fail Offset Time PU Shifts** open throttle downshift: **Clutch Stuck On Fail Offset Time PD Shifts** garage shift: **Clutch Stuck On Fail Offset Time GS Shifts** closed throttle downshift:	Type A, 1 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
		transmission input shaft speed, transmission output shaft speed, and, one transmission intermediate shaft speed. As part of the pressure control solenoid stuck on diagnostic monitor, the safety startle mitigation function executes when in steady state gear, no automatic transmission shift in progress. The safety startle mitigation function is triggered when a sudden vehicle deceleration occurs due to a clutch pressure control solenoid that has failed					**Clutch Stuck On Fail Offset Time CD Shifts** negative torque upshift: **Clutch Clip Press NU Shifts** clutch staging shift: **Clutch Stuck On Fail Offset Time STGR Shifts** update fail count, fail count ≥ 3 counts 6.25 milliscond update	
		hydraulically on, while the solenoid is electrically functional.			****************************** system-level enables:	******************************		
		All clutch pressure control solenoid stuck on diagnostic monitors are emission MIL			use battery voltage calibration is FALSE OR	= 1 Boolean		
		DTCs. System voltage must be normal, all			(use battery voltage calibration is TRUE AND	= 1 Boolean		
		clutch pressure control solenoid driver circuits must be functional, no			battery voltage)	≥ 9.00 volts	battery voltage time ≥ 0.100 seconds	
		clutch pressure control solenoid electrical or performance faults can			use run crank voltage calibration is FALSE OR	= 0 Boolean		
		be present, and no speed sensor electrical or performance faults			(use run crank voltage calibration is TRUE AND	= 0 Boolean		
		can be present, or the clutch pressure control solenoid stuck on test			run crank voltage)	≥ 9.00 volts	run crank voltage time ≥ 0.100 seconds	

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
		is disabled. This diagnostic monitor is relative to the GR10 C2 CB128910R clutch pressure control solenoid.			TCM output driver high side driver 1, clutch pressure control solenoid driver circuit enabled	= TRUE Boolean		
					TCM output driver high side driver 2, clutch pressure control solenoid driver circuit enabled	= TRUE Boolean		
					service fast learn active	= FALSE Boolean		
					service solenoid cleaning procedure active	= FALSE Boolean		
					hydraulic pressure available	= TRUE		
					hydraulic pressure ****************************	≥ -999 kPa *****************************		
					range shift state	≠ range shift complete		
					diagnostic clutch test	= OFF GOING CLUTCH TEST		
					transmission output shaft speed	≥ 36.0 RPM		
					((C2 off going clutch pressure control ramp time out complete AND off going clutch pressure ramp control ramp time out enable) OR C2 off going clutch command pressure)	= TRUE = 1 (1 to enable, 0 to disable) ≤ 350 kPa	exhaust delay by shift type:	

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 TEST GROUP: KGMXV04.2088 EMISSIONS STDS: CAL--ULEV125; FED--BIN125

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
							closed throttle upshift: **C2 exhaust delay open throttle power on up shift** open throttle upshift: **C2 exhaust delay open throttle power on up shift** garage shifts: **C2 exhaust delay garage shift** closed throttle downshift: **C2 exhaust delay closed throttle down shift** negative torque upshift: **C2 exhaust delay negative torque up shift** open throttle downshift: **C2 exhaust delay open throttle power down shift**	
					(engine torque AND Primary oncoming stuck on torque enable cal)	≥ 8,192 Nm = 0 (0 is enable, 1 is enable)		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					OR			
					(primary oncoming clutch active	= TRUE		
					primary on coming control state	≠ clutch fill phase		
					primary on coming commanded pressure)	≥ pressure clip threshold according to shift type:		
						closed and open throttle upshifts: pressure clip threshold is dependent on the oncoming clutch: **C1 Torque-Based Pressure Clip** OR **C3 Torque-Based Pressure Clip** OR **C4 Torque-Based Pressure Clip** OR **C5 Torque-Based Pressure Clip** OR **C6 Torque-Based Pressure Clip**	Post-torque phase delay for powered upshifts is dependent on the oncoming clutch: **C1_Oncoming Post-Torque Phase Delay** OR **C3_Oncoming Post-Torque Phase Delay** OR **C4_Oncoming Post-Torque Phase Delay** OR **C5_Oncoming Post-Torque Phase Delay** OR **C6_Oncoming Post-Torque Phase Delay**	
						clip thresholds for all other shift types: garage shifts:		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
						Clutch Clip Press GS Shifts closed throttle downshift: **Clutch Clip Press CD Shifts** negative torque upshift: **Clutch Clip Press NU Shifts** open throttle downshift: **Clutch Clip Press PD Shifts**		
					C2 clutch slip speed valid, all speed sensors are functional for lever node clucth slip speed calculation	= TRUE		
					******************************	******************************		
					conditions needed to trigger test:			
					(current shift type AND shift type enable cal for current shift type)	≠ Garage shift = **Clutch Stuck On Shift Type Enable** (0 table value will disable, 1 will enable)		
					OR			
					(Intrusive shift active AND shift type enable cal for garage shift AND Attained Gear AND (stuck on enable cal for forward garge shifts AND	= FALSE = 1 (0 will enable, 1 will enable) = NEUTRAL OR commanded gear = 1 (0 to disable, 1 to enable)		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					driver requested direction AND commanded gear) OR (stuck on enable cal for reverse garage shifts AND driver requested direction AND commanded gear))	= FORWARD = a FORWARD gear = 1 (0 to disable, 1 to enable) = REVERSE = REVERSE		
					clutch stuck off intrusive shift active	= FALSE		
					startle mitigation active (see note on startle mitigation below)	= FALSE		
					(new clutch controller has been initalized OR transitioning to a different clutch controller)	= TRUE = TRUE		
					current clutch solenoid test state	transitions to TestState or TUT_HOLD (see note below about state transitions)		
					******************************	******************************		
					DTCs not fault pending	P17CE P1783 P178F P17C6 P17C4 P17C7 P17D3 P17C5 P0721 P172A P172B P0716 P0717 P07C0 P07BF P0723 P0722 P077D P077C P176C P176D P176B P17D6		
					DTCs not fault active	P2534 P0707 P0708 P0716 P0717 P07C0		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
						P07BF P077D P077C P126C P176D P17CC P17CD P0962 P0966 P0970 P2720 P2729 P2738 P0963 P0967 P0971 P2721 P2730 P2739 P0960 P0964 P0968 P2718 P2727 P2736 P17CE P1783 P17D3 P17C5 P0721 AcceleratorPedalFailure CrankSensor_FA		
					DTCs not test fail this key on	P0707 P0708 P0723 P0722 P176B P17D6 P0747 P0777 P0797 P2715 P2724 P2733 P0746 P0776 P0796 P2714 P2723 P2732 P2821 P2820 P178F P17C6 P17C4 P17C7 P172A P172B		
					******************************	******************************		
					NOTE: Clutch control solenoid test state TIE UP TEST HOLD is necessary, as it is possible to have multiple off going clutches during one automatic transmission shift. Clutch control solenoid test state is set to TIE UP TEST HOLD during an automatic transmission shift due to two conditions: Current value of clutch control solenoid test state is TIE UP TEST TEST			

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					STATE, when one off going clutch pressure control solenoid stuck on diagnostic monitor is currently executing. AND That off going clutch pressure control solenoid stuck on diagnostic monitor currently executing passes, the corresponding clutch slip speed ≥ clutch slip speed fail threshold. Once clutch control solenoid test state is set to TIE UP TEST HOLD, it remains TIE UP TEST HOLD during the automatic transmission shift, until: An additional off going clutch occurs, as indicated by solenoid stuck on test trigger = TRUE, subsequently clutch control solenoid test state is reset to TIE UP TEST TEST STATE, to allow the additional corresponding off going clutch pressure control solenoid stuck on diagnostic monitor to execute. OR The automatic transmission shift completes, range shift state = range shift complete.			

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					NOTE: Startle mitigation is used to detect unintended vehicle deceleration due to a clutch pressure control solenoid stuck on failure mode that occurs during steady state gear, not during an automatic transmission shift. The startle mitigation active then forces the transmission clutch pressure control system to a safe gear or neutral state, based on the active and inactive clutches, when the unintended vehicle deceleration occurred. Once a safe vehicle gear state is attained, the gear and clutch pressure control system allows transitions of the clutches on and off, to sequence automatic transmission shifts, single step shifts. As each single step automatic transmission shift occurs the normal pressure control solenoid stuck on diagnostic monitors execute to verify which clutch pressure control solenoid is in the stuck on failure mode, allowing one of the clutch pressure control solenoid stuck on DTCs to set P0747, P0777, P0797, P2715,			

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					P2724, P2733, P2821.			

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Output Speed Sensor Circuit Low	P077C	Controller specific analog circuit diagnoses the transmission output speed sensor and wiring for a short to ground fault by comparing a voltage measurement to controller specific voltage thresholds.	transmission output speed sesnor raw voltage, update fail time, 12.5 millisecond update rate	≤ 0.2500 volts (≤ 0.5 Ω impedance between signal and controller ground)	service mode $04 active diagnostic monitor enable P077D fault active	= FALSE = 1 Boolean = FALSE	fail time ≥ 0.050 seconds, update fail count, fail count ≥ 16 counts 6.25 millisecond update rate	Type A, 1 Trips
					service fast learn run crank voltage battery voltage	= FALSE ≥ 10.00 volts ≥ 10.00 volts	service fast learn, run crank and battery voltage time ≥ 5.00 seconds	
					P077C fault active P077C test fail this key on	= FALSE = FALSE		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Output Speed Sensor Circuit High	P077D	Controller specific analog circuit diagnoses the transmission output speed sensor and wiring for a short to voltage fault by comparing a voltage measurement to controller specific voltage thresholds.	transmission output speed sesnor raw voltage, update fail time, 12.5 millisecond update rate	≥ 4.7500 volts (≤ 0.5 Ω impedance between signal and controller power)	service mode $04 active diagnostic monitor enable P077C fault active service fast learn run crank voltage battery voltage P077D fault active P077D test fail this key on	= FALSE = 1 Boolean = FALSE = FALSE ≥ 10.00 volts ≥ 10.00 volts = FALSE = FALSE	fail time ≥ 0.050 seconds, update fail count, fail count ≥ 16 counts 6.25 millisecond update rate service fast learn, run crank and battery voltage time ≥ 5.000 seconds	Type A, 1 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Pressure Control (PC) Solenoid C Stuck Off (GR10)	P0796	Each pressure control solenoid stuck off diagnostic monitor detects a clutch pressure control solenoid failed hydraulically off, while the solenoid is electrically functional. In the failure mode the clutch slip speed, and gear box gear slip, will be excessive, not near or at zero RPM. The clutch slip speed is calculated based on the transmission lever node design, requiring transmission input shaft speed, transmission output shaft speed, and, one transmission intermediate shaft speed. The clutch pressure control solenoid is tested after an automatic transmission shift occurs and has been considered shift complete, or, steady state gear is deemed active, range shift complete. When the automatic transmission shift is complete, steady state gear is considered, the clutch pressure control solenoid is mapped to transmission line	C3 clutch slip speed, update fail time 6.25 milliscond update	≥ 200.0 RPM			fail time ≥ 1.00 seconds, update fail count, fail count ≥ 3 counts 6.25 milliscond update	Type A, 1 Trips
					******************************	******************************		
					system-level enables:			
					use battery voltage calibration is FALSE OR	= 1 Boolean		
					(use battery voltage calibration is TRUE AND	= 1 Boolean		
					battery voltage)	≥ 9.00 volts	battery voltage time ≥ 0.100 seconds	
					use run crank voltage calibration is FALSE OR	= 0 Boolean		
					(use run crank voltage calibration is TRUE AND	= 0 Boolean		
					run crank voltage)	≥ 9.00 volts	run crank voltage time ≥ 0.100 seconds	
					TCM output driver high side driver 1, clutch pressure control solenoid driver circuit enabled	= TRUE Boolean		
					TCM output driver high side driver 2, clutch pressure control solenoid driver circuit enabled	= TRUE Boolean		
					service fast learn active	= FALSE Boolean		
					service solenoid cleaning			

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
		pressure control, which normally allows the clutch to maintain full torque holding capacity at the given engine crankshaft torque, to maintain true gear ratio. When the clutch pressure control solenoid is failed hydraulically off, the clutch does not maintain holding capacity at any engine crankshaft torque, and the clutch slip speed is uncontrollable. The clutch pressure control solenoid test is suspended if the higher level safety startle mitigation function is active. The safety startle mitigation function is triggered when a sudden vehicle deceleration occurs due to a clutch pressure control solenoid that has failed in the opposite sense, clutch pressure control solenoid failed hydraulically on, while the solenoid is electrically functional, which must take priority over any clutch pressure control solenoid stuck off diagnostic monitor. All clutch pressure control			procedure active hydraulic pressure available hydraulic line pressure **************************** enable C3 clutch slip speed fail compare when: ((startle mitigation active OR (startle mitigation active AND startle mitigation gear)) (see startle mitigation active NOTE below) unintended deceleration fault pending OR unintended deceleration fault pending enable cal is FALSE (startle mitigation) clutch steady state adaptive active (transmission output shaft speed OR (accelerator pedal position OR engine speed) C3 clutch slip speed valid	= FALSE Boolean = TRUE ≥ -999.00 kPa **************************** = FALSE = TRUE ≠ initial startle mitigation gear = FALSE = 0 (0 to enable, 1 to disable) = FALSE ≥ 36.0 RPM ≥ 0.50 % ≥ 1,000.0 RPM = TRUE (all speed sensors are functional for lever node clutch slip	≥ 1.000 seconds	

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
		solenoid stuck on/off diagnostic monitors are emission MIL DTCs. System voltage must be normal, all clutch pressure control solenoid driver circuits must be functional, no clutch pressure control solenoid electrical or performance faults can be present, and no speed sensor electrical or performance faults can be present, or the clutch pressure control solenoid stuck off test is disabled. This diagnostic monitor is relative to C3 (GR10 C23457910) clutch pressure control solenoid.				speed calculation)		
					C3 clutch pressured map	= mapped to line pressure, C3 clutch pressure has reached fully applied state		
					(enable forward gear cal AND	= 1 (1 to enable, 0 to disable)		
					driver direction request AND	= FORWARD		
					Attained Gear) OR	= a FORWARD gear		
					(enable reverse gear cal AND	= 0 (1 to enable, 0 to disable)		
					driver direction request AND	= REVERSE		
					Attained Gear)	= REVERSE		
					range shift state	= range shift complete		
					******************************	******************************		
					DTCs not fault pending	P17CE P1783 P178F P17C6 P17C4 P17C7 P17D3 P17C5 P0721 P172A P172B P0716 P0717 P07C0 P07BF P0723 P0722 P077D P077C P176C P176D P176B P17D6		
					DTCs not fault active	P2534 P0707 P0708 P0716 P0717 P07C0 P07BF P077D P077C P126C P176D P17CC P17CD P0962 P0966 P0970 P2720 P2729 P2738 P0963 P0967 P0971 P2721 P2730 P2739 P0960 P0964 P0968 P2718 P2727 P2736 P17CE P1783		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
						P17D3 P17C5 P0721 AcceleratorPedalFailure CrankSensor_FA		
					DTCs not test fail this key on	P0707 P0708 P0723 P0722 P176B P17D6 P0747 P0777 P0797 P2715 P2724 P2733 P0746 P0776 P0796 P2714 P2723 P2732 P2821 P2820 P178F P17C6 P17C4 P17C7 P172A P172B		
					NOTE: startle mitigation active is used to detect unintended deceleration due to clutch pressure control solenoid stuck on failure modes, the clutch pressure control solenoid stuck on DTCs being P0747 P0777 P0797 P2715 P2724 P2733 P2821			

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Pressure Control (PC) Solenoid C Stuck On	P0797	Each pressure control solenoid stuck on diagnostic monitor detects a clutch pressure control solenoid failed hydraulically on, while the solenoid is electrically functional. The clutch pressure control solenoid is tested during an automatic transmission shift by monitoring the off going clutch slip speed. With the clutch pressure control solenoid failed on, still allowing hydraulic pressure to the clutch being commanded off, the intended off going clutch continues to maintain torque capacity during the transmission automatic shift. In the failure mode, the off going clutch slip speed will remain near zero RPM when the clutch pressure control solenoid is commanded to an off pressure in the normal operation to release the holding clutch. The clutch slip speed is calculated based on the transmission lever node design, requiring	shift type is power down shift: C3 clutch slip speed OR shift type is garage shift: C3 clutch slip speed ELSE shift is another type: C3 clutch slip speed update fail time 6.25 milliscond update	 < 50.00 RPM < 100.00 RPM < 50.00 RPM			Base fail time: shift type is power down shift: fail time ≥ 0.60 seconds shift type is garage shift: fail time ≥ 0.35 shift type is another type: fail time ≥ 0.15 seconds Add fail time offset according to shift type: open throttle upshift: **Clutch Stuck On Fail Offset Time PU Shifts** open throttle downshift: **Clutch Stuck On Fail Offset Time PD Shifts** garage shift: **Clutch Stuck On Fail Offset Time GS Shifts** closed throttle downshift:	Type A, 1 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
		transmission input shaft speed, transmission output shaft speed, and, one transmission intermediate shaft speed. As part of the pressure control solenoid stuck on diagnostic monitor, the safety startle mitigation function executes when in steady state gear, no automatic transmission shift in progress. The safety startle mitigation function is triggered when a sudden vehicle deceleration occurs due to a clutch pressure control solenoid that has failed hydraulically on, while the solenoid is electrically functional. All clutch pressure control solenoid stuck on diagnostic monitors are emission MIL DTCs. System voltage must be normal, all clutch pressure control solenoid driver circuits must be functional, no clutch pressure control solenoid electrical or performance faults can be present, and no speed sensor electrical or performance faults can be present, or the clutch pressure control solenoid stuck on test			****************************** system-level enables: use battery voltage calibration is FALSE OR (use battery voltage calibration is TRUE AND battery voltage) use run crank voltage calibration is FALSE OR (use run crank voltage calibration is TRUE AND run crank voltage)	****************************** = 1 Boolean = 1 Boolean ≥ 9.00 volts = 0 Boolean = 0 Boolean ≥ 9.00 volts	**Clutch Stuck On Fail Offset Time CD Shifts** negative torque upshift: **Clutch Clip Press NU Shifts** clutch staging shift: **Clutch Stuck On Fail Offset Time STGR Shifts** update fail count, fail count ≥ 3 counts 6.25 milliscond update battery voltage time ≥ 0.100 seconds run crank voltage time ≥ 0.100 seconds	

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
		is disabled. This diagnostic monitor is relative to the GR10 C3 C23457910 clutch pressure control solenoid.			TCM output driver high side driver 1, clutch pressure control solenoid driver circuit enabled	= TRUE Boolean		
					TCM output driver high side driver 2, clutch pressure control solenoid driver circuit enabled	= TRUE Boolean		
					service fast learn active	= FALSE Boolean		
					service solenoid cleaning procedure active	= FALSE Boolean		
					hydraulic pressure available	= TRUE		
					hydraulic pressure *****************************	≥ -999 kPa *****************************		
					range shift state	≠ range shift complete		
					diagnostic clutch test	= OFF GOING CLUTCH TEST		
					transmission output shaft speed	≥ 36.0 RPM		
					((C3 off going clutch pressure control ramp time out complete	= TRUE		
					AND off going clutch pressure ramp control ramp time out enable)	= 1 (1 to enable, 0 to disable)		
					OR			
					C3 off going clutch command pressure)	≤ 350 kPa	exhaust delay by shift type:	

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
							closed throttle upshift: **C3 exhaust delay closed throttle lift foot up shift** open throttle upshift: **C3 exhaust delay open throttle power on up shift** garage shifts: **C3 exhaust delay garage shift** closed throttle downshift: **C3 exhaust delay closed throttle down shift** negative torque upshift: **C3 exhaust delay negative torque up shift** open throttle downshift: **C3 exhaust delay open throttle power down shift**	
					(engine torque AND Primary oncoming stuck	≥ 8,192 Nm = 0 (0 is enable, 1 is		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					on torque enable cal)	enable)		
					OR			
					(primary oncoming clutch active	= TRUE		
					primary on coming control state	≠ clutch fill phase		
					primary on coming commanded pressure)	≥ pressure clip threshold according to shift type:		
						closed and open throttle upshifts: pressure clip threshold is dependent on the oncoming clutch: **C1 Torque-Based Pressure Clip** OR **C2 Torque-Based Pressure Clip** OR **C4 Torque-Based Pressure Clip** OR **C5 Torque-Based Pressure Clip** OR **C6 Torque-Based Pressure Clip**	Post-torque phase delay for powered upshifts is dependent on the oncoming clutch: **C1_Oncoming Post-Torque Phase Delay** OR **C2_Oncoming Post-Torque Phase Delay** OR **C4_Oncoming Post-Torque Phase Delay** OR **C5_Oncoming Post-Torque Phase Delay** OR **C6_Oncoming Post-Torque Phase Delay**	
						clip thresholds for all other shift types:		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
						garage shifts: **Clutch Clip Press GS Shifts** closed throttle downshift: **Clutch Clip Press CD Shifts** negative torque upshift: **Clutch Clip Press NU Shifts** open throttle downshift: **Clutch Clip Press PD Shifts**		
					C3 clutch slip speed valid, all speed sensors are functional for lever node clutch slip speed calculation	= TRUE		
					****************************** conditions needed to trigger test:	******************************		
					(current shift type AND shift type enable cal for current shift type) OR	≠ Garage shift **Clutch Stuck On Shift** = **Type Enable** (0 table value will disable, 1 will enable)		
					(Intrusive shift active AND shift type enable cal for garage shift AND Attained Gear AND (stuck on enable cal for forward garge shifts	= FALSE = 1 (0 will enable, 1 will enable) = NEUTRAL OR commanded gear = 1 (0 to disable, 1 to		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					AND driver requested direction AND commanded gear) OR (stuck on enable cal for reverse garage shifts AND driver requested direction AND commanded gear)) clutch stuck off intrusive shift active startle mitigation active (see note on startle mitigation below) (new clutch controller has been initalized OR transitioning to a different clutch controller) current clutch solenoid test state ****************************** DTCs not fault pending DTCs not fault active	enable) = FORWARD = a FORWARD gear = 1 (0 to disable, 1 to enable) = REVERSE = REVERSE = FALSE = FALSE = TRUE = TRUE transitions to TestState or TUT_HOLD (see note below about state transitions) ****************************** P17CE P1783 P178F P17C6 P17C4 P17C7 P17D3 P17C5 P0721 P172A P172B P0716 P0717 P07C0 P07BF P0723 P0722 P077D P077C P176C P176D P176B P17D6 P2534 P0707 P0708		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
						P0716 P0717 P07C0 P07BF P077D P077C P126C P176D P17CC P17CD P0962 P0966 P0970 P2720 P2729 P2738 P0963 P0967 P0971 P2721 P2730 P2739 P0960 P0964 P0968 P2718 P2727 P2736 P17CE P1783 P17D3 P17C5 P0721 AcceleratorPedalFailure CrankSensor_FA		
					DTCs not test fail this key on	P0707 P0708 P0723 P0722 P176B P17D6 P0747 P0777 P0797 P2715 P2724 P2733 P0746 P0776 P0796 P2714 P2723 P2732 P2821 P2820 P178F P17C6 P17C4 P17C7 P172A P172B		
					******************************	******************************		
					NOTE: Clutch control solenoid test state TIE UP TEST HOLD is necessary, as it is possible to have multiple off going clutches during one automatic transmission shift. Clutch control solenoid test state is set to TIE UP TEST HOLD during an automatic transmission shift due to two conditions: Current value of clutch control solenoid test state			

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					is TIE UP TEST TEST STATE, when one off going clutch pressure control solenoid stuck on diagnostic monitor is currently executing. AND That off going clutch pressure control solenoid stuck on diagnostic monitor currently executing passes, the corresponding clutch slip speed ≥ clutch slip speed fail threshold. Once clutch control solenoid test state is set to TIE UP TEST HOLD, it remains TIE UP TEST HOLD during the automatic transmission shift, until: An additional off going clutch occurs, as indicated by solenoid stuck on test trigger = TRUE, subsequently clutch control solenoid test state is reset to TIE UP TEST TEST STATE, to allow the additional corresponding off going clutch pressure control solenoid stuck on diagnostic monitor to execute. OR The automatic transmission shift completes, range shift state = range shift complete.			

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					NOTE: Startle mitigation is used to detect unintended vehicle deceleration due to a clutch pressure control solenoid stuck on failure mode that occurs during steady state gear, not during an automatic transmission shift. The startle mitigation active then forces the transmission clutch pressure control system to a safe gear or neutral state, based on the active and inactive clutches, when the unintended vehicle deceleration occurred. Once a safe vehicle gear state is attained, the gear and clutch pressure control system allows transitions of the clutches on and off, to sequence automatic transmission shifts, single step shifts. As each single step automatic transmission shift occurs the normal pressure control solenoid stuck on diagnostic monitors execute to verify which clutch pressure control solenoid is in the stuck on failure mode, allowing one of the clutch pressure control solenoid stuck on DTCs to set P0747,			

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					P0777, P0797, P2715, P2724, P2733, P2821.			

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Input/Turbine Speed Sensor A Circuit Low	P07BF	Controller specific analog circuit diagnoses the transmission input/ turbine speed sensor and wiring for a short to ground fault by comparing a voltage measurement to controller specific voltage thresholds.	transmission intput/turbine speed sesnor raw voltage, update fail time, 12.5 millisecond update rate	≤ 0.2500 volts (≤ 0.5 Ω impedance between signal and controller ground)	service mode \$04 active diagnostic monitor enable P07C0 fault active service fast learn run crank voltage battery voltage P07BF fault active P07BF test fail this key on	= FALSE = 1 Boolean = FALSE = FALSE ≥ 10.00 volts ≥ 10.00 volts = FALSE = FALSE	fail time ≥ 0.050 seconds, update fail count, fail count ≥ 16 counts 6.25 millisecond update rate service fast learn, run crank and battery voltage time ≥ 5.000 seconds	Type A, 1 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Input/Turbine Speed Sensor A Circuit High	P07C0	Controller specific analog circuit diagnoses the transmission input/ turbine speed sensor and wiring for a short to voltage fault by comparing a voltage measurement to controller specific voltage thresholds.	transmission input/turbine speed sesnor raw voltage, update fail time, 12.5 millisecond update rate	≥ 4.7500 volts (≤ 0.5 Ω impedance between signal and controller power)	service mode \$04 active diagnostic monitor enable P07BF fault active service fast learn run crank voltage battery voltage P07C0 fault active P07C0 test fail this key on	= FALSE = 1 Boolean = FALSE = FALSE ≥ 10.00 volts ≥ 10.00 volts = FALSE = FALSE	fail time ≥ 0.050 seconds, update fail count, fail count ≥ 16 counts 6.25 millisecond update rate run crank and battery voltage time ≥ 5.000 seconds	Type A, 1 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Upshift Switch Circuit	P0815	Diagnoses the state of the upshift switch circuit, stuck in the state "tap up" (upshift) active. Emissions neutral default, disables tap-up tap-down or manual-up manual-down.	switch state update fail time 1 100 millisecond update rate	= tap up (upshift) state active	service mode $04 active diagnostic monitor enable run crank voltage run crank voltage time run crank voltage P1761 fault active P0826 fault active P0826 test fail this key on P0826 fault pending (P0815 fault active OR P0815 fault active test fail this key on) PRNDL range change time PRNDL in range: D1 OR D2 OR D3 OR D4 OR D5 OR D6 OR D7 OR D8 OR D9 OR D10 OR NEUTRAL OR PARK OR REVERSE DTCs not fault pending	= FALSE = 1 Boolean ≥ 5.00 volts ≥ 25 milliseconds ≥ 9.00 volts = FALSE = FALSE = FALSE = FALSE = FALSE = FALSE ≥ 1.00 seconds = 1 Boolean = 1 Boolean = 1 Boolean = 1 Boolean = 1 Boolean = 1 Boolean = 1 Boolean = 1 Boolean = 1 Boolean = 1 Boolean = 0 Boolean = 0 Boolean = 0 Boolean Transmission Shift Lever Position Validity	fail time 1 ≥ 1.00 seconds	Emissions Neutral Diagnostics – Type C
			switch state update fail time 2 100 millisecond update rate	= tap up (upshift) state active	service mode $04 active diagnostic monitor enable run crank voltage run crank voltage time run crank voltage P1761 fault active	= FALSE = 1 Boolean ≥ 5.00 volts ≥ 25 milliseconds ≥ 9.00 volts = FALSE	fail time 2 ≥ 120.00 seconds	

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					P0826 fault active	= FALSE		
					P0826 test fail this key on	= FALSE		
					P0826 fault pending	= FALSE		
					(P0815 fault active OR	= FALSE		
					P0815 fault active test fail this key on)	= FALSE		
					PRNDL range change time	≥ 1.00 seconds		
					PRNDL in range:			
					D1 OR	= 1 Boolean		
					D2 OR	= 1 Boolean		
					D3 OR	= 1 Boolean		
					D4 OR	= 1 Boolean		
					D5 OR	= 1 Boolean		
					D6 OR	= 1 Boolean		
					D7 OR	= 1 Boolean		
					D8 OR	= 1 Boolean		
					D9 OR	= 1 Boolean		
					D10 OR	= 1 Boolean		
					NEUTRAL OR	= 0 Boolean		
					PARK OR	= 0 Boolean		
					REVERSE	= 0 Boolean		
					DTCs not fault pending	Transmission Shift Lever Position Validity		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Downshift Switch Circuit	P0816	Diagnoses the state of the downshift switch circuit, stuck in the state "tap down" (downshift) active. Emissions neutral default, disables tap-up tap-down or manual-up manual-down.	switch state update fail time 1 100 millisecond update rate	= tap down (downshift) state active	service mode $04 active diagnostic monitor enable run crank voltage run crank voltage time run crank voltage P1761 fault active P0826 fault active P0826 test fail this key on P0826 fault pending (P0816 fault active OR P0816 fault active test fail this key on) PRNDL range change time PRNDL in range: D1 OR D2 OR D3 OR D4 OR D5 OR D6 OR D7 OR D8 OR D9 OR D10 OR NEUTRAL OR PARK OR REVERSE DTCs not fault pending	= FALSE = 1 Boolean ≥ 5.00 volts ≥ 25 milliseconds ≥ 9.00 volts = FALSE = FALSE = FALSE = FALSE = FALSE = FALSE ≥ 1.00 seconds = 1 Boolean = 1 Boolean = 1 Boolean = 1 Boolean = 1 Boolean = 1 Boolean = 1 Boolean = 1 Boolean = 1 Boolean = 1 Boolean = 0 Boolean = 0 Boolean = 0 Boolean Transmission Shift Lever Position Validity	fail time 1 ≥ 1.00 seconds	Emissions Neutral Diagnostics – Type C
			switch state update fail time 2 100 millisecond update rate	= tap down (downshift) state active	service mode $04 active diagnostic monitor enable run crank voltage run crank voltage time run crank voltage P1761 fault active	= FALSE = 1 Boolean ≥ 5.00 volts ≥ 25 milliseconds ≥ 9.00 volts = FALSE	fail time 2 ≥ 120.00 seconds	

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					P0826 fault active	= FALSE		
					P0826 test fail this key on	= FALSE		
					P0826 fault pending	= FALSE		
					(P0816 fault active OR	= FALSE		
					P0816 fault active test fail this key on)	= FALSE		
					PRNDL range change time	≥ 1.00 seconds		
					PRNDL in range:			
					D1 OR	= 1 Boolean		
					D2 OR	= 1 Boolean		
					D3 OR	= 1 Boolean		
					D4 OR	= 1 Boolean		
					D5 OR	= 1 Boolean		
					D6 OR	= 1 Boolean		
					D7 OR	= 1 Boolean		
					D8 OR	= 1 Boolean		
					D9 OR	= 1 Boolean		
					D10 OR	= 1 Boolean		
					NEUTRAL OR	= 0 Boolean		
					PARK OR	= 0 Boolean		
					REVERSE	= 0 Boolean		
					DTCs not fault pending	Transmission Shift Lever Position Validity		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Up and Down Shift Switch Circuit	P0826	Diagnoses the state of the upshift/downshift switch circuit at an illegal voltage, voltage out of range. Emissions neutral default, disables tap-up tap-down or manual-up manual-down.	switch state update fail time 100 millisecond update rate	= illegal (voltage out of range)	service mode $04 active diagnostic monitor enable run crank voltage run crank voltage P1761 fault active (P0826 fault active OR P0826 fault active test fail this key on)	= FALSE = 1 Boolean ≥ 5.00 volts ≥ 9.00 volts = FALSE = FALSE = FALSE	fail time ≥ 60.00 seconds run crank voltage time ≥ 25 milliseconds	Emissions Neutral Diagnostics – Type C

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Pressure Control (PC) Solenoid A Control Circuit Open	P0960	Controller specific circuit diagnoses 9 speed CB123456, 10 speed CB123456R, or 8 speed CB1278R clutch or CVT secondary pulley, solenoid for an open circuit failure by comparing a voltage measurement to controller specific voltage thresholds.	Voltage measurement outside of controller specific acceptable range indicates an open circuit Controller specific circuit voltage thresholds are set to meet the following controller specification for an open circuit Increment fail time	≥ 200 K Ω impedance between signal and controller ground	battery voltage (run crank voltage OR accessory voltage active) diagnostic monitor enable calibration (solenoid is mapped to high side driver 1 (CeTSCR_e_HSD1) AND high side driver 1) OR (solenoid is mapped to high side driver 2 (CeTSCR_e_HSD2) AND high side driver 2) OR (solenoid is mapped to high side driver 3 (CeTSCR_e_HSD3) AND high side driver 3)	≥ 9.00 volts and ≤ 32.00 volts ≥ 5.00 volts = TRUE = 1 (1 is enable, 0 is disable) = CeTSCR_e_HSD2 (CeTSCR_e_NoHSD will disable) = ON = CeTSCR_e_HSD2 (CeTSCR_e_NoHSD will disable) = ON = CeTSCR_e_HSD2 (CeTSCR_e_NoHSD will disable) = ON	fail time ≥ 0.30 seconds out of sample time ≥ 0.50 seconds ≥ 1.00 seconds ≥ 25 milliseconds ≥ 12.5 milliseconds	Type A, 1 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Pressure Control (PC) Solenoid A Control Circuit Low	P0962	Controller specific circuit diagnoses 9 speed CB123456, 10 speed CB123456R, or 8 speed CB1278R clutch or CVT secondary pulley, solenoid for a ground short circuit failure by comparing a voltage measurement to controller specific voltage thresholds.	Voltage measurement outside of controller specific acceptable range indicates a ground short Controller specific circuit voltage thresholds are set to meet the following controller specification for a ground short	≤ 0.5 Ω impedance between signal and controller ground When malfunction criteria threshold is met, increment fail time and increment sample time, otherwise increment only sample time			fail time ≥ 0.10 seconds out of sample time ≥ 0.17 seconds 6.25 millisecond update rate	Type A, 1 Trips
					battery voltage	≥ 9.00 volts and ≤ 32.00 volts	≥ 1.00 seconds	
					(run crank voltage OR accessory voltage active)	≥ 5.00 volts = TRUE	≥ 25 milliseconds ≥ 12.5 milliseconds	
					diagnostic monitor enable calibration	= 1 (1 is enable, 0 is disable)		
					(solenoid is mapped to high side driver 1 (CeTSCR_e_HSD1) AND high side driver 1)	= CeTSCR_e_HSD2 (CeTSCR_e_NoHSD will disable) = ON		
					OR			
					(solenoid is mapped to high side driver 2 (CeTSCR_e_HSD2) AND high side driver 2)	= CeTSCR_e_HSD2 (CeTSCR_e_NoHSD will disable) = ON		
					OR			
					(solenoid is mapped to high side driver 3 (CeTSCR_e_HSD3) AND high side driver 3)	= CeTSCR_e_HSD2 (CeTSCR_e_NoHSD will disable) = ON		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Pressure Control (PC) Solenoid A Control Circuit High	P0963	Controller specific circuit diagnoses 9 speed, 10 speed CB123456R, 8 speed CB1278R clutch or CVT secondary pulley, solenoid for a short to voltage circuit failure by comparing a voltage measurement to controller specific voltage thresholds.	Voltage measurement outside of controller specific acceptable range indicates a short to voltage Controller specific circuit voltage thresholds are set to meet the following controller specification for a short to voltage	≤ 0.5 Ω impedance between signal and controller voltage source When malfunction criteria threshold is met, increment fail time and increment sample time, otherwise increment only sample time			fail time ≥ 0.30 seconds out of sample time ≥ 0.50 seconds	Type A, 1 Trips
					battery voltage	≥ 9.00 volts and ≤ 32.00 volts	≥ 1.00 seconds	
					(run crank voltage OR	≥ 5.00 volts	≥ 25 milliseconds	
					accessory voltage active)	= TRUE	≥ 12.5 milliseconds	
					diagnostic monitor enable calibration	= 1 (1 is enable, 0 is disable)		
					(solenoid is mapped to high side driver 1 (CeTSCR_e_HSD1) AND high side driver 1)	= CeTSCR_e_HSD2 (CeTSCR_e_NoHSD will disable) = ON		
					OR			
					(solenoid is mapped to high side driver 2 (CeTSCR_e_HSD2) AND high side driver 2)	= CeTSCR_e_HSD2 (CeTSCR_e_NoHSD will disable) = ON		
					OR			
					(solenoid is mapped to high side driver 3 (CeTSCR_e_HSD3) AND high side driver 3)	= CeTSCR_e_HSD2 (CeTSCR_e_NoHSD will disable) = ON		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Pressure Control (PC) Solenoid B Control Circuit Open	P0964	Controller specific circuit diagnoses 9 speed CB29, 10 speed CB128910R, 8 speed CB12345R clutch or CVT primary pulley, solenoid for an open circuit failure by comparing a voltage measurement to controller specific voltage thresholds.	Voltage measurement outside of controller specific acceptable range indicates an open circuit Controller specific circuit voltage thresholds are set to meet the following controller specification for an open circuit	≥ 200 K Ω impedance between signal and controller ground When malfunction criteria threshold is met, increment fail time and increment sample time, otherwise increment only sample time	battery voltage (run crank voltage OR accessory voltage active) diagnostic monitor enable calibration (solenoid is mapped to high side driver 1 (CeTSCR_e_HSD1) AND high side driver 1) OR (solenoid is mapped to high side driver 2 (CeTSCR_e_HSD2) AND high side driver 2) OR (solenoid is mapped to high side driver 3 (CeTSCR_e_HSD3) AND high side driver 3)	≥ 9.00 volts and ≤ 32.00 volts ≥ 5.00 volts = TRUE = 1 (1 is enable, 0 is disable) = CeTSCR_e_HSD2 (CeTSCR_e_NoHSD will disable) = ON = CeTSCR_e_HSD2 (CeTSCR_e_NoHSD will disable) = ON = CeTSCR_e_HSD2 (CeTSCR_e_NoHSD will disable) = ON	fail time ≥ 0.30 seconds out of sample time ≥ 0.50 seconds 6.25 millisecond update rate ≥ 1.00 seconds ≥ 25 milliseconds ≥ 12.5 milliseconds	Type A, 1 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Pressure Control (PC) Solenoid B Control Circuit Low	P0966	Controller specific circuit diagnoses 9 speed CB29, 10 speed CB128910R, 8 speed CB12345R clutch or CVT primary pulley, solenoid for a ground short circuit failure by comparing a voltage measurement to controller specific voltage thresholds.	Voltage measurement outside of controller specific acceptable range indicates a ground short Controller specific circuit voltage thresholds are set to meet the following controller specification for a ground short	≤ 0.5 Ω impedance between signal and controller ground When malfunction criteria threshold is met, increment fail time and increment sample time, otherwise increment only sample time			fail time ≥ 0.10 seconds out of sample time ≥ 0.17 seconds 6.25 millisecond update rate	Type A, 1 Trips
					battery voltage	≥ 9.00 volts and ≤ 32.00 volts	≥ 1.00 seconds	
					(run crank voltage OR accessory voltage active)	≥ 5.00 volts = TRUE	≥ 25 milliseconds ≥ 12.5 milliseconds	
					diagnostic monitor enable calibration	= 1 (1 is enable, 0 is disable)		
					(solenoid is mapped to high side driver 1 (CeTSCR_e_HSD1) AND high side driver 1)	= CeTSCR_e_HSD2 (CeTSCR_e_NoHSD will disable) = ON		
					OR			
					(solenoid is mapped to high side driver 2 (CeTSCR_e_HSD2) AND high side driver 2)	= CeTSCR_e_HSD2 (CeTSCR_e_NoHSD will disable) = ON		
					OR			
					(solenoid is mapped to high side driver 3 (CeTSCR_e_HSD3) AND high side driver 3)	= CeTSCR_e_HSD2 (CeTSCR_e_NoHSD will disable) = ON		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Pressure Control (PC) Solenoid B Control Circuit High	P0967	Controller specific circuit diagnoses 9 speed CB29, 10 speed CB128910R, 8 speed CB12345R clutch or CVT primary pulley, solenoid for a short to voltage circuit failure by comparing a voltage measurement to controller specific voltage thresholds.	Voltage measurement outside of controller specific acceptable range indicates a short to voltage Controller specific circuit voltage thresholds are set to meet the following controller specification for a short to voltage	≤ 0.5 Ω impedance between signal and controller voltage source When malfunction criteria threshold is met, increment fail time and increment sample time, otherwise increment only sample time			fail time ≥ 0.30 seconds out of sample time ≥ 0.50 seconds	Type A, 1 Trips
					battery voltage	≥ 9.00 volts and ≤ 32.00 volts	≥ 1.00 seconds	
					(run crank voltage OR accessory voltage active)	≥ 5.00 volts = TRUE	≥ 25 milliseconds ≥ 12.5 milliseconds	
					diagnostic monitor enable calibration	= 1 (1 is enable, 0 is disable)		
					(solenoid is mapped to high side driver 1 (CeTSCR_e_HSD1) AND high side driver 1)	= CeTSCR_e_HSD2 (CeTSCR_e_NoHSD will disable) = ON		
					OR			
					(solenoid is mapped to high side driver 2 (CeTSCR_e_HSD2) AND high side driver 2)	= CeTSCR_e_HSD2 (CeTSCR_e_NoHSD will disable) = ON		
					OR			
					(solenoid is mapped to high side driver 3 (CeTSCR_e_HSD3) AND high side driver 3)	= CeTSCR_e_HSD2 (CeTSCR_e_NoHSD will disable) = ON		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Pressure Control (PC) Solenoid C Control Circuit Open	P0968	Controller specific circuit diagnoses 9 speed CB38, 10 speed C23457910, or 8 speed C13567, clutch or CVT line pressure, solenoid for an open circuit failure by comparing a voltage measurement to controller specific voltage thresholds.	Voltage measurement outside of controller specific acceptable range indicates an open circuit Controller specific circuit voltage thresholds are set to meet the following controller specification for an open circuit	≥ 200 K Ω impedance between signal and controller ground When malfunction criteria threshold is met, increment fail time and increment sample time, otherwise increment only sample time	battery voltage run crank voltage OR accessory voltage active diagnostic monitor enable calibration (solenoid is mapped to high side driver 1 (CeTSCR_e_HSD1) AND high side driver 1) OR (solenoid is mapped to high side driver 2 (CeTSCR_e_HSD2) AND high side driver 2) OR (solenoid is mapped to high side driver 3 (CeTSCR_e_HSD3) AND high side driver 3)	≥ 9.00 volts and ≤ 32.00 volts ≥ 5.00 volts = TRUE = 1 (1 is enable, 0 is disable) = CeTSCR_e_HSD2 (CeTSCR_e_NoHSD will disable) = ON = CeTSCR_e_HSD2 (CeTSCR_e_NoHSD will disable) = ON = CeTSCR_e_HSD2 (CeTSCR_e_NoHSD will disable) = ON	fail time ≥ 0.30 seconds out of sample time ≥ 0.50 seconds 6.25 millisecond update rate ≥ 1.00 seconds ≥ 25 milliseconds ≥ 12.5 milliseconds	Type A, 1 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Pressure Control (PC) Solenoid C Control Circuit Low	P0970	Controller specific circuit diagnoses 9 speed CB38,10 speed C23457910, or 8 speed C13567 clutch,or CVT line pressure, solenoid for a ground short circuit failure by comparing a voltage measurement to controller specific voltage thresholds.	Voltage measurement outside of controller specific acceptable range indicates a ground short Controller specific circuit voltage thresholds are set to meet the following controller specification for a ground short	≤ 0.5 Ω impedance between signal and controller ground When malfunction criteria threshold is met, increment fail time and increment sample time, otherwise increment only sample time			fail time ≥ 0.10 seconds out of sample time ≥ 0.17 seconds 6.25 millisecond update rate	Type A, 1 Trips
					battery voltage	≥ 9.00 volts and ≤ 32.00 volts	≥ 1.00 seconds	
					(run crank voltage OR accessory voltage active)	≥ 5.00 volts = TRUE	≥ 25 milliseconds ≥ 12.5 milliseconds	
					diagnostic monitor enable calibration	= 1 (1 is enable, 0 is disable)		
					(solenoid is mapped to high side driver 1 (CeTSCR_e_HSD1) AND high side driver 1)	= CeTSCR_e_HSD2 (CeTSCR_e_NoHSD will disable) = ON		
					OR			
					(solenoid is mapped to high side driver 2 (CeTSCR_e_HSD2) AND high side driver 2)	= CeTSCR_e_HSD2 (CeTSCR_e_NoHSD will disable) = ON		
					OR			
					(solenoid is mapped to high side driver 3 (CeTSCR_e_HSD3) AND high side driver 3)	= CeTSCR_e_HSD2 (CeTSCR_e_NoHSD will disable) = ON		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Pressure Control (PC) Solenoid C Control Circuit High	P0971	Controller specific circuit diagnoses 9 speed CB38, 10 speed C23457910, or 8 speed C13567,clutch or CVT line pressure, solenoid for a short to voltage circuit failure by comparing a voltage measurement to controller specific voltage thresholds.	Voltage measurement outside of controller specific acceptable range indicates a short to voltage Controller specific circuit voltage thresholds are set to meet the following controller specification for a short to voltage	≤ 0.5 Ω impedance between signal and controller voltage source When malfunction criteria threshold is met, increment fail time and increment sample time, otherwise increment only sample time			fail time ≥ 0.30 seconds out of sample time ≥ 0.50 seconds	Type A, 1 Trips
					battery voltage	≥ 9.00 volts and ≤ 32.00 volts	≥ 1.00 seconds	
					(run crank voltage OR accessory voltage active)	≥ 5.00 volts = TRUE	≥ 25 milliseconds ≥ 12.5 milliseconds	
					diagnostic monitor enable calibration	= 1 (1 is enable, 0 is disable)		
					(solenoid is mapped to high side driver 1 (CeTSCR_e_HSD1) AND high side driver 1)	= CeTSCR_e_HSD2 (CeTSCR_e_NoHSD will disable) = ON		
					OR			
					(solenoid is mapped to high side driver 2 (CeTSCR_e_HSD2) AND high side driver 2)	= CeTSCR_e_HSD2 (CeTSCR_e_NoHSD will disable) = ON		
					OR			
					(solenoid is mapped to high side driver 3 (CeTSCR_e_HSD3) AND high side driver 3)	= CeTSCR_e_HSD2 (CeTSCR_e_NoHSD will disable) = ON		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Internal Control Module Redundant Memory Performance	P16F3	The diagnostic monitor is a rationalization of command values: command clutch pressures and command gear. The monitor is broken up into two fault detection routines, command pressure (tie up) fault detection and command gear/shift fault detection. The command pressure (tie up) fault detection is designed to verify the number of clutches applied in a given gear state is limited, in order to prevent a transmission internal mechanical tie-up condition. A condition which could lead to a vehicle deceleration above the design safety metric. If commanded clutch pressures are above a threshold which would allow multiple clutches to carry torque, the clutch is considered applied, otherwise the clutch is considered released. If there are more clutches applied, via the commanded clutch pressures, in a given gear state than is rational, one or more of	command pressure (tie up) fault detection minimum # of clutches ON by attained gear and by comanded gear, take lower of the 2 values, where attained gear is the current operating gear and command gear is the targetted value to transtion toward see **9 speed transmission clutch definition and gear state to clutch map** and **10 speed transmission clutch definition and gear state to clutch map** attached supporting tables for clutch 1 through clutch 7 definition and gear state to clutch map	≤ **NumClchTieUp** See Attached Supporting Tables	Reduandant Memory Command Pressure Enable Calibraiton Not Reduandant Memory Command Pressure Enable Calibraiton No traction event in progress: ABS((driven wheel speed - non-drive wheel speed) / driven wheel speed) 25 millisecond derivative TOSS RPM, (TOSS delta 25 millisecond loop to 25 milsecond loop) / 25 millisecond for time Clutch 1 hydraulic volume fill factor Clutch 2 hydraulic volume fill factor Clutch 3 hydraulic volume fill factor Clutch 4 hydraulic volume fill factor Clutch 5 hydraulic volume fill factor Clutch 6 hydraulic volume fill factor Clutch 7 hydraulic volume fill factor when clutch is off going (releasing) clutch the commanded clutch pressure equation = ((pressure control solenoid command	= 0 Boolean = 1 Boolean ≥ 0.00 % < 0.750 * **P2D2 Cltch Slip Sum** see attached supporting Table ≥ 0.0500 seconds ≥ 1.000 unitless ≥ 1.000 unitless ≥ 1.000 unitless ≥ 1.000 unitless ≥ 1.000 unitless ≥ 1.000 unitless ≥ 1.000 unitless	single event 6.25 millisecond update rate	Type A, 1 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
		the clutch pressure command values are in error. Given rate of change of transmission output shaft speed, command gear state clutches and clutch hydraulic fill volumes, those clutches in transition from the hydraulic released state to the hydraulic applied state and from the hydraulic applied state to the hydraulic released state, the rationality detects any number of command clutch pressures above a threshold, that are simultaneously active to cause a vehicle deceleration above the design safety metric. The command gear/ shift fault detection is designed to verify the commanded gear will not induce a downshift resulting in a gear state that is erroneous given vehicle operating conditions. The detection rationalizes the command gear against a minimum gear, highest gear ratio, for given vehicle speed and driver accelerator position.			pressure - pressure offset) * regulator valve gain) - regulator valve return spring pressure adaptive when clutch 1 is off going clutch: clutch 1 command pressure clutch 1 state is OFF when: clutch 1 command pressure, else clutch is ON and count clutch 1 toward minimum # of clutches ON when clutch 2 is off going clutch: clutch 2 command pressure clutch 2 state is OFF when: clutch 2 command pressure, else clutch is ON and count clutch 2 toward minimum # of clutches ON when clutch 3 is off going clutch: clutch 3 command pressure	= ((clutch 1 pressure control solenoid command pressure - 0.00) * 1.00) - regulator valve return spring pressure adaptive, kPa **P2D2 Decel Pressure -** ≤ **C1** see attached supporting tables = ((clutch 2 pressure control solenoid command pressure - 0.00) * 1.00) - regulator valve return spring pressure adaptive, kPa **P2D2 Decel Pressure -** ≤ **C2** see attached supporting tables = ((clutch 3 pressure		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
						control solenoid command pressure - 0.00) * 1.00) - regulator valve return spring pressure adaptive, kPa		
					clutch 3 state is OFF when: clutch 3 command pressure, else clutch is ON and count clutch 3 toward minimum # of clutches ON	**P2D2 Decel Pressure - ≤ C3** see attached supporting tables		
					when clutch 4 is off going clutch: clutch 4 command pressure	= ((clutch 4 pressure control solenoid command pressure - 0.00) * 1.00) - regulator valve return spring pressure adaptive, kPa		
					clutch 4 state is OFF when: clutch 4 command pressure, else clutch is ON and count clutch 4 toward minimum # of clutches ON	**P2D2 Decel Pressure - ≤ C4** see attached supporting tables		
					when clutch 5 is off going clutch: clutch 5 command pressure	= ((clutch 5 pressure control solenoid command pressure - 0.00) * 1.00) - regulator valve return spring pressure adaptive, kPa		
					clutch 5 state is OFF when: clutch 5 command pressure,			

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					else clutch is ON and count clutch 5 toward minimum # of clutches ON	**P2D2 Decel Pressure - ≤ C5** see attached supporting tables		
					when clutch 6 is off going clutch: clutch 6 command pressure	= ((clutch 6 pressure control solenoid command pressure - 0.00) * 1.00) - regulator valve return spring pressure adaptive, kPa		
					clutch 6 state is OFF when: clutch 6 command pressure, else clutch is ON and count clutch 6 toward minimum # of clutches ON	**P2D2 Decel Pressure - ≤ C6** see attached supporting tables		
					when clutch 7 is off going clutch: clutch 7 command pressure	= ((clutch 7 pressure control solenoid command pressure - 0.00) * 1.00) - regulator valve return spring pressure adaptive, kPa		
					clutch 7 state is OFF when: clutch 7 command pressure, else clutch is ON and count clutch 7 toward minimum # of clutches ON	**P2D2 Decel Pressure - ≤ C7** see attached supporting tables		
					service fast learn not active			

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					no speed sensor DTCs fault active: P0716, P0717, P0721, P0722, P0723, P077C, P077D, P07BF, P07C0, P172A, P172B, P176B, P176C, P176D, P1783, P178F, P17C4, P17C5, P17C6, P17CC, P17CD, P17CE, P17D3, P17D6 no high side driver DTCs fault active: P0658, P2670			
			command gear/shift fault detection		Reduandant Memory Command Gear Enable Calibraiton Not	= 0 Boolean	command gear fail event count ≥ 3 counts	
			1st gear commanded and vehicle seed OR 2nd gear commanded and vehicle seed OR 3rd gear commanded and vehicle seed OR 4th gear commanded and vehicle seed OR 5th gear commanded and vehicle seed OR 6th gear commanded and vehicle seed OR 7th gear commanded and vehicle seed OR 8th gear commanded and	> 63.22 KPH > 99.44 KPH > 138.33 KPH > 167.81 KPH > 195.29 KPH > 232.82 KPH > 296.85 KPH	Reduandant Memory Command Gear Enable Calibraiton service fast learn not active no speed sensor DTCs fault active: P0716, P0717, P0721, P0722, P0723, P077C, P077D, P07BF, P07C0, P172A, P172B, P176B, P176C, P176D, P1783, P178F, P17C4, P17C5, P17C6, P17CC, P17CD, P17CE, P17D3, P17D6 no high side driver DTCs fault active:	= 1 Boolean	6.25 millisecond update rate	

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
			vehicle seed OR 9th gear commanded and vehicle seed OR 10th gear commanded and vehicle seed THEN increment command gear fail event count and abort commanded gear and delay for time before next fail evaluation	> 347.75 KPH > 430.73 KPH > 466.95 KPH > 5.00 seconds	P0658, P2670			

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Output Speed Sensor Circuit Forward Direction Error	P172A	The TOS sensor is a directional sensor, and raw TOS direction is rationalized based on attained gear and multiple speed sensors. Attained gear is a true indication of gear based on measured gear ratio, TISS/TOSS. If the raw TOS direction is not a forward gear but attained gear is a forward gear, and, TISS and intermediate speed sensors confirm consistent direction, the raw TOS direction is in error.	(raw TOS direction OR raw TIS direction OR intermediate speed sensor 1 direction raw OR intermediate speed sensor 2 direction raw) AND attained gear AND attained gear	≠ forward ≠ forward **intermediate speed sensor 1 or 2** ≠ **predicted direction** **intermediate speed sensor 1 or 2** ≠ **predicted direction** ≥ 1st gear ≤ 10th gear	when the following conditions are met update the enable time: diagnsotic monitor enable TOSS sensor type must be directional engine speed engine speed time battery voltage for time service fast learn active run/crank voltage for time (attained gear AND attained gear) P0721 Fault Active range shift state (auto trans shift complete) enable time	**speed sensor directional rationality** =**enable calibration** = CeTOSR_e_Directional ≥ 500.0 RPM ≥ **engine speed time for transmission hydraulic pressure available** ≥ 9.00 volts ≥ 0.100 seconds = FALSE ≥ 9.00 volt ≥ 0.100 seconds ≥ 1st gear ≤ 10th gear = FALSE = range shift complete ≥ 1.00 seconds	2.50 seconds	Type A, 1 Trips
			(raw TOS direction OR intermediate speed sensor 1 direction raw OR intermediate speed sensor 2 direction raw) AND attained gear AND attained gear	≠ forward **intermediate speed sensor 1 or 2** ≠ **predicted direction** **intermediate speed sensor 1 or 2** ≠ **predicted direction** ≥ 1st gear ≤ 10th gear	when the following conditions are met update the enable time: diagnsotic monitor enable TOSS sensor type must be directional engine speed engine speed time	**speed sensor directional rationality** = **enable calibration** = CeTOSR_e_Directional ≥ 500.0 RPM ≥ **engine speed time for transmission hydraulic pressure available**	2.50 seconds	

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					battery voltage for time service fast learn active run/crank voltage for time (attained gear AND attained gear) P0721 Fault Active range shift state (auto trans shift complete) enable time	≥ 9.00 volts ≥ 0.100 seconds = FALSE ≥ 9.00 volt ≥ 0.100 seconds ≥ 1st gear ≤ 10th gear = FALSE = range shift complete ≥ 1.00 seconds		
			(raw TOS direction OR raw TIS direction OR intermediate speed sensor 2 direction raw) AND attained gear AND attained gear	≠ forward ≠ forward **intermediate speed sensor 1 or 2** ≠ **predicted direction** ≥ 1st gear ≤ 10th gear	when the following conditions are met update the enable time: diagnsotic monitor enable TOSS sensor type must be directional engine speed engine speed time battery voltage for time service fast learn active run/crank voltage for time (attained gear AND attained gear) P0721 Fault Active range shift state (auto trans shift complete)	**speed sensor directional rationality** = **enable calibration** = CeTOSR_e_Directional ≥ 500.0 RPM ≥ **engine speed time for transmission hydraulic pressure available** ≥ 9.00 volts ≥ 0.100 seconds = FALSE ≥ 9.00 volt ≥ 0.100 seconds ≥ 1st gear ≤ 10th gear = FALSE = range shift complete	2.50 seconds	

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					enable time	≥ 1.00 seconds		
			(raw TOS direction OR raw TIS direction OR intermediate speed sensor 1 direction raw) AND attained gear AND attained gear	≠ forward ≠ forward **intermediate speed sensor 1 or 2** ≠ **predicted direction** ≥ 1st gear ≤ 10th gear	when the following conditions are met update the enable time: diagnsotic monitor enable TOSS sensor type must be directional engine speed engine speed time battery voltage for time service fast learn active run/crank voltage for time (attained gear AND attained gear) P0721 Fault Active range shift state (auto trans shift complete) enable time	**speed sensor directional rationality** = **enable calibration** = CeTOSR_e_Directional ≥ 500.0 RPM ≥ **engine speed time for transmission hydraulic pressure available** ≥ 9.00 volts ≥ 0.100 seconds = FALSE ≥ 9.00 volt ≥ 0.100 seconds ≥ 1st gear ≤ 10th gear = FALSE = range shift complete ≥ 1.00 seconds	2.50 seconds	
			(raw TOS direction OR intermediate speed sensor 2 direction raw) AND attained gear AND attained gear	≠ forward **intermediate speed sensor 1 or 2** ≠ **predicted direction** ≥ 1st gear ≤ 10th gear	when the following conditions are met update the enable time: diagnsotic monitor enable TOSS sensor type must be directional engine speed engine speed time	**speed sensor directional rationality** = **enable calibration** = CeTOSR_e_Directional ≥ 500.0 RPM ≥	2.50 seconds	

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
						engine speed time for transmission hydraulic pressure available		
					battery voltage for time service fast learn active run/crank voltage for time (attained gear AND attained gear) P0721 Fault Active range shift state (auto trans shift complete) enable time	≥ 9.00 volts ≥ 0.100 seconds = FALSE ≥ 9.00 volt ≥ 0.100 seconds ≥ 1st gear ≤ 10th gear = FALSE = range shift complete ≥ 1.00 seconds		
			(raw TOS direction OR intermediate speed sensor 1 direction raw) AND attained gear AND attained gear	≠ forward **intermediate speed sensor 1 or 2** ≠ **predicted direction** ≥ 1st gear ≤ 10th gear	when the following conditions are met update the enable time: diagnsotic monitor enable TOSS sensor type must be directional engine speed engine speed time battery voltage for time service fast learn active run/crank voltage for time (attained gear AND attained gear) P0721 Fault Active	**speed sensor directional rationality** = **enable calibration** = CeTOSR_e_Directional ≥ 500.0 RPM ≥ **engine speed time for transmission hydraulic pressure available** ≥ 9.00 volts ≥ 0.100 seconds = FALSE ≥ 9.00 volt ≥ 0.100 seconds ≥ 1st gear ≤ 10th gear = FALSE	2.50 seconds	

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					range shift state (auto trans shift complete) enable time	= range shift complete ≥ 1.00 seconds		
			(raw TOS direction OR raw TIS direction) AND attained gear AND attained gear	≠ forward ≠ forward ≥ 1st gear ≤ 10th gear	when the following conditions are met update the enable time: diagnsotic monitor enable TOSS sensor type must be directional engine speed engine speed time battery voltage for time service fast learn active run/crank voltage for time (attained gear AND attained gear) P0721 Fault Active range shift state (auto trans shift complete) enable time	**speed sensor directional rationality** = **enable calibration** = CeTOSR_e_Directional ≥ 500.0 RPM ≥ **engine speed time for transmission hydraulic pressure available** ≥ 9.00 volts ≥ 0.100 seconds = FALSE ≥ 9.00 volt ≥ 0.100 seconds ≥ 1st gear ≤ 10th gear = FALSE = range shift complete ≥ 1.00 seconds	2.50 seconds	
			raw TOS direction attained gear	≠ forward ≥ 1st gear ≤ 10th gear	when the following conditions are met update the enable time: diagnsotic monitor enable TOSS sensor type must be directional	**speed sensor directional rationality** = **enable calibration** = CeTOSR_e_Directional	2.50 seconds	

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					engine speed engine speed time battery voltage for time service fast learn active run/crank voltage for time (attained gear AND attained gear) P0721 Fault Active range shift state (auto trans shift complete) enable time	≥ 500.0 RPM ≥ **engine speed time for transmission hydraulic pressure available** ≥ 9.00 volts ≥ 0.100 seconds = FALSE ≥ 9.00 volt ≥ 0.100 seconds ≥ 1st gear ≤ 10th gear = FALSE = range shift complete ≥ 1.00 seconds		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Transmission Control System - Shift Limiting Active	P175E	The latent fault diagnostic monitors detects when the vehicle has been driven excessively with an emission MIL request. The DTCs requesting the emission MIL are all due to a safety critical system or component fault present in which a DTC is set fault active, test fail this key on or fault pending (fault pending is fail time ≠ 0). The safety critical systems or safety critical components include: transmission input, output and intermediate speed sensors, transmission range sensors, clutch pressure control solenoids including unintended deceleration detected due to clutch pressure control solenoids, driver accelerator pedal position, engine crankshaft position and engine torque. The DTCs for these safety critical systems or safety critical components include both electrical fault DTCs and performance fault DTCs. The latent fault diagnostic monitor	P0747 OR P0777 OR P0797 OR P2715 OR P2724 OR P2731 OR P2733 fault active due to unintended deceleration detection, increment unintended deceleration latent fault fail count		transmission default gear active (emission MIL active) calibration CeTRDR_e_DSG_DfltGrOpt5_Action any non-zero (0) option	> CeTRDR_e_DSG_DfltGrOptNone, zero (0) element in default gear array	unintended deceleration latent fault fail count ≥ 100 counts 25 millisecond update rate	Type A, 1 Trips
			P0747 OR P0777 OR P0797 OR P2715 OR P2724 OR P2731 OR P2733 clutch pressure control solenoid fault active due to clutch stuck on during shift, increment clutch pressure control solenoid latent fault fail count		transmission default gear active (emission MIL active) calibration CeTRDR_e_DSG_DfltGrOpt5_Action any non-zero (0) option	> CeTRDR_e_DSG_DfltGrOptNone, zero (0) element in default gear array	clutch pressure control solenoid latent fault fail count ≥ 100 counts 25 millisecond update rate	
			P2802 OR P2803 fault active, increment transmission range sensor latent fault fail count		transmission default gear active (emission MIL active) calibration CeTRDR_e_DSG_DfltGrOpt5_Action any non-zero (0) option	> CeTRDR_e_DSG_DfltGrOptNone, zero (0) element in default gear array	transmission range sensor latent fault fail count ≥ 100 counts 25 millisecond update rate	
			P0721 OR P0722 OR P0723 OR P077C OR P077D or P172A fault active, increment transmission output speed sensor latent fault fail count		transmission default gear active (emission MIL active) calibration CeTRDR_e_DSG_DfltGrOpt5_Action any non-zero (0) option	> CeTRDR_e_DSG_DfltGrOptNone, zero (0) element in default gear array	transmission output speed sensor latent fault fail count ≥ 100 counts 25 millisecond update rate	
			P0716 OR P0717 OR P0721 OR P07BF OR P07C0 fault active OR		transmission default gear active (emission MIL active) calibration	>	transmission input output speed sensor latent fault fail	

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
		counts the run/crank ignition cycles before the latent fault DTC is set fault active.	P077D OR P077D OR P1783 OR P17CE fault active OR P0722 OR P0723 OR P172A test fail this key on OR P0716 OR P0717 OR P0721 OR P0722 OR P0723 OR P077C OR P077D OR P07BF OR P07C0 Or P172A OR P172B OR P1783 OR P17CE fault pending (fail time ≠ 0) increment transmission input output speed sensor latent fault fail count		CeTRDR_e_DSG_DfltGr Opt5_Action any non-zero (0) option	CeTRDR_e_DSG_DfltGr OptNone, zero (0) element in default gear array	count ≥ 200 counts 25 millisecond update rate	
			AcceleratorPedalFailure OR EngineTorqueEstInaccurate OR P2534 fault active OR CrankSensor_FA OR P0707 OR P0708 fault active OR test fail this key on OR P2805 fault active OR P0716 OR P0717 OR P07BF OR P07C0 fault active OR P0722 OR P0723 test fail this key on OR P077C OR P077D fault active OR P176C OR P176D OR	= TRUE = TRUE = TRUE	transmission default gear active (emission MIL active) calibration CeTRDR_e_DSG_DfltGr Opt5_Action any non-zero (0) option ignition run crank voltage for time	> CeTRDR_e_DSG_DfltGr OptNone, zero (0) element in default gear array > 5.00 volts ≥ 12.5 milliseconds	system latent fault fail count ≥ 100 counts 6.25 millisecond update rate	

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
			P17CC OR P17CD OR P176B OR P17D6 fault active OR test fail this key on OR P0747 OR P0777 OR P0797 OR P2715 OR P2724 OR P2733 OR P0746 OR P0776 OR P0796 OR P2714 OR P2723 OR P2732 OR P178F OR P17C4 OR P17C6 OR P172A OR P172B test fail this key on OR P0960 OR P0962 OR P0963 OR P0964 OR P0966 OR P0967 OR P0968 OR P0970 OR P0971 OR P2718 OR P2720 OR P2721 OR P2727 OR P2729 OR P2730 OR P2736 OR P2738 OR P2739 OR P17C5 OR P17D3OR P0721 fault active OR P0716 OR P0717 OR P0721 OR P0722 OR P0723 OR P077C OR P077D OR P07BF OR P07C0 fault pending (fail time ≠ 0) OR P176B OR P176C OR P176D OR P17CC OR P17CD OR P17D6 OR P1783 OR P178F OR P17C4 OR P17C5 OR P17C6 OR P17CE OR P17D3 OR P172A or P172B fault pending (fail					

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
			time ≠ 0) OR P1783 fault active OR P1783 fault pending (fail time ≠ 0) update system fault time when system fault time increment system latent fault fail count	 ≥ 10.0 seconds				

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Acceleration Sensor Signal Message Counter Incorrect	P175F	The diagnostic monitor detects an alive rolling count error or checksum error in the CAN frame containing the lateral acceleration signal value and longitudinal acceleration sensor signal value. Emission neutral default state sets lateral and longitudinal acceleration signal = 0.0 g.	rolling count value received from EBCM and expected TCM calculated value not equal OR checksum lateral and longitudinal acceleration CAN frame message value error 50 millisecond update rate	= TRUE = TRUE	enable alive rolling count error detection: diagnostic monitor enable lateral and longitudinal acceleration CAN frame message received battery voltage run crank voltage enable checksum error detection: diagnostic monitor enable lateral and longitudinal acceleration CAN frame message received normal CAN battery voltage run crank voltage communication enabled DTCs not fault active	= 1 Boolean = TRUE ≥ 11.0 volts ≥ 11.0 volts = 1 Boolean = TRUE ≥ 11.0 volts ≥ 11.0 volts = TRUE U0073	alive rolling count errors ≥ 54 out of 9 sample counts 50 millisecond update rate checksum error time ≥ 54.00 seconds	Emissions Neutral Diagnostic – Type C

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Up and Down Shift Switch Signal Circuit	P1761	The alive rolling count normally cycles 0, 1, 2, and 3 as a serial data periodic frame is processed normally. The diagnostic monitor counts the number of times an alive rolling count error occurs over a period of time. The TCM receives a serial data frame at a periodic rate, during which, the receive data is processed the comparing the current value of the alive rolling count in the frame date to the incremented value of the diagnostic alive rolling count. When the two values of the alive rolling count do not agree, an alive rolling count error has occurred. The error indicator is saved in an array buffer, and when the number of error indicators in the buffer exceed the fail threshold the fail time is allowed to time up. Emissions neutral default, disables tap-up tap-down or manual-up manual-down.	alive rolling count error counter update fail time 100 millisecond update rate	≥ 3 counts	service mode $04 active diagnostic monitor enable run crank voltage run crank voltage time up and down shift serial data frame receive occurred when up and down shift serial data frame receive occurred: increment the diagnsotic alive rolling count data value, if the diagnsotic alive rolling count data value, set alive rolling count error to TRUE, when alive rolling count error AND previous alive rolling count error in 10 element arrary buffer, increment alive rolling count error counter	= FALSE = 1 Boolean ≥ 9.00 volts ≥ 0.100 seconds = TRUE ≠ frame alive rolling count data value = TRUE = FALSE	fail time ≥ 10.00 seconds	Emissions Neutral Diagnostics – Type C

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Transmission Planetary Gearset Ring Gear Speed Sensor Circuit Range/ Performance	P176B	The diagnostic monitor rationalizes the transmission intermediate shaft speed sensor by using the transmission output shaft output speed sensor and the known ratio between the transmission intermediate shaft speed and the transmission output shaft output speed based on the commanded gear and the transmission lever node design. The estimated transmission intermediate shaft speed is equal to the gear ratio times the transmission output shaft output speed. The absolute value of the delta between the measured transmission intermediate shaft speed and the estimated transmission intermediate shaft speed is used to determine if the measured transmission intermediate shaft speed is rational.	delta1 = ABS (transmission input speed - (transmission output speed * gear ratio commanded)) update faiil time 25 millisecond update rate	> 10.0 RPM	diagnostic monitor enable speed sensor configuration calibration is single OR dual ratio calibration is function of command gear and intermediate speed sesnor when not REVERSE ratio calibration is function of command gear and intermediate speed sesnor when REVERSE ****************************** delay time updates when: estimated transmission intermediate speed (transmission input speed / ratio calibration)	= 1 Boolean = CeTNSR_e_NSPD_DualSpdSnsr = **P176B ratio calibration when not REVERSE** see supporting tables = **P176B ratio calibration when REVERSE** see supporting tables ****************************** ≥ **P176B minimum estimated transmission intermediate speed to enable fail evaluation**	fail time ≥ **P176B intermediate speed sensor fail time threshold** see supporting tables fail time threshold met increments fail count, fail count ≥ **P176B intermediate speed sensor fail count threshold** see supporting tables ****************** delay time ≥	Type A, 1 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					with	see supporting tables	**P176B delay to allow transmission input, intermediate and output speeds to stablize for fail evaluation** see supporting tables	
					transmission input speed	≥ **P176B minimum transmission input speed to enable fail evaluation**		
					input speed sensor ready based on commaned gear and transmission intermediate speed sensor (state output must be FALSE to enable fail evaluation)	see supporting tables		
					with	= **P176B holding clutch states** see supporting tables		
					with attained gear	= REVERSE OR = 1st thru 10th		
					****************************	*****************************		
					transmission input speed	≥ 240.0 RPM		
					transmission output speed	≥ 36.0 RPM		
					range shift state	= range shift complete		
					P0716 fault active	= FALSE		
					P0717 fault active	= FALSE		
					P07BF fault active	= FALSE		
					P07C0 fault active	= FALSE		
					P0722 fault active	= FALSE		
					P0723 fault active	= FALSE		
					P077C fault active	= FALSE		
					P077D fault active	= FALSE		
					P176C fault active	= FALSE		
					P176D fault active	= FALSE		
					battery voltage	≥ 9.00 volts		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					service fast learn active run crank voltage hydraulic pressure avail	= FALSE ≥ 9.00 volts = TRUE	battery voltage time ≥ 0.100 seconds run crank voltage time ≥ 0.100 seconds	

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Transmission Planetary Gearset Ring Gear Speed Sensor Circuit Low	P176C	Controller specific analog circuit diagnoses the transmission intermediate speed sensor and wiring for a short to ground fault by comparing a voltage measurement to controller specific voltage thresholds.	transmission intermediate speed sesnor raw voltage, update fail time, 12.5 millisecond update rate	≤ volts (≤ 0.5 Ω impedance between signal and controller ground)	service mode $04 active diagnostic monitor enable P176D fault active service fast learn run crank voltage battery voltage P176C fault active P176C test fail this key on	= FALSE = **P176C Enable Boolean** Boolean = FALSE = FALSE ≥ 10.00 volts ≥ 10.00 volts = FALSE = FALSE	fail time ≥ **P176C Fail Timer** seconds, update fail count, fail count ≥ **P176C Fail Count Threshold** counts 6.25 millisecond update rate run crank and battery voltage time ≥ 5.000 seconds	Type A, 1 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Transmission Planetary Gearset Ring Gear Speed Sensor Circuit High	P176D	Controller specific analog circuit diagnoses the transmission intermediate speed sensor and wiring for a short to voltage fault by comparing a voltage measurement to controller specific voltage thresholds.	transmission intermediate speed sesnor raw voltage, update fail time, 12.5 millisecond update rate	**P176D Voltage Fail ≥Threshold** volts (≤ 0.5 Ω impedance between signal and controller power)	service mode $04 active diagnostic monitor enable P176C fault active service fast learn run crank voltage battery voltage P176D fault active P176D test fail this key on	= FALSE = **P176D Boolean Enable** Boolean = FALSE = FALSE ≥ 10.00 volts ≥ 10.00 volts = FALSE = FALSE	fail time ≥ **P176D Fail Time Threshold** seconds, update fail count, fail count ≥ **P176D Fail Count Threshold** counts 6.25 millisecond update rate run crank and battery voltage time ≥ 5.000 seconds	Type A, 1 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
ETRS GMLAN Command Signal Message Incorrect	P1775	The diagnostic monitor detects an alive rolling count error or protection value (checksum) error in the CAN bus frame containing the Electronic Transmission Range Selector (ETRS) signal data. The alive rolling count sequences 0, 1, 2, 3 repeatedly. As each serial data frame is broadcast by the transmitting controller, the transmitting controller increments the alive rolling count in this sequence manner. The receiving controller compares the most recent received alive rolling count value to the previous value plus one. If the values are not equal, an alive rolling count error has occurred. The protection value is based on the checksum of the ETRS data parameters in the transmit message frame, and is incorporated in the transmit message frame. If the TCM receives the ECM/ CHCM ETRS data message frame, the	rolling count value received from ECM/ CHCM and expected TCM calculated value not equal	= TRUE	Loop rate calibration either 10 milliseconds or 12.5 milliseconds service mode $04 active battery voltage battery voltage time ETRS ECM/CH frame recieved	CeCFMD_e_DEC_Time Base_12p5 = FALSE ≥ 11.00 volts ≥ 300.000 seconds = TRUE	alive rolling count errors ≥ 8 out of 10 sample counts	Type B, 2 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
		TCM calculates the protection value, again based on the ETRS data parameters, in the receive message frame. If the TCM calculated protection value does not equal the protection value incorporated in the ECM/CHCM ETRS data message frame, a or protection value error has occurred. If continuous alive rolling count errors or protection value errors occur, the DTC is set.						

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Input Speed Sensor Direction Not Plausible - Forward	P1783	The TIS sensor is a directional sensor, and raw TIS direction is rationalized based on attained gear and multiple speed sensors. Attained gear is a true indication of gear based on measured gear ratio, TISS/TOSS. If the raw TIS direction is not reverse but attained gear is reverse, or, if the raw TIS direction is not forward but attained gear is a forward gear, the raw TIS direction is in error.	raw TIS direction AND attained gear	≠ FORWARD = REVERSE	when the following conditions are met update the enable time: diagnsotic monitor enable TOSS sensor type must be directional engine speed engine speed time battery voltage for time service fast learn active run/crank voltage for time attained gear P0721 Fault Active range shift state (auto trans shift complete) enable time	**speed sensor directional rationality** = **enable calibration** = CeTOSR_e_Directional ≥ 500.0 RPM ≥ **engine speed time for transmission hydraulic pressure available** seconds ≥ 9.00 volts ≥ 0.100 seconds = FALSE ≥ 9.00 volt ≥ 0.100 seconds = REVERSE = FALSE = range shift complete ≥ 1.00 seconds	2.50 seconds	Type A, 1 Trips
			raw TIS direction AND attained gear AND attained gear	≠ FORWARD ≥ 1st gear ≤ 10th gear	when the following conditions are met update the enable time: diagnsotic monitor enable TOSS sensor type must be directional engine speed engine speed time battery voltage	**speed sensor directional rationality** = **enable calibration** = CeTOSR_e_Directional ≥ 500.0 RPM ≥ **engine speed time for transmission hydraulic pressure available** seconds ≥ 9.00 volts	2.50 seconds	

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					for time service fast learn active run/crank voltage for time attained gear P0721 Fault Active range shift state (auto trans shift complete) enable time	≥ 0.100 seconds = FALSE ≥ 9.00 volt ≥ 0.100 seconds = REVERSE = FALSE = range shift complete ≥ 1.00 seconds		
			intermediate speed sensor 1 direction raw AND TIS direction AND attained gear	**intermediate speed sensor 1 or 2 ≠ predicted direction** ≠ FORWARD = REVERSE	when the following conditions are met update the enable time: diagnsotic monitor enable TOSS sensor type must be directional engine speed engine speed time battery voltage for time service fast learn active run/crank voltage for time attained gear P0721 Fault Active range shift state (auto trans shift complete) enable time	**speed sensor directional rationality = enable calibration** = CeTOSR_e_Directional ≥ 500.0 RPM ≥ **engine speed time for transmission hydraulic pressure available** seconds ≥ 9.00 volts ≥ 0.100 seconds = FALSE ≥ 9.00 volt ≥ 0.100 seconds = REVERSE = FALSE = range shift complete ≥ 1.00 seconds	2.50 seconds	
			intermediate speed sensor 1 direction raw	**intermediate speed sensor 1 or 2 ≠ predicted direction**	when the following conditions are met update the enable time: diagnsotic monitor enable	**speed sensor directional rationality = enable calibration**	2.50 seconds	

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
			AND raw TIS direction AND attained gear AND attained gear	≠ FORWARD ≥ 1st gear ≤ 10th gear	TOSS sensor type must be directional engine speed engine speed time battery voltage for time service fast learn active run/crank voltage for time attained gear P0721 Fault Active range shift state (auto trans shift complete) enable time	= CeTOSR_e_Directional ≥ 500.0 RPM ≥ **engine speed time for transmission hydraulic pressure available** seconds ≥ 9.00 volts ≥ 0.100 seconds = FALSE ≥ 9.00 volt ≥ 0.100 seconds = REVERSE = FALSE = range shift complete ≥ 1.00 seconds		
			intermediate speed sensor 2 direction raw AND TIS direction AND attained gear	**intermediate speed sensor 1 or 2** ≠ **predicted direction** ≠ FORWARD = REVERSE	when the following conditions are met update the enable time: diagnsotic monitor enable TOSS sensor type must be directional engine speed engine speed time battery voltage for time service fast learn active run/crank voltage for time	**speed sensor directional rationality** = **enable calibration** = CeTOSR_e_Directional ≥ 500.0 RPM ≥ **engine speed time for transmission hydraulic pressure available** seconds ≥ 9.00 volts ≥ 0.100 seconds = FALSE ≥ 9.00 volt ≥ 0.100 seconds	2.50 seconds	

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					attained gear P0721 Fault Active range shift state (auto trans shift complete) enable time	= REVERSE = FALSE = range shift complete ≥ 1.00 seconds		
			intermediate speed sensor 2 direction raw AND raw TIS direction AND attained gear AND attained gear	**intermediate speed sensor 1 or 2** ≠ **predicted direction** ≠ FORWARD ≥ 1st gear ≤ 10th gear	when the following conditions are met update the enable time: diagnsotic monitor enable TOSS sensor type must be directional engine speed engine speed time battery voltage for time service fast learn active run/crank voltage for time attained gear P0721 Fault Active range shift state (auto trans shift complete) enable time	**speed sensor directional rationality** = **enable calibration** = CeTOSR_e_Directional ≥ 500.0 RPM ≥ **engine speed time for transmission hydraulic pressure available** seconds ≥ 9.00 volts ≥ 0.100 seconds = FALSE ≥ 9.00 volt ≥ 0.100 seconds = REVERSE = FALSE = range shift complete ≥ 1.00 seconds	2.50 seconds	
			(intermediate speed sensor 1 direction raw OR intermediate speed sensor 2 direction raw)	**intermediate speed sensor 1 or 2** ≠ **predicted direction** **intermediate speed sensor 1 or 2** ≠ **predicted direction**	when the following conditions are met update the enable time: diagnsotic monitor enable TOSS sensor type must be directional engine speed	**speed sensor directional rationality** = **enable calibration** = CeTOSR_e_Directional ≥ 500.0 RPM	2.50 seconds	

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
			AND TIS direction AND attained gear	 ≠ FORWARD = REVERSE	engine speed time battery voltage for time service fast learn active run/crank voltage for time attained gear P0721 Fault Active range shift state (auto trans shift complete) enable time	≥ **engine speed time for transmission hydraulic pressure available** seconds ≥ 9.00 volts ≥ 0.100 seconds = FALSE ≥ 9.00 volt ≥ 0.100 seconds = REVERSE = FALSE = range shift complete ≥ 1.00 seconds		
			(intermediate speed sensor 1 direction raw OR intermediate speed sensor 2 direction raw) AND raw TIS direction AND attained gear AND attained gear	**intermediate speed sensor 1 or 2** ≠ **predicted direction** **intermediate speed sensor 1 or 2** ≠ **predicted direction** ≠ FORWARD ≥ 1st gear ≤ 10th gear	when the following conditions are met update the enable time: diagnsotic monitor enable TOSS sensor type must be directional engine speed engine speed time battery voltage for time service fast learn active run/crank voltage for time attained gear P0721 Fault Active range shift state (auto	 **speed sensor directional rationality** = **enable calibration** = CeTOSR_e_Directional ≥ 500.0 RPM ≥ **engine speed time for transmission hydraulic pressure available** seconds ≥ 9.00 volts ≥ 0.100 seconds = FALSE ≥ 9.00 volt ≥ 0.100 seconds = REVERSE = FALSE = range shift complete	2.50 seconds	

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125; FED--BIN125

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					trans shift complete)			
					enable time	≥ 1.00 seconds		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Intermediate Speed Sensor 1 Direction Not Plausible - Forward	P178F	The intermediate speed sensor 1 is a directional sensor, and raw intermediate speed sensor 1 direction is rationalized based on attained gear. Attained gear is a true indication of gear based on measured gear ratio, TISS/TOSS. Intermediate speed sensor 1 direction can be predicted, based on a function of the attained gear. When the raw intermediate speed sensor 1 direction does not correlate to the predicted direction and does not correlate to the attained gear, the intermediate speed sensor 1 directional is in error.	intermediate speed sensor 1 direction raw AND attained gear	**intermediate speed sensor 1 or 2** ≠ **predicted direction** = REVERSE	when the following conditions are met update the enable time: diagnsotic monitor enable TOSS sensor type must be directional engine speed engine speed time battery voltage for time service fast learn active run/crank voltage for time attained gear P0721 Fault Active range shift state (auto trans shift complete) enable time	**speed sensor directional rationality** = **enable calibration** = CeTOSR_e_Directional ≥ 500.0 RPM ≥ **engine speed time for transmission hydraulic pressure available** seconds ≥ 9.00 volts ≥ 0.100 seconds = FALSE ≥ 9.00 volt ≥ 0.100 seconds = REVERSE = FALSE = range shift complete ≥ 1.00 seconds	2.50 seconds	Type A, 1 Trips
			intermediate speed sensor 1 direction raw AND attained gear AND attained gear	**intermediate speed sensor 1 or 2** ≠ **predicted direction** ≥ 1st gear ≤ 10th gear	when the following conditions are met update the enable time: diagnsotic monitor enable TOSS sensor type must be directional engine speed engine speed time battery voltage	**speed sensor directional rationality** = **enable calibration** = CeTOSR_e_Directional ≥ 500.0 RPM ≥ **engine speed time for transmission hydraulic pressure available** seconds ≥ 9.00 volts	2.50 seconds	

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					for time service fast learn active run/crank voltage for time attained gear P0721 Fault Active range shift state (auto trans shift complete) enable time	≥ 0.100 seconds = FALSE ≥ 9.00 volt ≥ 0.100 seconds = REVERSE = FALSE = range shift complete ≥ 1.00 seconds		
			intermediate speed sensor 1 direction raw AND TIS direction AND attained gear	**intermediate speed sensor 1 or 2** ≠ **predicted direction** ≠ FORWARD = REVERSE	when the following conditions are met update the enable time: diagnsotic monitor enable TOSS sensor type must be directional engine speed engine speed time battery voltage for time service fast learn active run/crank voltage for time attained gear P0721 Fault Active range shift state (auto trans shift complete) enable time	**speed sensor directional rationality** = **enable calibration** = CeTOSR_e_Directional ≥ 500.0 RPM ≥ **engine speed time for transmission hydraulic pressure available** seconds ≥ 9.00 volts ≥ 0.100 seconds = FALSE ≥ 9.00 volt ≥ 0.100 seconds = REVERSE = FALSE = range shift complete ≥ 1.00 seconds	2.50 seconds	
			intermediate speed sensor 1 direction raw	**intermediate speed sensor 1 or 2** ≠ **predicted direction**	when the following conditions are met update the enable time: diagnsotic monitor enable	**speed sensor directional rationality** = **enable calibration**	2.50 seconds	

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
			AND raw TIS direction AND attained gear AND attained gear	≠ FORWARD ≥ 1st gear ≤ 10th gear	TOSS sensor type must be directional engine speed engine speed time battery voltage for time service fast learn active run/crank voltage for time attained gear P0721 Fault Active range shift state (auto trans shift complete) enable time	= CeTOSR_e_Directional ≥ 500.0 RPM ≥ **engine speed time for transmission hydraulic pressure available** seconds ≥ 9.00 volts ≥ 0.100 seconds = FALSE ≥ 9.00 volt ≥ 0.100 seconds = REVERSE = FALSE = range shift complete ≥ 1.00 seconds		
			(intermediate speed sensor 1 direction raw OR intermediate speed sensor 2 direction raw) AND attained gear	≠ **intermediate speed sensor 1 or 2 predicted direction** ≠ **intermediate speed sensor 1 or 2 predicted direction** = REVERSE	when the following conditions are met update the enable time: diagnsotic monitor enable TOSS sensor type must be directional engine speed engine speed time battery voltage for time service fast learn active run/crank voltage for time	= **speed sensor directional rationality enable calibration** = CeTOSR_e_Directional ≥ 500.0 RPM ≥ **engine speed time for transmission hydraulic pressure available** seconds ≥ 9.00 volts ≥ 0.100 seconds = FALSE ≥ 9.00 volt ≥ 0.100 seconds	2.50 seconds	

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					attained gear P0721 Fault Active range shift state (auto trans shift complete) enable time	= REVERSE = FALSE = range shift complete ≥ 1.00 seconds		
			(intermediate speed sensor 1 direction raw OR intermediate speed sensor 2 direction raw) AND attained gear AND attained gear	**intermediate speed sensor 1 or 2** ≠ **predicted direction** **intermediate speed sensor 1 or 2** ≠ **predicted direction** ≥ 1st gear ≤ 10th gear	when the following conditions are met update the enable time: diagnsotic monitor enable TOSS sensor type must be directional engine speed engine speed time battery voltage for time service fast learn active run/crank voltage for time attained gear P0721 Fault Active range shift state (auto trans shift complete) enable time	**speed sensor directional rationality** = **enable calibration** = CeTOSR_e_Directional ≥ 500.0 RPM ≥ **engine speed time for transmission hydraulic pressure available** seconds ≥ 9.00 volts ≥ 0.100 seconds = FALSE ≥ 9.00 volt ≥ 0.100 seconds = REVERSE = FALSE = range shift complete ≥ 1.00 seconds	2.50 seconds	
			(intermediate speed sensor 1 direction raw OR intermediate speed sensor 2 direction raw OR	**intermediate speed sensor 1 or 2** ≠ **predicted direction** **intermediate speed sensor 1 or 2** ≠ **predicted direction**	when the following conditions are met update the enable time: diagnsotic monitor enable TOSS sensor type must be directional engine speed	**speed sensor directional rationality** = **enable calibration** = CeTOSR_e_Directional ≥ 500.0 RPM	2.50 seconds	

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
			TIS direction) AND attained gear	≠ FORWARD = REVERSE	engine speed time battery voltage for time service fast learn active run/crank voltage for time attained gear P0721 Fault Active range shift state (auto trans shift complete) enable time	≥ **engine speed time for transmission hydraulic pressure available** seconds ≥ 9.00 volts ≥ 0.100 seconds = FALSE ≥ 9.00 volt ≥ 0.100 seconds = REVERSE = FALSE = range shift complete ≥ 1.00 seconds		
			(intermediate speed sensor 1 direction raw OR intermediate speed sensor 2 direction raw OR TIS direction) AND attained gear AND attained gear	≠ **intermediate speed sensor 1 or 2 predicted direction** ≠ **intermediate speed sensor 1 or 2 predicted direction** ≠ FORWARD ≥ 1st gear ≤ 10th gear	when the following conditions are met update the enable time: diagnsotic monitor enable TOSS sensor type must be directional engine speed engine speed time battery voltage for time service fast learn active run/crank voltage for time attained gear P0721 Fault Active range shift state (auto	= **speed sensor directional rationality enable calibration** = CeTOSR_e_Directional ≥ 500.0 RPM ≥ **engine speed time for transmission hydraulic pressure available** seconds ≥ 9.00 volts ≥ 0.100 seconds = FALSE ≥ 9.00 volt ≥ 0.100 seconds = REVERSE = FALSE = range shift complete	2.50 seconds	

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					trans shift complete)			
					enable time	≥ 1.00 seconds		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Intermediate Speed Sensor 2 Performance	P17C5	The diagnostic monitor determines if the direction transmission intermediate speed sensor value is coherent based on the on period time of the directional sensor and raw speed sensor value. When the on period time indicates a transitional state, the direction must also be transitional as measured by very slow raw signal RPM. When the on period time indicates a non-transitional state, forward or reverse, the direction must also be transition, not forward and not reverse.	when: (intermediate speed sensor raw direction when transitional period = FALSE AND intermediate speed sensor raw direction when transitional period = FALSE) OR intermediate speed sesnor raw when transitional period = TRUE update fail and sample time	≠ FORWARD ≠ REVERSE **P17C5 P17D3 intermediate speed ≥ sensor RPM**	service mode $04 active diagnostic monitor enable intermediate speed sesnor count sample period P17C5 fault active OR P17C5 test fail this key on senor type cailbration (senor type is directional) transitional period detected = FALSE when: on period OR on period when direction unknown OR on period on period when direction is reverse OR on period on period when direction is forward transitional period detected = TRUE when: on period on period when direction unknown	= FALSE = 1 Boolean ≠ 0 counts = FALSE = FALSE = CeTNSR_e_NSPD_DualSpdSnsr ≥ 0.4434 seconds ≤ 0.2773 seconds < 0.2363 seconds > 0.1240 seconds < 0.0811 seconds > 0.0088 seconds < 0.4434 seconds > 0.2773 seconds	fail time ≥ 3.500 seconds out of sample time < 5.000 seconds 6.25 millisecond update	Type A, 1 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Intermediate Speed Sensor 2 Direction Not Plausible - Forward	P17C6	The intermediate speed sensor 2 is a directional sensor, and raw intermediate speed sensor 2 direction is rationalized based on attained gear. Attained gear is a true indication of gear based on measured gear ratio, TISS/TOSS. Intermediate speed sensor 2 direction can be predicted, based on a function of the attained gear. When the raw intermediate speed sensor 2 direction does not correlate to the predicted direction and does not correlate to the attained gear, the intermediate speed sensor 2 directional is in error.	intermediate speed sensor 2 direction raw AND attained gear	**intermediate speed sensor 1 or 2** ≠ **predicted direction** = REVERSE	when the following conditions are met update the enable time: diagnsotic monitor enable TOSS sensor type must be directional engine speed engine speed time battery voltage for time service fast learn active run/crank voltage for time attained gear P0721 Fault Active range shift state (auto trans shift complete) enable time	**speed sensor directional rationality** = **enable calibration** = CeTOSR_e_Directional ≥ 500.0 RPM ≥ **engine speed time for transmission hydraulic pressure available** seconds ≥ 9.00 volts ≥ 0.100 seconds = FALSE ≥ 9.00 volt ≥ 0.100 seconds = REVERSE = FALSE = range shift complete ≥ 1.00 seconds	2.50 seconds	Type A, 1 Trips
			intermediate speed sensor 2 direction raw AND attained gear AND attained gear	**intermediate speed sensor 1 or 2** ≠ **predicted direction** ≥ 1st gear ≤ 10th gear	when the following conditions are met update the enable time: diagnsotic monitor enable TOSS sensor type must be directional engine speed engine speed time battery voltage	**speed sensor directional rationality** = **enable calibration** = CeTOSR_e_Directional ≥ 500.0 RPM ≥ **engine speed time for transmission hydraulic pressure available** seconds ≥ 9.00 volts	2.50 seconds	

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					for time service fast learn active run/crank voltage for time attained gear P0721 Fault Active range shift state (auto trans shift complete) enable time	≥ 0.100 seconds = FALSE ≥ 9.00 volt ≥ 0.100 seconds = REVERSE = FALSE = range shift complete ≥ 1.00 seconds		
			intermediate speed sensor 2 direction raw AND TIS direction AND attained gear	**intermediate speed sensor 1 or 2** ≠ **predicted direction** ≠ FORWARD = REVERSE	when the following conditions are met update the enable time: diagnsotic monitor enable TOSS sensor type must be directional engine speed engine speed time battery voltage for time service fast learn active run/crank voltage for time attained gear P0721 Fault Active range shift state (auto trans shift complete) enable time	**speed sensor directional rationality** = **enable calibration** = CeTOSR_e_Directional ≥ 500.0 RPM ≥ **engine speed time for transmission hydraulic pressure available** seconds ≥ 9.00 volts ≥ 0.100 seconds = FALSE ≥ 9.00 volt ≥ 0.100 seconds = REVERSE = FALSE = range shift complete ≥ 1.00 seconds	2.50 seconds	
			intermediate speed sensor 2 direction raw	**intermediate speed sensor 1 or 2** ≠ **predicted direction**	when the following conditions are met update the enable time: diagnsotic monitor enable	**speed sensor directional rationality** = **enable calibration**	2.50 seconds	

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
			AND raw TIS direction AND attained gear AND attained gear	≠ FORWARD ≥ 1st gear ≤ 10th gear	TOSS sensor type must be directional engine speed engine speed time battery voltage for time service fast learn active run/crank voltage for time attained gear P0721 Fault Active range shift state (auto trans shift complete) enable time	= CeTOSR_e_Directional ≥ 500.0 RPM ≥ **engine speed time for transmission hydraulic pressure available** seconds ≥ 9.00 volts ≥ 0.100 seconds = FALSE ≥ 9.00 volt ≥ 0.100 seconds = REVERSE = FALSE = range shift complete ≥ 1.00 seconds		
			(intermediate speed sensor 1 direction raw OR intermediate speed sensor 2 direction raw) AND attained gear	**intermediate speed sensor 1 or 2** ≠ **predicted direction** **intermediate speed sensor 1 or 2** ≠ **predicted direction** = REVERSE	when the following conditions are met update the enable time: diagnsotic monitor enable TOSS sensor type must be directional engine speed engine speed time battery voltage for time service fast learn active run/crank voltage for time	**speed sensor directional rationality** = **enable calibration** = CeTOSR_e_Directional ≥ 500.0 RPM ≥ **engine speed time for transmission hydraulic pressure available** seconds ≥ 9.00 volts ≥ 0.100 seconds = FALSE ≥ 9.00 volt ≥ 0.100 seconds	2.50 seconds	

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					attained gear P0721 Fault Active range shift state (auto trans shift complete) enable time	= REVERSE = FALSE = range shift complete ≥ 1.00 seconds		
			(intermediate speed sensor 1 direction raw OR intermediate speed sensor 2 direction raw) AND attained gear AND attained gear	**intermediate speed sensor 1 or 2 ≠ predicted direction** **intermediate speed sensor 1 or 2 ≠ predicted direction** ≥ 1st gear ≤ 10th gear	when the following conditions are met update the enable time: diagnsotic monitor enable TOSS sensor type must be directional engine speed engine speed time battery voltage for time service fast learn active run/crank voltage for time attained gear P0721 Fault Active range shift state (auto trans shift complete) enable time	**speed sensor directional rationality = enable calibration** = CeTOSR_e_Directional ≥ 500.0 RPM ≥ **engine speed time for transmission hydraulic pressure available** seconds ≥ 9.00 volts ≥ 0.100 seconds = FALSE ≥ 9.00 volt ≥ 0.100 seconds = REVERSE = FALSE = range shift complete ≥ 1.00 seconds	2.50 seconds	
			(intermediate speed sensor 1 direction raw OR intermediate speed sensor 2 direction raw OR	**intermediate speed sensor 1 or 2 ≠ predicted direction** **intermediate speed sensor 1 or 2 ≠ predicted direction**	when the following conditions are met update the enable time: diagnsotic monitor enable TOSS sensor type must be directional engine speed	**speed sensor directional rationality = enable calibration** = CeTOSR_e_Directional ≥ 500.0 RPM	2.50 seconds	

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
			TIS direction) AND attained gear	≠ FORWARD = REVERSE	engine speed time battery voltage for time service fast learn active run/crank voltage for time attained gear P0721 Fault Active range shift state (auto trans shift complete) enable time	≥ **engine speed time for transmission hydraulic pressure available** seconds ≥ 9.00 volts ≥ 0.100 seconds = FALSE ≥ 9.00 volt ≥ 0.100 seconds = REVERSE = FALSE = range shift complete ≥ 1.00 seconds		
			(intermediate speed sensor 1 direction raw OR intermediate speed sensor 2 direction raw OR TIS direction) AND attained gear AND attained gear	**intermediate speed sensor 1 or 2** ≠ **predicted direction** **intermediate speed sensor 1 or 2** ≠ **predicted direction** ≠ FORWARD ≥ 1st gear ≤ 10th gear	when the following conditions are met update the enable time: diagnsotic monitor enable TOSS sensor type must be directional engine speed engine speed time battery voltage for time service fast learn active run/crank voltage for time attained gear P0721 Fault Active range shift state (auto	**speed sensor directional rationality** = **enable calibration** = CeTOSR_e_Directional ≥ 500.0 RPM ≥ **engine speed time for transmission hydraulic pressure available** seconds ≥ 9.00 volts ≥ 0.100 seconds = FALSE ≥ 9.00 volt ≥ 0.100 seconds = REVERSE = FALSE = range shift complete	2.50 seconds	

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					trans shift complete)			
					enable time	≥ 1.00 seconds		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Transmission Intermediate Speed Sensor B Circuit Low	P17CC	Controller specific analog circuit diagnoses the transmission intermediate speed sensor and wiring for a short to ground fault by comparing a voltage measurement to controller specific voltage thresholds.	transmission intermediate speed sensor raw voltage, update fail time, 12.5 millisecond update rate	≤ 0.250 volts (≤ 0.5 Ω impedance between signal and controller ground)	service mode $04 active diagnostic monitor enable P17CD fault active service fast learn run crank voltage battery voltage sensor configuration is single OR dual P17CC fault active OR P17CC test fail this key on	= FALSE = 1 Boolean = FALSE = FALSE ≥ 10.00 volts ≥ 10.00 volts = CeTNSR_e_NSPD_DualSpdSnsr = FALSE = FALSE	fail time ≥ 0.050 seconds, update fail count 12.5 millisecond update rate fail count ≥ 40 counts 12.5 millisecond update rate service fast learn, run crank and battery voltage time ≥ 5.000 seconds	Type A, 1 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Transmission Intermediate Speed Sensor B Circuit High	P17CD	Controller specific analog circuit diagnoses the transmission intermediate speed sensor and wiring for a short to voltage fault by comparing a voltage measurement to controller specific voltage thresholds.	transmission intermediate speed sesnor raw voltage, update fail time, 12.5 millisecond update rate	≥ 4.750 volts (≤ 0.5 Ω impedance between signal and controller power)	service mode $04 active diagnostic monitor enable P17CC fault active service fast learn run crank voltage battery voltage sensor configuration is single OR dual P17CD fault active OR P17CD test fail this key on	= FALSE = 1 Boolean = FALSE = FALSE ≥ 10.00 volts ≥ 10.00 volts = CeTNSR_e_NSPD_DualSpdSnsr = FALSE = FALSE	fail time ≥ 0.050 seconds, update fail count 12.5 millisecond update rate fail count ≥ 40 counts 12.5 millisecond update rate run crank and battery voltage time ≥ 5.000 seconds	Type A, 1 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Input Speed Sensor Direction Error	P17CE	The diagnostic monitor determines if the direction transmission input shaft speed sensor value is coherent based on the on period time of the directional sensor and raw speed sensor value. When the on period time indicates a transitional state, the direction must also be transitional as measured by very slow raw signal RPM. When the on period time indicates a non-transitional state, forward or reverse, the direction must also be transition, not forward and not reverse.	input shaft speed sesnor raw direction AND input shaft speed sesnor raw direction when transitional period = FALSE OR input shaft speed sesnor raw when transitional period = TRUE update fail and sample time, update rate defined in Secondary Parameters	≠ FORWARD ≠ REVERSE ≥ 225.0 RPM	determine update rate: 6.25 millisecond update rate calibration, TRUE, update rate = 6.25 millisecond FALSE, update rate = 25 millisecond service mode $04 active diagnostic monitor enable input shaft speed sesnor count sample period senor type cailbration (senor type is directional) P17CE fault active OR P17CE test fail this key on transitional period detected = FALSE when: on period OR on period when direction unknown OR on period on period when direction is reverse OR on period on period when direction is forward transitional period detected = TRUE when: on period on period when direction unknown	= 1 Boolean = FALSE = 1 Boolean ≠ 0 counts = CeTISR_e_Directional = FALSE = FALSE ≥ 0.4434 seconds ≤ 0.2773 seconds < 0.2363 seconds > 0.1240 seconds < 0.0811 seconds > 0.0088 seconds < 0.4434 seconds > 0.2773 seconds	fail time ≥ 3.500 seconds out of sample time < 5.000 seconds update rate defined in Secondary Parameters	Type A, 1 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Intermediate Speed Sensor 1 Direction Error	P17D3	The diagnostic monitor determines if the direction transmission intermediate speed sensor value is coherent based on the on period time of the directional sensor and raw speed sensor value. When the on period time indicates a transitional state, the direction must also be transitional as measured by very slow raw signal RPM. When the on period time indicates a non-transitional state, forward or reverse, the direction must also be transition, not forward and not reverse.	intermediate speed sesnor raw direction when transitional period = FALSE AND intermediate speed sesnor raw direction when transitional period = FALSE OR intermediate speed sesnor raw when transitional period = TRUE update fail and sample time 6.26 millisecond update rate	≠ FORWARD ≠ REVERSE ≥ **P17C5 P17D3 intermediate speed sensor RPM**	service mode $04 active diagnostic monitor enable intermediate speed sesnor count sample period P17D3 fault active OR P17D3 test fail this key on senor type cailbration (senor type is directional) transitional period detected = FALSE when: on period OR on period when direction unknown OR on period on period when direction is reverse OR on period on period when direction is forward transitional period detected = TRUE when: on period on period when direction unknown	= FALSE = 1 Boolean ≠ 0 counts = FALSE = FALSE = CeTNSR_e_NSPD_DualSpdSnsr ≥ 0.4434 seconds ≤ 0.2773 seconds < 0.2363 seconds > 0.1240 seconds < 0.0811 seconds > 0.0088 seconds < 0.4434 seconds > 0.2773 seconds	fail time ≥ 3.500 seconds out of sample time < 5.000 seconds	Type A, 1 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Transmission Intermediate Speed Sensor B Circuit Range/ Performance	P17D6	The diagnostic monitor rationalizes the transmission intermediate shaft speed sensor by using the transmission output shaft output speed sensor and the known ratio between the transmission intermediate shaft speed and the transmission output shaft output speed based on the commanded gear and the transmission lever node design. The estimated transmission intermediate shaft speed is equal to the gear ratio times the transmission output shaft output speed. The absolute value of the delta between the measured transmission intermediate shaft speed and the estimated transmission intermediate shaft speed is used to determine if the measured transmission intermediate shaft speed is rational.	delta1 = ABS (transmission input speed - (transmission output speed * gear ratio commanded)) AND delta2 = ABS (transmission input speed - (transmission intermediate speed * ratio calibration)) update faiil time 25 millisecond update rate	> 10.0 RPM > **P17D6 intermediate speed sensor fail RPM threshold** see supporting tables	diagnostic monitor enable speed sesnor configuration calibration is dual ratio calibration is function of command gear and intermediate speed sesnor when not REVERSE ratio calibration is function of command gear and intermediate speed sesnor when REVERSE ****************************** delay time updates when: estimated transmission intermediate speed (transmission input speed / ratio calibration) with	= 1 Boolean = CeTNSR_e_NSPD_DualSpdSnsr = **P17D6 ratio calibration when not REVERSE** = **P17D6 ratio calibration when REVERSE** ****************************** ≥ **P17D6 minimum estimated transmission intermediate speed to enable fail evaluation**	fail time ≥ **P17D6 intermediate speed sensor fail time threshold** fail time threshold met increments fail count, fail count ≥ **P17D6 intermediate speed sensor fail count threshold** ******************* delay time ≥	Type A, 1 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					transmission input speed	≥ **P17D6 minimum transmission input speed to enable fail evaluation**	**P17D6 delay to allow transmission input, intermediate and output speeds to stablize for fail evaluation**	
					input speed sensor ready based on commaned gear and transmission intermediate speed sensor (state output must be FALSE to enable fail evaluation) with	= **P17D6 holding clutch states**		
					with attained gear	= REVERSE OR = 1st thru 10th		
					****************************	*****************************		
					transmission input speed	≥ 240.0 RPM		
					transmission output speed	≥ 36.0 RPM		
					neutral idle mode	= nuetral idle mode ON		
					range shift state	= range shift complete		
					P0716 fault active	= FALSE		
					P0717 fault active	= FALSE		
					P07BF fault active	= FALSE		
					P07C0 fault active	= FALSE		
					P0722 fault active	= FALSE		
					P0723 fault active	= FALSE		
					P077C fault active	= FALSE		
					P077D fault active	= FALSE		
					P17CC fault active	= FALSE		
					P17CD fault active	= FALSE		
					battery voltage	≥ 9.00 volts		
					service fast learn active	= FALSE		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					run crank voltage transmission hydraulic pressure	≥ 9.00 volts = TRUE	battery voltage time ≥ 0.100 seconds run crank voltage time ≥ 0.100 seconds see supporting tables	

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Transmission Park Valve Position Sensor/ Switch A Circuit/Open	P17F5	The diagnostic monitor detects an illegal voltage on the park valve position sensor circuit.	raw sensor voltage raw sensor voltage	> 1.263 volts < 1.504 volts	diagnostic monitor enable battery voltage battery voltage time ETRS system configuration is internal ERTS	= 1 Boolean ≥ 9.00 volts ≥ 1.00 seconds = CeTRGR_e_InternalETRS	0.100 seconds in 0.163 second sample 6.25 millisecond update rate	Type A, 1 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Transmission Park Valve Position Sensor/ Switch A Circuit Low	P17F6	The diagnostic monitor detects a ground short or open circuit fault in the park valve position sensor circuit.	raw sensor voltage	< 0.414 volts	diagnostic monitor enable battery voltage battery voltage time ETRS system configuration is internal ERTS	= 1 Boolean ≥ 9.00 volts ≥ 1.00 seconds = CeTRGR_e_InternalETRS	0.100 seconds in 0.163 second sample 6.25 millisecond update rate	Type A, 1 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Transmission Park Valve Position Sensor/ Switch A Circuit High	P17F7	The diagnostic monitor detects a short to voltage circuit fault in the park valve position sensor circuit.	raw sensor voltage	> 2.538 volts	diagnostic monitor enable battery voltage battery voltage time ETRS system configuration is internal ERTS	= 1 Boolean ≥ 9.00 volts ≥ 1.00 seconds = CeTRGR_e_InternalETRS	0.100 seconds in 0.163 second sample 6.25 millisecond update rate	Type A, 1 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Transmission Park Valve Position Sensor/ Switch B Circuit/Open	P17FA	The diagnostic monitor detects an illegal voltage on the park valve position sensor circuit.	raw sensor voltage raw sensor voltage	> 1.263 volts < 1.504 volts	diagnostic monitor enable battery voltage battery voltage time ETRS system configuration is internal ERTS	= 1 Boolean ≥ 9.00 volts ≥ 1.00 seconds = CeTRGR_e_InternalETRS	0.100 seconds in 0.163 second sample 6.25 millisecond update rate	Type A, 1 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Transmission Park Valve Position Sensor/ Switch B Circuit Low	P17FB	The diagnostic monitor detects a ground short or open circuit fault in the park valve position sensor circuit.	raw sensor voltage	< 0.414 volts	diagnostic monitor enable battery voltage battey voltage time ETRS system configuration is internal ERTS	= 1 Boolean ≥ 9.00 volts ≥ 1.00 seconds = CeTRGR_e_InternalETRS	0.100 seconds in 0.163 second sample 6.25 millisecond update rate	Type A, 1 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Transmission Park Valve Position Sensor/ Switch B Circuit High	P17FC	The diagnostic monitor detects a short to voltage circuit fault in the park valve position sensor circuit.	raw sensor voltage	> 2.538 volts	diagnostic monitor enable battery voltage battery voltage time ETRS system configuration is internal ERTS	= 1 Boolean ≥ 9.00 volts ≥ 1.00 seconds = CeTRGR_e_InternalETRS	0.100 seconds in 0.163 second sample 6.25 millisecond update rate	Type A, 1 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Transmission Park Valve Stuck On (GR10 Only)	P187D	This diagnostic monitor rationalizes the driver ETRS command direction of "out of PARK" against the actual park valve position, as the park valve position is measured by the park valve position sensor A or B.	when: out of park commanded only one valid park valve sensor (either Park Sensor A OR Park Sensor B) with sensor not indicating out of park OR two valid park sensors (Park Sensor A AND Park Sensor B) not indicating out of park transition delay for commanded park valve transition (not required for steady state commanded out of park conditions) increment fail time when fail time threshold met, increment fail count	 ≠ Park = Park = Park ≥ **P187D P18E7 Park to Out Of Park Transition Delay**	ETRS system type is internal ETRS time since controller init battery voltage general park servo diagnostic enable park valve stuck on diagnostic enable high side driver 1 or high side driver 2 is on P187D, P187E (Park Servo DTC) Test Fail This Key On (P17F5, P17F6, P17F7 (Park Sensor A) Fault Active) OR (P17FA, P17FB, P17FC (Park Sensor B) Fault Active) (mode valve A commanded high and mode valve A confirmed high) OR mode valve related fault disabled confirmation (P18AA OR P18AB OR P27EC Test Fail This Key) OR (P27EB OR P27ED OR P27EE Fault Active) pump out available (engine speed	= CeTRGR_e_InternalETRS ≥ 0.01 seconds ≥ 9.00 volts = 1 Boolean = 1 Boolean = TRUE = FALSE = FALSE = FALSE = TRUE = TRUE = TRUE = TRUE ≥ 250 RPM	steady state fail time ≥ 0.25 seconds OR transition fail time ≥ 0.25 seconds fail count ≥ 2 counts update rate 6.25 milliseconds	Type A, 1 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					for engine speed time)	**Pump Out Available** ≥ **Transition Time**		
					line pressure available (commanded)	≥ 100.00 kPa		
					line pressure sufficient for pull out of park	≥ 500.00 kPa		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Transmission Park Valve Stuck Off (GR10 Only)	P187E	This diagnostic monitor rationalizes the driver ETRS command direction of "PARK" against the actual park valve position, as the park valve position is measured by the mode valve position sensor A and B.	when: park commanded only one valid park valve sensor (either Park Sensor A OR Park Sensor B) with sensor not indicating park OR two valid park senssors sensors (Park Sensor A AND Park Sensor B) not indicating park transition delay for commanded park valve transition OR transition delay for commanded park valve transition with min line (not required for steady state commanded park conditions) increment fail time when fail time threshold met, increment fail count	= Park ≠ Park ≠ Park ≥ **P187E P18E8 Out Of Park to Park Transition Delay** ≥ **P187E P18E8 Out Of Park to Park Min Line Transition Delay**	ETRS system type is internal ETRS time since controller init battery voltage general park servo diagnostic enable park valve stuck off diagnostic enable high side driver 1 or high side driver 2 is on P187D, P187E (Park Servo DTC) Test Fail This Key On (P17F5, P17F6, P17F7 (Park Sensor A) Fault Active) OR (P17FA, P17FB, P17FC (Park Sensor B) Fault Active) ((((mode valve A commanded low and mode valve A confirmed low) OR mode valve related fault disabled confirmation (P18AA OR P18AB OR P27EC Test Fail This Key On) OR mode valve sensor fault (P27EB OR P27ED OR	= CeTRGR_e_InternalETRS ≥ 0.01 seconds ≥ 9.00 volts = 1 Boolean = 1 Boolean = TRUE = FALSE = FALSE = FALSE = TRUE = TRUE	steady state fail time ≥ 0.25 seconds OR transition fail time ≥ 1.80 seconds OR transition fail time (at min line) ≥ 1.80 seconds fail count ≥ 2.00 counts update rate 6.25 milliseconds	Type A, 1 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					P27EE Fault Active)) AND ((park inhibit solenoid electrically stuck on) OR (park inhibit solenoid electrically stuck on AND line pressure command))) OR min line commanded (line pressure command))	= TRUE = FALSE = TRUE ≥ **Park Inhibit Solenoid Override Line Pressure** < 100.00 kPa		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Transmission Range Command Message Performance	P189C	The diagnostic monitor detects a failure of the LIN serial communication failure between the TCM and the ECM/CHCM for Electronic Transmission Range Select (ETRS) vehicles.	LIN range command is undetected by TCM based on Rx LIN service fucntion Range Command Secondary Updated	= FALSE set to FALSE as part of normal background time updates, set to TRUE as part of normal LIN service fucntion when Rx messages are processed	diagnostic monitor calibration enable service mode $04 active run/crank voltage run/crank voltage time	= 1 Boolean = FALSE ≥ 5.00 volts ≥ 3,000.000 seconds	initial fail time ≥ 3.000 seconds final fail time ≥ 425.000 seconds	Type A, 1 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Electronic Transmission Range Select Valve Performance - Stuck On (GR10 Only)	P18A1	This diagnostic monitor detects the condition where the transmission is latching the drive state on a commanded drive to park shift due to the range select valve being stuck on. P18A1 is only active during pressure / solenoid controlled shifts, not min line pressure default shifts which will break drive latch regardless of the range select valve position.	when: commanded mode valve high to low transition (drive to park shift) mode valve position park valve postion remains out of park transition delay for solenoid commanded mode valve transition increment fail time when fail time threshold met, increment fail count	= LOW = HIGH ≠ Park ≥ **P18A1 P18AA P27EC Mode Valve High To Low Transition Delay**	ETRS system type is internal ETRS time since controller init battery voltage general mode valve diagnostic enable range select valve stuck on diagnostic enable high side driver 1 or high side driver 2 is on mode valve related fault (P18AA, P18AB, P27EC Test Fail This Key) AND (P27EB, P27ED, P27EE Fault Active) drive latch possible (mode valve previously confirmed position AND calculated line pressure)	= CeTRGR_e_InternalETRS ≥ 0.01 seconds ≥ 9.00 volts = 1 Boolean = 1 Boolean = TRUE = FALSE = FALSE = HIGH ≥ 0.00	fail time ≥ 0.20 seconds fail count ≥ 3 counts update rate 6.25 milliseconds	Type A, 1 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Transmission Park Inhibit Actuator Control Circuit Low (T93 GR10 Only)	P18A2	Controller specific circuit diagnoses internal ETRS park solenoid for an ground short circuit failure by comparing a voltage measurement to controller specific voltage thresholds.	Controller specific circuit voltage thresholds are set to meet the following controller specification for an short to ground circuit Increment fail time	≤ 0.5 Ω impedance between signal and controller ground	battery voltage run crank voltage OR accessory voltage active diagnostic monitor enable calibration (1=enabled, 0=disabled) ((solenoid is mapped to high side driver 1 (= CeTSCR_e_HSD1) AND high side driver 1 on) OR (solenoid is mapped to high side driver 2 (= CeTSCR_e_HSD2) AND high side driver 2 on))	≥ 9.00 volts and ≤ 32.00 volts ≥ 5.00 volts = TRUE = 1 = CeTSCR_e_HSD1 = On = CeTSCR_e_HSD1 = On	≥ 1.000 seconds 25 milliseconds 12.5 milliseconds fail time ≥ 0.300 seconds out of sample time ≥ 0.500 seconds	Type A, 1 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Transmission Park Inhibit Actuator Control Circuit (T93 GR10 Only)	P18A3	Controller specific circuit diagnoses internal ETRS park solenoid for an open circuit failure by comparing a voltage measurement to controller specific voltage thresholds.	Voltage measurement outside of controller specific acceptable range indicates an open circuit Increment fail time	≥ 200 K Ω impedance between signal and controller ground	battery voltage run crank voltage OR accessory voltage active diagnostic monitor enable calibration (1=enabled, 0=disabled) ((solenoid is mapped to high side driver 1 (= CeTSCR_e_HSD1) AND high side driver 1 on) OR (solenoid is mapped to high side driver 2 (= CeTSCR_e_HSD2) AND high side driver 2 on))	≥ 9.00 volts and ≤ 32.00 volts ≥ 5.00 volts = TRUE = 1 = CeTSCR_e_HSD1 = On = CeTSCR_e_HSD1 = On	≥ 1.000 seconds 25 milliseconds 12.5 milliseconds fail time ≥ 0.300 seconds out of sample time ≥ 0.500 seconds	Type A, 1 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Transmission Park Inhibit Actuator Control Circuit High	P18A4	Controller specific circuit diagnoses internal ETRS park solenoid for a short to voltage circuit failure by comparing a voltage measurement to controller specific voltage thresholds.	Voltage measurement outside of controller specific acceptable range indicates a short to voltage Increment fail time	≤ 0.5 Ω impedance between signal and controller voltage source	battery voltage run crank voltage OR accessory voltage active diagnostic monitor enable calibration (1=enabled, 0=disabled) ((solenoid is mapped to high side driver 1 (= CeTSCR_e_HSD1) AND high side driver 1 on) OR (solenoid is mapped to high side driver 2 (= CeTSCR_e_HSD2) AND high side driver 2 on))	≥ 9.00 volts and ≤ 32.00 volts ≥ 5.00 volts = TRUE = 1 = CeTSCR_e_HSD1 = On = CeTSCR_e_HSD1 = On	≥ 1.000 seconds 25 milliseconds 12.5 milliseconds fail time ≥ 0.300 seconds out of sample time ≥ 0.500 seconds	Type B, 2 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Park Inhibit Solenoid Stuck Off (GR10 Only)	P18A8	This diagnostic monitor detects when the park inhibit solenoid is unable to maintain out of park/neutral as expected when out of park oil is not available	when: neutral commanded out of park oil park inhibit solenoid commanded (only required to start fail time) only one valid park valve sensor (either Park Sensor A OR Park Sensor B) with sensor not indicating out of park OR two valid park sensors (Park Sensor A AND Park Sensor B) not indicating out of park increment fail time when fail time threshold met, increment fail count	 = Neutral = Not Available = HIGH ≠ Out Of Park ≠ Out Of Park	ETRS system type is internal ETRS time since controller init battery voltage general park servo diagnostic enable park inhibit solenoid stuck off diagnostic enable high side driver 1 or high side driver 2 is on P187D, P187E (Park Servo DTC) Test Fail This Key On (P17F5, P17F6, P17F7 (Park Sensor A) Fault Active) OR (P17FA, P17FB, P17FC (Park Sensor B) Fault Active) (((mode valve A commanded low and mode valve A confirmed low) OR mode valve related fault (P18AA OR P18AB OR P27EC Test Fail This Key On) OR mode valve sensor fault (P27EB OR P27ED OR P27EE Fault Active)))	= CeTRGR_e_InternalETRS ≥ 0.01 seconds ≥ 9.00 volts = 1 Boolean = 1 Boolean = TRUE = FALSE = FALSE = FALSE = TRUE = TRUE = TRUE	fail time ≥ 0.13 seconds fail count ≥ 2.00 counts update rate 6.25 milliseconds	Type B, 2 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					park inhibit solenoid not electrically stuck off (P18A3 OR P18A4 Fault Active)	= FALSE		
					(			
					pump out available	= FALSE		
					(engine speed	< 250.00		
					for			
					engine speed low time	≥ 0.25		
					OR			
					min line commanded			
					(line pressure command)	< 100.00 kPa		
					)			
					aux pump commanded on	= FALSE		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Transmission Range Control A Position Sensor/ Switch Circuit Stuck On (GR10 Only)	P18AA	This diagnostic monitor detects a Mode Valve A Position Sensor State in the "on" or "high" state while being commanded low or when pressure is insufficient to hold the mode valve high. After a failure of a pressure controlled mode valve high to low transition, a min line mode valve high to low transition is used for fault isolation between P18A1 and P18AA.	when: mode valve solenoid commaned state mode valve A position sensor state transition delay for solenoid controlled mode valve transition OR transition delay for solenoid min line mode valve transition (no transistion delay required for steady state commanded mode valve low conditions) increment fail time when fail time threshold met, increment fail count	 = LOW = HIGH ≥ **P18A1 P18AA P27EC Mode Valve High To Low Transition Delay** ≥ **P18AA Mode Valve High To Low Min Line Transition Delay**	ETRS system type is internal ETRS time since controller init battery voltage general mode valve diagnostic enable mode valve stuck on diagnostic enable high side driver 1 or high side driver 2 is on mode valve related fault (P18AA, P18AB, P27EC Test Fail This Key) AND mode valve sensor fault (P27EB, P27ED, P27EE Fault Active) AND ((pump out available (engine speed for engine speed high time) AND line pressure available (pressure commanded) AND out of park status) OR (pump out available OR line pressure available	= CeTRGR_e_InternalETRS ≥ 0.01 seconds ≥ 9.00 volts = 1 Boolean = 1 Boolean = TRUE = FALSE = FALSE = TRUE ≥ 250.00 **Pump Out Available** ≥ **Transition Time** = TRUE ≥ 100.00 kPa ≠ Park = FALSE = FALSE	steady state fail time ≥ 0.25 seconds OR high to low transition fail time ≥ 0.20 seconds OR high to low min line transition fail time ≥ 1.00 seconds fail count ≥ 2.00 counts update rate 6.25 milliseconds	Type A, 1 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					)			

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Transmission Range Control A Position Sensor/ Switch Circuit Stuck Off (GR10 Only)	P18AB	This diagnostic monitor detects a Mode Valve A Position Sensor State in the "off" or "low" state, which is in error, when hydraulic pressure in the circuit used to move the mode valve is sufficient to overcome the mode valve return spring force, leaving the mode valve mechanically in the “on” or “high” state. The diagnostic monitor also executes during transitions of the mode valve to verify Mode Valve A Position Sensor State changes correctly with mode valve state command.	when: mode valve solenoid commaned state mode valve A position sensor state transition delay for solenoid controlled mode valve transition (no transistion delay required for steady state commanded mode valve high conditions) increment fail time when fail time threshold met, increment fail count	= HIGH = LOW ≥ **P18AB P27EC Mode Valve Low to High Transition Delay**	ETRS system type is internal ETRS time since controller init battery voltage general mode valve diagnostic enable mode valve stuck off diagnostic enable high side driver 1 or high side driver 2 is on mode valve related fault (P18AA, P18AB, P27EC Test Fail This Key) AND mode valve sensor fault (P27EB, P27ED, P27EE Fault Active) pump out available (engine speed for engine speed high time) AND line pressure available (pressure commanded) AND out of park status	= CeTRGR_e_InternalETRS ≥ 0.01 seconds ≥ 9.00 volts = 1 Boolean = 1.00 Boolean = TRUE = FALSE = FALSE = TRUE ≥ 250.00 **Pump Out Available** ≥ **Transition Time** = TRUE ≥ 100.00 kPa = Park	steady state fail time ≥ 0.25 seconds OR low to high transition fail time 0.25 ≥seconds fail count ≥ 2.00 counts update rate 6.25 milliseconds	Type A, 1 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Transmission Range Control Enable Valve Stuck On (GR10 Only)	P18AE	This diagnostic monitor detects when the Enable Valve is not able to cut pressure from the pump to the rest of the hydraulic system within the transmission. The test checks for C2 incorrectly gaining capacity when commanded on with line pressure cut.	park commanded commanded gear only one valid park valve sensor (either Park Sensor A OR Park Sensor B) with sensor indicating park OR two valid park sensors (Park Sensor A AND Park Sensor B) with both sensors indicating park enable valve delay time C2 pressure command C2 slip increment enable valve stuck on fail time	= PARK = PARK w/ No clutches = Park = Park > **P18AE Enable Valve Test Delay** = 2,200.00 < 60.00	ETRS system type is internal ETRS high side driver 1 or high side driver 2 is on trans oil temp engine crank (only required to initiate test) engine off commanded line pressure pump out available (engine speed for engine speed high time) transmission input speed enable valve diagnostic not completed (P18AE Test Pass / Test Fail This Key) no C2 solenoid electrical (P0964 OR P0966 OR P0967 Fault Active) no line pressure solenoid short to ground (P2814 Fault Active) total test time	= CeTRGR_e_InternalETRS = TRUE > 0.00 = TRUE = FALSE = 0 = TRUE ≥ 250.00 ≥ **Pump Out Available Transition Time** > 300.00 = FALSE = FALSE = FALSE ≤ KePSDD_t_AntiBkFlwTmout	fail time > 3.00 update rate 6.25 milleseconds	Type B, 2 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Transmission Park Valve Position Sensor/ Switch "A" Performance (GR10 Only)	P18E7	This diagnostic monitor detects park valve position sensor A performance faults, the sensor is indicating not park when command is park, or sensor does not transition when park is not commanded.	when: out of park commanded Park Sensor A indicating park Park Sensor B not indicating park transition delay for commanded park valve transition (not required for steady state commanded out of park conditions) increment fail time when fail time threshold met, increment fail count	 ≠ Park = Park ≠ Park ≥ **P187D P18E7 Park to Out Of Park Transition Delay**	ETRS system type is internal ETRS time since controller init battery voltage general park servo diagnostic enable park position sensor A performance diagnostic enable high side driver 1 or high side driver 2 is on P187D, P187E (Park Servo DTC) Test Fail This Key On (P17F5, P17F6, P17F7 (Park Sensor A) Fault Active) OR (P17FA, P17FB, P17FC (Park Sensor B) Fault Active) mode valve A commanded high and mode valve A confirmed high mode valve related fault (P18AA, P18AB, P27EC Test Fail This Key) AND mode valve sensor fault (P27EB, P27ED, P27EE Fault Active) pump out available	= CeTRGR_e_InternalETRS ≥ 0.01 seconds ≥ 9.00 volts = 1 Boolean = 1 Boolean = TRUE = FALSE = FALSE = FALSE = TRUE = FALSE = FALSE = TRUE	steady state fail time ≥ 0.25 seconds transition fail time ≥ 0.25 seconds fail count ≥ 1.00 counts update rate 6.25 milliseconds	Type A, 1 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					(engine speed for engine speed time) line pressure available (commanded) line pressure sufficient for pull out of park	≥ 250 RPM **Pump Out Available** ≥ **Transition Time** ≥ 100.00 kPa ≥ 500.00 kPa		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Transmission Park Valve Position Sensor/ Switch "B" Performance (GR10 Only)	P18E8	This diagnostic monitor detects park valve position sensor B performance faults, the sensor is indicating not park when command is park, or sensor does not transition when park is not commanded.	when: steady state out of park commanded Park Sensor A not indicating park Park Sensor B indicating park increment fail time when fail time threshold met, increment fail count	≠ Park ≠ Park = Park	ETRS system type is internal ETRS time since controller init battery voltage general park servo diagnostic enable park position sensor B performance diagnostic enable high side driver 1 or high side driver 2 is on P187D, P187E (Park Servo DTC) Test Fail This Key On (P17F5, P17F6, P17F7 (Park Sensor A) Fault Active) OR (P17FA, P17FB, P17FC (Park Sensor B) Fault Active) mode valve A commanded high and mode valve A confirmed high mode valve related fault (P18AA, P18AB, P27EC Test Fail This Key) AND mode valve sensor fault (P27EB, P27ED, P27EE Fault Active) pump out available (engine speed	= CeTRGR_e_InternalETRS ≥ 0.01 seconds ≥ 9.00 volts = 1 Boolean = 1 Boolean = TRUE = FALSE = FALSE = FALSE = TRUE = FALSE = FALSE = TRUE ≥ 250 RPM	fail time ≥ 0.25 seconds fail count ≥ 2.00 counts update rate 6.25 milliseconds	Type A, 1 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					for engine speed time) line pressure available (commanded) line pressure sufficient for pull out of park	**Pump Out Available ≥ Transition Time** ≥ 100.00 kPa ≥ 500.00 kPa		
			when: park commanded Park Sensor A indicating park Park Sensor B not indicating park transition delay for commanded park valve transition OR transition delay for commanded park valve transition with min line (not required for steady state commanded park conditions) increment fail time when fail time threshold met, increment fail count	 = Park = Park ≠ Park ≥ **P187E P18E8 Out Of Park to Park Transition Delay** ≥ **P187E P18E8 Out Of Park to Park Min Line Transition Delay**	ETRS system type is internal ETRS time since controller init battery voltage general park servo diagnostic enable park position sensor B performance diagnostic enable high side driver 1 or high side driver 2 is on P187D, P187E (Park Servo DTC) Test Fail This Key On (P17F5, P17F6, P17F7 (Park Sensor A) Fault Active) OR (P17FA, P17FB, P17FC (Park Sensor B) Fault Active) mode valve A commanded low and mode valve A confirmed low (park commanded)	= CeTRGR_e_InternalETRS ≥ 0.01 seconds ≥ 9.00 volts = 1 Boolean = 1 Boolean = TRUE = FALSE = FALSE = FALSE = TRUE	steady state fail time ≥ 0.25 seconds OR transition fail time ≥ 1.80 seconds OR transition fail time (at min line) ≥ 1.80 seconds fail count ≥ 2.00 counts update rate 6.25 milliseconds	

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					mode valve related fault (P18AA, P18AB, P27EC Test Fail This Key) AND mode valve sensor fault (P27EB, P27ED, P27EE Fault Active)	= FALSE = FALSE		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Ignition Switch Run/ Start Position Circuit Low	P2534	Detects a low ignition switch run/start position curcuit. This diagnostic reports the DTC when this circut is low. Monitoring occurs when the TCM run/ crank is active.	Ignition switch Run/Start position circuit low	TCM Run / Crank = FALSE	Ignition switch Run/Start position circuit low diag enable and Run / Crank active ECM	= 1.00 = TRUE	280 failures out of 280 samples 25 ms / sample	Type A, 1 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Ignition Switch Run/ Start Position Circuit High	P2535	Detects a high ignition switch run/start position curcuit. This diagnostic reports the DTC when this circut is high. Monitoring occurs when the TCM run/ crank is NOT active.	Ignition switch Run/Start position circuit high	TCM Run / Crank = TRUE	Ignition switch Run/Start position circuit low diag enable and Run / Crank active ECM	= 1.00 = FALSE	280 failures out of 280 samples 25 ms / sample	Type A, 1 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Actuator Supply Voltage B Circuit Low	P2670	Controller specific output driver circuit diagnoses the high sided driver circuit for a short to ground failure, or where controller H/W cannot differentiate, diagnoses the high sided driver circuit for a short to ground failure or open circuit failure, when the output is powered on, by comparing a voltage measurement to controller specific voltage thresholds.	Voltage measurement outside of controller specific acceptable range during driver on state indicates short to ground failure. Controller specific output driver circuit voltage thresholds are set to meet the following controller specification for a short to ground or an open circuit.	≤ 0.5 Ω impedance between signal and controller ground OR ≥ 200 K Ω impedance between signal and controller ground When malfunction criteria threshold is met, increment fail count and increment sample count, otherwise increment only sample count	(ground short diagnostic monitor enable calibration OR open circuit diagnostic monitor enable calibration) high side drive 2 ON service mode $04 active	= 1 Boolean = 1 Boolean = TRUE = FALSE	ground short fail count ≥ 6 counts within sample count of 2,400 counts OR open circuit fail count ≥ 6 counts within sample count of 2,400 counts 6.25 millisecond update rate	Type A, 1 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Pressure Control (PC) Solenoid D Stuck Off (GR10)	P2714	Each pressure control solenoid stuck off diagnostic monitor detects a clutch pressure control solenoid failed hydraulically off, while the solenoid is electrically functional. In the failure mode the clutch slip speed, and gear box gear slip, will be excessive, not near or at zero RPM. The clutch slip speed is calculated based on the transmission lever node design, requiring transmission input shaft speed, transmission output shaft speed, and, one transmission intermediate shaft speed. The clutch pressure control solenoid is tested after an automatic transmission shift occurs and has been considered shift complete, or, steady state gear is deemed active, range shift complete. When the automatic transmission shift is complete, steady state gear is considered, the clutch pressure control solenoid is mapped to transmission line	C4 clutch slip speed, update fail time 6.25 milliscond update	≥ 200.0 RPM			fail time ≥ 1.00 seconds, update fail count, fail count ≥ 3 counts 6.25 milliscond update	Type A, 1 Trips
					******************************	******************************		
					system-level enables:			
					use battery voltage calibration is FALSE OR	= 1 Boolean		
					(use battery voltage calibration is TRUE AND	= 1 Boolean		
					battery voltage)	≥ 9.00 volts	battery voltage time ≥ 0.100 seconds	
					use run crank voltage calibration is FALSE OR	= 0 Boolean		
					(use run crank voltage calibration is TRUE AND	= 0 Boolean		
					run crank voltage)	≥ 9.00 volts	run crank voltage time ≥ 0.100 seconds	
					TCM output driver high side driver 1, clutch pressure control solenoid driver circuit enabled	= TRUE Boolean		
					TCM output driver high side driver 2, clutch pressure control solenoid driver circuit enabled	= TRUE Boolean		
					service fast learn active	= FALSE Boolean		
					service solenoid cleaning			

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
		pressure control, which normally allows the clutch to maintain full torque holding capacity at the given engine crankshaft torque, to maintain true gear ratio. When the clutch pressure control solenoid is failed hydraulically off, the clutch does not maintain holding capacity at any engine crankshaft torque, and the clutch slip speed is uncontrollable. The clutch pressure control solenoid test is suspended if the higher level safety startle mitigation function is active. The safety startle mitigation function is triggered when a sudden vehicle deceleration occurs due to a clutch pressure control solenoid that has failed in the opposite sense, clutch pressure control solenoid failed hydraulically on, while the solenoid is electrically functional, which must take priority over any clutch pressure control solenoid stuck off diagnostic monitor. All clutch pressure control			procedure active hydraulic pressure available hydraulic line pressure **************************** enable C4 clutch slip speed fail compare when: ((startle mitigation active OR (startle mitigation active AND startle mitigation gear)) (see startle mitigation active NOTE below) unintended deceleration fault pending OR unintended deceleration fault pending enable cal is FALSE (startle mitigation) clutch steady state adaptive active (transmission output shaft speed OR (accelerator pedal position OR engine speed) C4 clutch slip speed valid	= FALSE Boolean = TRUE ≥ -999.00 kPa **************************** = FALSE = TRUE ≠ initial startle mitigation gear = FALSE = 0 (0 to enable, 1 to disable) = FALSE ≥ 36.0 RPM ≥ 0.50 % ≥ 1,000.0 RPM = TRUE (all speed sensors are functional for lever node clutch slip	≥ 1.000 seconds	

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
		solenoid stuck on/off diagnostic monitors are emission MIL DTCs. System voltage must be normal, all clutch pressure control solenoid driver circuits must be functional, no clutch pressure control solenoid electrical or performance faults can be present, and no speed sensor electrical or performance faults can be present, or the clutch pressure control solenoid stuck off test is disabled. This diagnostic monitor is relative to C4 (GR10 C23467810R) clutch pressure control solenoid.			 C4 clutch pressured map (enable forward gear cal AND driver direction request AND Attained Gear) OR (enable reverse gear cal AND driver direction request AND Attained Gear) range shift state ****************************** DTCs not fault pending DTCs not fault active	speed calculation) = mapped to line pressure, C4 clutch pressure has reached fully applied state = 1 (1 to enable, 0 to disable) = FORWARD = a FORWARD gear = 0 (1 to enable, 0 to disable) = REVERSE = REVERSE = range shift complete ****************************** P17CE P1783 P178F P17C6 P17C4 P17C7 P17D3 P17C5 P0721 P172A P172B P0716 P0717 P07C0 P07BF P0723 P0722 P077D P077C P176C P176D P176B P17D6 P2534 P0707 P0708 P0716 P0717 P07C0 P07BF P077D P077C P126C P176D P17CC P17CD P0962 P0966 P0970 P2720 P2729 P2738 P0963 P0967 P0971 P2721 P2730 P2739 P0960 P0964 P0968 P2718 P2727 P2736 P17CE P1783		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
						P17D3 P17C5 P0721 AcceleratorPedalFailure CrankSensor_FA		
					DTCs not test fail this key on	P0707 P0708 P0723 P0722 P176B P17D6 P0747 P0777 P0797 P2715 P2724 P2733 P0746 P0776 P0796 P2714 P2723 P2732 P2821 P2820 P178F P17C6 P17C4 P17C7 P172A P172B		
					NOTE: startle mitigation active is used to detect unintended deceleration due to clutch pressure control solenoid stuck on failure modes, the clutch pressure control solenoid stuck on DTCs being P0747 P0777 P0797 P2715 P2724 P2733 P2821			

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Pressure Control (PC) Solenoid D Stuck On	P2715	Each pressure control solenoid stuck on diagnostic monitor detects a clutch pressure control solenoid failed hydraulically on, while the solenoid is electrically functional. The clutch pressure control solenoid is tested during an automatic transmission shift by monitoring the off going clutch slip speed. With the clutch pressure control solenoid failed on, still allowing hydraulic pressure to the clutch being commanded off, the intended off going clutch continues to maintain torque capacity during the transmission automatic shift. In the failure mode, the off going clutch slip speed will remain near zero RPM when the clutch pressure control solenoid is commanded to an off pressure in the normal operation to release the holding clutch. The clutch slip speed is calculated based on the transmission lever node design, requiring	shift type is power down shift: C4 clutch slip speed OR shift type is garage shift: C4 clutch slip speed ELSE shift is another type: C4 clutch slip speed update fail time 6.25 milliscond update	 < 50.00 RPM < 100.00 RPM < 50.00 RPM			Base fail time: shift type is power down shift: fail time ≥ 0.60 seconds shift type is garage shift: fail time ≥ 0.25 shift type is another type: fail time ≥ 0.15 seconds Add fail time offset according to shift type: open throttle upshift: **Clutch Stuck On Fail Offset Time PU Shifts** open throttle downshift: **Clutch Stuck On Fail Offset Time PD Shifts** garage shift: **Clutch Stuck On Fail Offset Time GS Shifts** closed throttle downshift:	Type A, 1 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
		transmission input shaft speed, transmission output shaft speed, and, one transmission intermediate shaft speed. As part of the pressure control solenoid stuck on diagnostic monitor, the safety startle mitigation function executes when in steady state gear, no automatic transmission shift in progress. The safety startle mitigation function is triggered when a sudden vehicle deceleration occurs due to a clutch pressure control solenoid that has failed hydraulically on, while the solenoid is electrically functional. All clutch pressure control solenoid stuck on diagnostic monitors are emission MIL DTCs. System voltage must be normal, all clutch pressure control solenoid driver circuits must be functional, no clutch pressure control solenoid electrical or performance faults can be present, and no speed sensor electrical or performance faults can be present, or the clutch pressure control solenoid stuck on test					**Clutch Stuck On Fail Offset Time CD Shifts** negative torque upshift: **Clutch Clip Press NU Shifts** clutch staging shift: **Clutch Stuck On Fail Offset Time STGR Shifts** update fail count, fail count ≥ 3 counts 6.25 milliscond update	
					******************************	******************************		
					system-level enables:			
					use battery voltage calibration is FALSE	= 1 Boolean		
					OR			
					(use battery voltage calibration is TRUE	= 1 Boolean		
					AND			
					battery voltage)	≥ 9.00 volts	battery voltage time ≥ 0.100 seconds	
					use run crank voltage calibration is FALSE	= 0 Boolean		
					OR			
					(use run crank voltage calibration is TRUE	= 0 Boolean		
					AND			
					run crank voltage)	≥ 9.00 volts	run crank voltage time ≥ 0.100 seconds	

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
		is disabled. This diagnostic monitor is relative to GR10 C4 C23467810R clutch pressure control solenoid.			TCM output driver high side driver 1, clutch pressure control solenoid driver circuit enabled	= TRUE Boolean		
					TCM output driver high side driver 2, clutch pressure control solenoid driver circuit enabled	= TRUE Boolean		
					service fast learn active	= FALSE Boolean		
					service solenoid cleaning procedure active	= FALSE Boolean		
					hydraulic pressure available	= TRUE		
					hydraulic pressure	≥ -999 kPa		
					****************************	*****************************		
					range shift state	≠ range shift complete		
					diagnostic clutch test	= OFF GOING CLUTCH TEST		
					transmission output shaft speed	≥ 36.0 RPM		
					((C4 off going clutch pressure control ramp time out complete	= TRUE		
					AND			
					off going clutch pressure ramp control ramp time out enable)	= 1 (1 to enable, 0 to disable)		
					OR			
					C4 off going clutch command pressure)	≤ 350 kPa	exhaust delay by shift type:	

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
							closed throttle upshift: **C4 exhaust delay closed throttle lift foot up shift** open throttle upshift: **C4 exhaust delay open throttle power on up shift** garage shifts: **C4 exhaust delay garage shift** closed throttle downshift: **C4 exhaust delay closed throttle down shift** negative torque upshift: **C4 exhaust delay negative torque up shift** open throttle downshift: **C4 exhaust delay open throttle power down shift**	
					(engine torque AND	≥ 8,192 Nm		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Primary oncoming stuck on torque enable cal) OR (primary oncoming clutch active primary on coming control state primary on coming commanded pressure)	= 0 (0 is enable, 1 is enable) = TRUE ≠ clutch fill phase ≥ pressure clip threshold according to shift type: closed and open throttle upshifts: pressure clip threshold is dependent on the oncoming clutch: **C1 Torque-Based Pressure Clip** OR **C2 Torque-Based Pressure Clip** OR **C3 Torque-Based Pressure Clip** OR **C5 Torque-Based Pressure Clip** OR **C6 Torque-Based Pressure Clip** clip thresholds for all other	Post-torque phase delay for powered upshifts is dependent on the oncoming clutch: **C1_Oncoming Post-Torque Phase Delay** OR **C2_Oncoming Post-Torque Phase Delay** OR **C3_Oncoming Post-Torque Phase Delay** OR **C5_Oncoming Post-Torque Phase Delay** OR **C6_Oncoming Post-Torque Phase Delay**	

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125; FED--BIN125

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
						shift types: garage shifts: **Clutch Clip Press GS Shifts** closed throttle downshift: **Clutch Clip Press CD Shifts** negative torque upshift: **Clutch Clip Press NU Shifts** open throttle downshift: **Clutch Clip Press PD Shifts**		
					C4 clutch slip speed valid, all speed sensors are functional for lever node clucth slip speed calculation	= TRUE		
					***************************** conditions needed to trigger test: (current shift type AND shift type enable cal for current shift type) OR (Intrusive shift active AND shift type enable cal for garage shift AND Attained Gear AND	***************************** ≠ Garage shift = **Clutch Stuck On Shift Type Enable** (0 table value will disable, 1 will enable) = FALSE = 1 (0 will enable, 1 will enable) = NEUTRAL OR commanded gear		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125; FED--BIN125

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					(stuck on enable cal for forward garge shifts AND driver requested direction AND commanded gear) OR (stuck on enable cal for reverse garage shifts AND driver requested direction AND commanded gear)) clutch stuck off intrusive shift active startle mitigation active (see note on startle mitigation below) (new clutch controller has been initalized OR transitioning to a different clutch controller) current clutch solenoid test state ***************************** DTCs not fault pending	= 1 (0 to disable, 1 to enable) = FORWARD = a FORWARD gear = 1 (0 to disable, 1 to enable) = REVERSE = REVERSE = FALSE = FALSE = TRUE = TRUE transitions to TestState or TUT_HOLD (see note below about state transitions) ***************************** P17CE P1783 P178F P17C6 P17C4 P17C7 P17D3 P17C5 P0721 P172A P172B P0716 P0717 P07C0 P07BF P0723 P0722 P077D P077C P176C P176D P176B P17D6		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					DTCs not fault active	P2534 P0707 P0708 P0716 P0717 P07C0 P07BF P077D P077C P126C P176D P17CC P17CD P0962 P0966 P0970 P2720 P2729 P2738 P0963 P0967 P0971 P2721 P2730 P2739 P0960 P0964 P0968 P2718 P2727 P2736 P17CE P1783 P17D3 P17C5 P0721 AcceleratorPedalFailure CrankSensor_FA		
					DTCs not test fail this key on	P0707 P0708 P0723 P0722 P176B P17D6 P0747 P0777 P0797 P2715 P2724 P2733 P0746 P0776 P0796 P2714 P2723 P2732 P2821 P2820 P178F P17C6 P17C4 P17C7 P172A P172B		
					******************************	******************************		
					NOTE: Clutch control solenoid test state TIE UP TEST HOLD is necessary, as it is possible to have multiple off going clutches during one automatic transmission shift. Clutch control solenoid test state is set to TIE UP TEST HOLD during an automatic transmission shift due to two conditions:			

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Current value of clutch control solenoid test state is TIE UP TEST TEST STATE, when one off going clutch pressure control solenoid stuck on diagnostic monitor is currently executing. AND That off going clutch pressure control solenoid stuck on diagnostic monitor currently executing passes, the corresponding clutch slip speed ≥ clutch slip speed fail threshold. Once clutch control solenoid test state is set to TIE UP TEST HOLD, it remains TIE UP TEST HOLD during the automatic transmission shift, until: An additional off going clutch occurs, as indicated by solenoid stuck on test trigger = TRUE, subsequently clutch control solenoid test state is reset to TIE UP TEST TEST STATE, to allow the additional corresponding off going clutch pressure control solenoid stuck on diagnostic monitor to execute. OR The automatic transmission shift completes, range shift			

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					state = range shift complete. NOTE: Startle mitigation is used to detect unintended vehicle deceleration due to a clutch pressure control solenoid stuck on failure mode that occurs during steady state gear, not during an automatic transmission shift. The startle mitigation active then forces the transmission clutch pressure control system to a safe gear or neutral state, based on the active and inactive clutches, when the unintended vehicle deceleration occurred. Once a safe vehicle gear state is attained, the gear and clutch pressure control system allows transitions of the clutches on and off, to sequence automatic transmission shifts, single step shifts. As each single step automatic transmission shift occurs the normal pressure control solenoid stuck on diagnostic monitors execute to verify which clutch pressure control solenoid is in the stuck on failure mode, allowing one of the clutch pressure			

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					control solenoid stuck on DTCs to set P0747, P0777, P0797, P2715, P2724, P2733, P2821.			

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Pressure Control (PC) Solenoid D Control Circuit Open	P2718	Controller specific circuit diagnoses 9 speed C4, 10 speed C23467810R, 8 speed C23468 clutch, or CVT input clutch, solenoid for an open circuit failure by comparing a voltage measurement to controller specific voltage thresholds.	Voltage measurement outside of controller specific acceptable range indicates an open circuit Controller specific circuit voltage thresholds are set to meet the following controller specification for an open circuit	≥ 200 K Ω impedance between signal and controller ground When malfunction criteria threshold is met, increment fail time and increment sample time, otherwise increment only sample time	 battery voltage run crank voltage OR accessory voltage active diagnostic monitor enable calibration (solenoid is mapped to high side driver 1 (CeTSCR_e_HSD1) AND high side driver 1) OR (solenoid is mapped to high side driver 2 (CeTSCR_e_HSD2) AND high side driver 2) OR (solenoid is mapped to high side driver 3 (CeTSCR_e_HSD3) AND high side driver 3)	 ≥ 9.00 volts and ≤ 32.00 volts ≥ 5.00 volts = TRUE = 1 (1 is enable, 0 is disable) = CeTSCR_e_HSD2 (CeTSCR_e_NoHSD will disable) = ON = CeTSCR_e_HSD2 (CeTSCR_e_NoHSD will disable) = ON = CeTSCR_e_HSD2 (CeTSCR_e_NoHSD will disable) = ON	fail time ≥ 0.30 seconds out of sample time ≥ 0.50 seconds 6.25 millisecond update rate ≥ 1.00 seconds ≥ 25 milliseconds ≥ 12.5 milliseconds	Type A, 1 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Pressure Control (PC) Solenoid D Control Circuit Low	P2720	Controller specific circuit diagnoses 9 speed C4, 10 speed C23467810R, 8 speed C23468 clutch, or CVT input clutch, solenoid for a ground short circuit failure by comparing a voltage measurement to controller specific voltage thresholds.	Voltage measurement outside of controller specific acceptable range indicates a ground short Controller specific circuit voltage thresholds are set to meet the following controller specification for a ground short	≤ 0.5 Ω impedance between signal and controller ground When malfunction criteria threshold is met, increment fail time and increment sample time, otherwise increment only sample time			fail time ≥ 0.10 seconds out of sample time ≥ 0.17 seconds 6.25 millisecond update rate	Type A, 1 Trips
					battery voltage	≥ 9.00 volts and ≤ 32.00 volts	≥ 1.00 seconds	
					(run crank voltage OR accessory voltage active)	≥ 5.00 volts = TRUE	≥ 25 milliseconds ≥ 12.5 milliseconds	
					diagnostic monitor enable calibration	= 1 (1 is enable, 0 is disable)		
					(solenoid is mapped to high side driver 1 (CeTSCR_e_HSD1) AND high side driver 1)	= CeTSCR_e_HSD2 (CeTSCR_e_NoHSD will disable) = ON		
					OR			
					(solenoid is mapped to high side driver 2 (CeTSCR_e_HSD2) AND high side driver 2)	= CeTSCR_e_HSD2 (CeTSCR_e_NoHSD will disable) = ON		
					OR			
					(solenoid is mapped to high side driver 3 (CeTSCR_e_HSD3) AND high side driver 3)	= CeTSCR_e_HSD2 (CeTSCR_e_NoHSD will disable) = ON		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Pressure Control (PC) Solenoid D Control Circuit High	P2721	Controller specific circuit diagnoses 9 speed C4, 10 speed C23467810R, 8 speed C23468 clutch, or CVT input clutch, solenoid for a short to voltage circuit failure by comparing a voltage measurement to controller specific voltage thresholds.	Voltage measurement outside of controller specific acceptable range indicates a short to voltage Controller specific circuit voltage thresholds are set to meet the following controller specification for a short to voltage	≤ 0.5 Ω impedance between signal and controller voltage source When malfunction criteria threshold is met, increment fail time and increment sample time, otherwise increment only sample time	battery voltage (run crank voltage OR accessory voltage active) diagnostic monitor enable calibration (solenoid is mapped to high side driver 1 (CeTSCR_e_HSD1) AND high side driver 1) OR (solenoid is mapped to high side driver 2 (CeTSCR_e_HSD2) AND high side driver 2) OR (solenoid is mapped to high side driver 3 (CeTSCR_e_HSD3) AND high side driver 3)	≥ 9.00 volts and ≤ 32.00 volts ≥ 5.00 volts = TRUE = 1 (1 is enable, 0 is disable) = CeTSCR_e_HSD2 (CeTSCR_e_NoHSD will disable) = ON = CeTSCR_e_HSD2 (CeTSCR_e_NoHSD will disable) = ON = CeTSCR_e_HSD2 (CeTSCR_e_NoHSD will disable) = ON	fail time ≥ 0.30 seconds out of sample time ≥ 0.50 seconds ≥ 1.00 seconds ≥ 25 milliseconds ≥ 12.5 milliseconds	Type A, 1 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Pressure Control (PC) Solenoid E Stuck Off (GR10)	P2723	Each pressure control solenoid stuck off diagnostic monitor detects a clutch pressure control solenoid failed hydraulically off, while the solenoid is electrically functional. In the failure mode the clutch slip speed, and gear box gear slip, will be excessive, not near or at zero RPM. The clutch slip speed is calculated based on the transmission lever node design, requiring transmission input shaft speed, transmission output shaft speed, and, one transmission intermediate shaft speed. The clutch pressure control solenoid is tested after an automatic transmission shift occurs and has been considered shift complete, or, steady state gear is deemed active, range shift complete. When the automatic transmission shift is complete, steady state gear is considered, the clutch pressure control solenoid is mapped to transmission line	C5 clutch slip speed, update fail time 6.25 milliscond update	≥ 200.0 RPM			fail time ≥ 1.00 seconds, update fail count, fail count ≥ 3 counts 6.25 milliscond update	Type A, 1 Trips
					******************************	******************************		
					system-level enables:			
					use battery voltage calibration is FALSE	= 1 Boolean		
					OR			
					(use battery voltage calibration is TRUE	= 1 Boolean		
					AND			
					battery voltage)	≥ 9.00 volts	battery voltage time ≥ 0.100 seconds	
					use run crank voltage calibration is FALSE	= 0 Boolean		
					OR			
					(use run crank voltage calibration is TRUE	= 0 Boolean		
					AND			
					run crank voltage)	≥ 9.00 volts	run crank voltage time ≥ 0.100 seconds	
					TCM output driver high side driver 1, clutch pressure control solenoid driver circuit enabled	= TRUE Boolean		
					TCM output driver high side driver 2, clutch pressure control solenoid driver circuit enabled	= TRUE Boolean		
					service fast learn active	= FALSE Boolean		
					service solenoid cleaning			

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
		pressure control, which normally allows the clutch to maintain full torque holding capacity at the given engine crankshaft torque, to maintain true gear ratio. When the clutch pressure control solenoid is failed hydraulically off, the clutch does not maintain holding capacity at any engine crankshaft torque, and the clutch slip speed is uncontrollable. The clutch pressure control solenoid test is suspended if the higher level safety startle mitigation function is active. The safety startle mitigation function is triggered when a sudden vehicle deceleration occurs due to a clutch pressure control solenoid that has failed in the opposite sense, clutch pressure control solenoid failed hydraulically on, while the solenoid is electrically functional, which must take priority over any clutch pressure control solenoid stuck off diagnostic monitor. All clutch pressure control			procedure active hydraulic pressure available hydraulic line pressure **************************** enable C5 clutch slip speed fail compare when: ((startle mitigation active OR (startle mitigation active AND startle mitigation gear)) (see startle mitigation active NOTE below) unintended deceleration fault pending OR unintended deceleration fault pending enable cal is FALSE (startle mitigation) clutch steady state adaptive active (transmission output shaft speed OR (accelerator pedal position OR engine speed) C5 clutch slip speed valid	= FALSE Boolean = TRUE ≥ -999.00 kPa **************************** = FALSE = TRUE ≠ initial startle mitigation gear = FALSE = 0 (0 to enable, 1 to disable) = FALSE ≥ 36.0 RPM ≥ 0.50 % ≥ 1,000.0 RPM = TRUE (all speed sensors are functional for	≥ 1.000 seconds	

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
		solenoid stuck on/off diagnostic monitors are emission MIL DTCs. System voltage must be normal, all clutch pressure control solenoid driver circuits must be functional, no clutch pressure control solenoid electrical or performance faults can be present, and no speed sensor electrical or performance faults can be present, or the clutch pressure control solenoid stuck off test is disabled. This diagnostic monitor is relative to C5 (GR10 C1356789) clutch pressure control solenoid.				lever node clutch slip speed calculation)		
					C5 clutch pressured map	= mapped to line pressure, C5 clutch pressure has reached fully applied state		
					(enable forward gear cal AND	= 1 (1 to enable, 0 to disable)		
					driver direction request AND	= FORWARD		
					Attained Gear) OR	= a FORWARD gear		
					(enable reverse gear cal AND	= 0 (1 to enable, 0 to disable)		
					driver direction request AND	= REVERSE		
					Attained Gear)	= REVERSE		
					range shift state	= range shift complete		
					******************************	******************************		
					DTCs not fault pending	P17CE P1783 P178F P17C6 P17C4 P17C7 P17D3 P17C5 P0721 P172A P172B P0716 P0717 P07C0 P07BF P0723 P0722 P077D P077C P176C P176D P176B P17D6		
					DTCs not fault active	P2534 P0707 P0708 P0716 P0717 P07C0 P07BF P077D P077C P126C P176D P17CC P17CD P0962 P0966 P0970 P2720 P2729 P2738 P0963 P0967 P0971 P2721 P2730 P2739 P0960 P0964 P0968 P2718 P2727		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
						P2736 P17CE P1783 P17D3 P17C5 P0721 AcceleratorPedalFailure CrankSensor_FA		
					DTCs not test fail this key on	P0707 P0708 P0723 P0722 P176B P17D6 P0747 P0777 P0797 P2715 P2724 P2733 P0746 P0776 P0796 P2714 P2723 P2732 P2821 P2820 P178F P17C6 P17C4 P17C7 P172A P172B		
					NOTE: startle mitigation active is used to detect unintended deceleration due to clutch pressure control solenoid stuck on failure modes, the clutch pressure control solenoid stuck on DTCs being P0747 P0777 P0797 P2715 P2724 P2733 P2821			

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Pressure Control (PC) Solenoid E Stuck On	P2724	Each pressure control solenoid stuck on diagnostic monitor detects a clutch pressure control solenoid failed hydraulically on, while the solenoid is electrically functional. The clutch pressure control solenoid is tested during an automatic transmission shift by monitoring the off going clutch slip speed. With the clutch pressure control solenoid failed on, still allowing hydraulic pressure to the clutch being commanded off, the intended off going clutch continues to maintain torque capacity during the transmission automatic shift. In the failure mode, the off going clutch slip speed will remain near zero RPM when the clutch pressure control solenoid is commanded to an off pressure in the normal operation to release the holding clutch. The clutch slip speed is calculated based on the transmission lever node design, requiring	shift type is power down shift: C5 clutch slip speed OR shift type is garage shift: C5 clutch slip speed ELSE shift is another type: C5 clutch slip speed update fail time 6.25 milliscond update	 < 50.00 RPM < 100.00 RPM < 50.00 RPM			Base fail time: shift type is power down shift: fail time ≥ 0.60 seconds shift type is garage shift: fail time ≥ 0.25 shift type is another type: fail time ≥ 0.15 seconds Add fail time offset according to shift type: open throttle upshift: **Clutch Stuck On Fail Offset Time PU Shifts** open throttle downshift: **Clutch Stuck On Fail Offset Time PD Shifts** garage shift: **Clutch Stuck On Fail Offset Time GS Shifts** closed throttle downshift:	Type A, 1 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
		transmission input shaft speed, transmission output shaft speed, and, one transmission intermediate shaft speed. As part of the pressure control solenoid stuck on diagnostic monitor, the safety startle mitigation function executes when in steady state gear, no automatic transmission shift in progress. The safety startle mitigation function is triggered when a sudden vehicle deceleration occurs due to a clutch pressure control solenoid that has failed hydraulically on, while the solenoid is electrically functional. All clutch pressure control solenoid stuck on diagnostic monitors are emission MIL DTCs. System voltage must be normal, all clutch pressure control solenoid driver circuits must be functional, no clutch pressure control solenoid electrical or performance faults can be present, and no speed sensor electrical or performance faults can be present, or the clutch pressure control solenoid stuck on test			****************************** system-level enables: use battery voltage calibration is FALSE OR (use battery voltage calibration is TRUE AND battery voltage) use run crank voltage calibration is FALSE OR (use run crank voltage calibration is TRUE AND run crank voltage)	****************************** = 1 Boolean = 1 Boolean ≥ 9.00 volts = 0 Boolean = 0 Boolean ≥ 9.00 volts	**Clutch Stuck On Fail Offset Time CD Shifts** negative torque upshift: **Clutch Clip Press NU Shifts** clutch staging shift: **Clutch Stuck On Fail Offset Time STGR Shifts** update fail count, fail count ≥ 3 counts 6.25 milliscond update battery voltage time ≥ 0.100 seconds run crank voltage time ≥ 0.100 seconds	

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
		is disabled. This diagnostic monitor is relative to the GR10 C5 C1356789 clutch pressure control solenoid.			TCM output driver high side driver 1, clutch pressure control solenoid driver circuit enabled	= TRUE Boolean		
					TCM output driver high side driver 2, clutch pressure control solenoid driver circuit enabled	= TRUE Boolean		
					service fast learn active	= FALSE Boolean		
					service solenoid cleaning procedure active	= FALSE Boolean		
					hydraulic pressure available	= TRUE		
					hydraulic pressure	≥ -999 kPa		
					****************************	*****************************		
					range shift state	≠ range shift complete		
					diagnostic clutch test	= OFF GOING CLUTCH TEST		
					transmission output shaft speed	≥ 36.0 RPM		
					((C5 off going clutch pressure control ramp time out complete	= TRUE		
					AND			
					off going clutch pressure ramp control ramp time out enable)	= 1 (1 to enable, 0 to disable)		
					OR			
					C5 off going clutch command pressure)	≤ 350 kPa	exhaust delay by shift type:	

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
							closed throttle upshift: **C5 exhaust delay closed throttle lift foot up shift** open throttle upshift: **C5 exhaust delay open throttle power on up shift** garage shifts: **C5 exhaust delay garage shift** closed throttle downshift: **C5 exhaust delay closed throttle down shift** negative torque upshift: **C5 exhaust delay negative torque up shift** open throttle downshift: **C5 exhaust delay open throttle power down shift**	
					(engine torque AND Primary oncoming stuck	≥ 8,192 Nm = 0 (0 is enable, 1 is		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					on torque enable cal)	enable)		
					OR			
					(primary oncoming clutch active	= TRUE		
					primary on coming control state	≠ clutch fill phase		
					primary on coming commanded pressure)	≥ pressure clip threshold according to shift type:		
						closed and open throttle upshifts: pressure clip threshold is dependent on the oncoming clutch:	Post-torque phase delay for powered upshifts is dependent on the oncoming clutch:	
						C1 Torque-Based Pressure Clip OR **C2 Torque-Based Pressure Clip** OR **C3 Torque-Based Pressure Clip** OR **C4 Torque-Based Pressure Clip** OR **C6 Torque-Based Pressure Clip**	**C1_Oncoming Post-Torque Phase Delay** OR **C2_Oncoming Post-Torque Phase Delay** OR **C3_Oncoming Post-Torque Phase Delay** OR **C4_Oncoming Post-Torque Phase Delay** OR **C6_Oncoming Post-Torque Phase Delay**	
						clip thresholds for all other shift types:		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
						garage shifts: **Clutch Clip Press GS Shifts** closed throttle downshift: **Clutch Clip Press CD Shifts** negative torque upshift: **Clutch Clip Press NU Shifts** open throttle downshift: **Clutch Clip Press PD Shifts**		
					C5 clutch slip speed valid, all speed sensors are functional for lever node clucth slip speed calculation	= TRUE		
					******************************	******************************		
					conditions needed to trigger test:			
					(current shift type AND shift type enable cal for current shift type)	≠ Garage shift = **Clutch Stuck On Shift Type Enable** (0 table value will disable, 1 will enable)		
					OR			
					(Intrusive shift active AND shift type enable cal for garage shift AND Attained Gear AND (stuck on enable cal for forward garge shifts	= FALSE = 1 (0 will enable, 1 will enable) = NEUTRAL OR commanded gear = 1 (0 to disable, 1 to		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					AND driver requested direction AND commanded gear) OR (stuck on enable cal for reverse garage shifts AND driver requested direction AND commanded gear))	enable) = FORWARD = a FORWARD gear = 1 (0 to disable, 1 to enable) = REVERSE = REVERSE		
					clutch stuck off intrusive shift active	= FALSE		
					startle mitigation active (see note on startle mitigation below)	= FALSE		
					(new clutch controller has been initalized OR transitioning to a different clutch controller)	= TRUE = TRUE		
					current clutch solenoid test state	transitions to TestState or TUT_HOLD (see note below about state transitions)		
					******************************	******************************		
					DTCs not fault pending	P17CE P1783 P178F P17C6 P17C4 P17C7 P17D3 P17C5 P0721 P172A P172B P0716 P0717 P07C0 P07BF P0723 P0722 P077D P077C P176C P176D P176B P17D6		
					DTCs not fault active	P2534 P0707 P0708		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
						P0716 P0717 P07C0 P07BF P077D P077C P126C P176D P17CC P17CD P0962 P0966 P0970 P2720 P2729 P2738 P0963 P0967 P0971 P2721 P2730 P2739 P0960 P0964 P0968 P2718 P2727 P2736 P17CE P1783 P17D3 P17C5 P0721 AcceleratorPedalFailure CrankSensor_FA		
					DTCs not test fail this key on	P0707 P0708 P0723 P0722 P176B P17D6 P0747 P0777 P0797 P2715 P2724 P2733 P0746 P0776 P0796 P2714 P2723 P2732 P2821 P2820 P178F P17C6 P17C4 P17C7 P172A P172B		
					*****************************	*****************************		
					NOTE: Clutch control solenoid test state TIE UP TEST HOLD is necessary, as it is possible to have multiple off going clutches during one automatic transmission shift. Clutch control solenoid test state is set to TIE UP TEST HOLD during an automatic transmission shift due to two conditions: Current value of clutch control solenoid test state			

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					is TIE UP TEST TEST STATE, when one off going clutch pressure control solenoid stuck on diagnostic monitor is currently executing. AND That off going clutch pressure control solenoid stuck on diagnostic monitor currently executing passes, the corresponding clutch slip speed ≥ clutch slip speed fail threshold. Once clutch control solenoid test state is set to TIE UP TEST HOLD, it remains TIE UP TEST HOLD during the automatic transmission shift, until: An additional off going clutch occurs, as indicated by solenoid stuck on test trigger = TRUE, subsequently clutch control solenoid test state is reset to TIE UP TEST TEST STATE, to allow the additional corresponding off going clutch pressure control solenoid stuck on diagnostic monitor to execute. OR The automatic transmission shift completes, range shift state = range shift complete.			

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					NOTE: Startle mitigation is used to detect unintended vehicle deceleration due to a clutch pressure control solenoid stuck on failure mode that occurs during steady state gear, not during an automatic transmission shift. The startle mitigation active then forces the transmission clutch pressure control system to a safe gear or neutral state, based on the active and inactive clutches, when the unintended vehicle deceleration occurred. Once a safe vehicle gear state is attained, the gear and clutch pressure control system allows transitions of the clutches on and off, to sequence automatic transmission shifts, single step shifts. As each single step automatic transmission shift occurs the normal pressure control solenoid stuck on diagnostic monitors execute to verify which clutch pressure control solenoid is in the stuck on failure mode, allowing one of the clutch pressure control solenoid stuck on DTCs to set P0747,			

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					P0777, P0797, P2715, P2724, P2733, P2821.			

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Pressure Control (PC) Solenoid E Control Circuit Open	P2727	Controller specific circuit diagnoses 9 speed C57R, 10 speed C1356789, or 8 speed C45678R clutch solenoid for an open circuit failure by comparing a voltage measurement to controller specific voltage thresholds.	Voltage measurement outside of controller specific acceptable range indicates an open circuit Controller specific circuit voltage thresholds are set to meet the following controller specification for an open circuit	≥ 200 K Ω impedance between signal and controller ground When malfunction criteria threshold is met, increment fail time and increment sample time, otherwise increment only sample time	battery voltage run crank voltage OR accessory voltage active diagnostic monitor enable calibration (solenoid is mapped to high side driver 1 (CeTSCR_e_HSD1) AND high side driver 1) OR (solenoid is mapped to high side driver 2 (CeTSCR_e_HSD2) AND high side driver 2) OR (solenoid is mapped to high side driver 3 (CeTSCR_e_HSD3) AND high side driver 3)	≥ 9.00 volts and ≤ 32.00 volts ≥ 5.00 volts = TRUE = 1 (1 is enable, 0 is disable) = CeTSCR_e_HSD2 (CeTSCR_e_NoHSD will disable) = ON = CeTSCR_e_HSD2 (CeTSCR_e_NoHSD will disable) = ON = CeTSCR_e_HSD2 (CeTSCR_e_NoHSD will disable) = ON	fail time ≥ 0.30 seconds out of sample time ≥ 0.50 seconds 6.25 millisecond update rate ≥ 1.00 seconds ≥ 25 milliseconds ≥ 12.5 milliseconds	Type A, 1 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Pressure Control (PC) Solenoid E Control Circuit Low	P2729	Controller specific circuit diagnoses 9 speed C57R, 10 speed C1356789, or 8 speed C45678R clutch solenoid for a ground short circuit failure by comparing a voltage measurement to controller specific voltage thresholds.	Voltage measurement outside of controller specific acceptable range indicates a ground short Controller specific circuit voltage thresholds are set to meet the following controller specification for a ground short	≤ 0.5 Ω impedance between signal and controller ground When malfunction criteria threshold is met, increment fail time and increment sample time, otherwise increment only sample time			fail time ≥ 0.10 seconds out of sample time ≥ 0.17 seconds 6.25 millisecond update rate	Type A, 1 Trips
					battery voltage	≥ 9.00 volts and ≤ 32.00 volts	≥ 1.00 seconds	
					(run crank voltage OR accessory voltage active)	≥ 5.00 volts = TRUE	≥ 25 milliseconds ≥ 12.5 milliseconds	
					diagnostic monitor enable calibration	= 1 (1 is enable, 0 is disable)		
					(solenoid is mapped to high side driver 1 (CeTSCR_e_HSD1) AND high side driver 1)	= CeTSCR_e_HSD2 (CeTSCR_e_NoHSD will disable) = ON		
					OR			
					(solenoid is mapped to high side driver 2 (CeTSCR_e_HSD2) AND high side driver 2)	= CeTSCR_e_HSD2 (CeTSCR_e_NoHSD will disable) = ON		
					OR			
					(solenoid is mapped to high side driver 3 (CeTSCR_e_HSD3) AND high side driver 3)	= CeTSCR_e_HSD2 (CeTSCR_e_NoHSD will disable) = ON		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Pressure Control (PC) Solenoid E Control Circuit High	P2730	Controller specific circuit diagnoses 9 speed C57R, 10 speed C1356789, or 8 speed C45678R clutch solenoid for a short to voltage circuit failure by comparing a voltage measurement to controller specific voltage thresholds.	Voltage measurement outside of controller specific acceptable range indicates a short to voltage Controller specific circuit voltage thresholds are set to meet the following controller specification for a short to voltage	≤ 0.5 Ω impedance between signal and controller voltage source When malfunction criteria threshold is met, increment fail time and increment sample time, otherwise increment only sample time			fail time ≥ 0.30 seconds out of sample time ≥ 0.50 seconds	Type A, 1 Trips
					battery voltage	≥ 9.00 volts and ≤ 32.00 volts	≥ 1.00 seconds	
					(run crank voltage OR accessory voltage active)	≥ 5.00 volts = TRUE	≥ 25 milliseconds ≥ 12.5 milliseconds	
					diagnostic monitor enable calibration	= 1 (1 is enable, 0 is disable)		
					(solenoid is mapped to high side driver 1 (CeTSCR_e_HSD1) AND high side driver 1)	= CeTSCR_e_HSD2 (CeTSCR_e_NoHSD will disable) = ON		
					OR			
					(solenoid is mapped to high side driver 2 (CeTSCR_e_HSD2) AND high side driver 2)	= CeTSCR_e_HSD2 (CeTSCR_e_NoHSD will disable) = ON		
					OR			
					(solenoid is mapped to high side driver 3 (CeTSCR_e_HSD3) AND high side driver 3)	= CeTSCR_e_HSD2 (CeTSCR_e_NoHSD will disable) = ON		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Pressure Control (PC) Solenoid F Stuck Off (GR10)	P2732	Each pressure control solenoid stuck off diagnostic monitor detects a clutch pressure control solenoid failed hydraulically off, while the solenoid is electrically functional. In the failure mode the clutch slip speed, and gear box gear slip, will be excessive, not near or at zero RPM. The clutch slip speed is calculated based on the transmission lever node design, requiring transmission input shaft speed, transmission output shaft speed, and, one transmission intermediate shaft speed. The clutch pressure control solenoid is tested after an automatic transmission shift occurs and has been considered shift complete, or, steady state gear is deemed active, range shift complete. When the automatic transmission shift is complete, steady state gear is considered, the clutch pressure control solenoid is mapped to transmission line	C6 clutch slip speed, update fail time 6.25 milliscond update	≥ 200.0 RPM			fail time ≥ 1.00 seconds, update fail count, fail count ≥ 3 counts 6.25 milliscond update	Type A, 1 Trips
					******************************	******************************		
					system-level enables:			
					use battery voltage calibration is FALSE OR	= 1 Boolean		
					(use battery voltage calibration is TRUE AND	= 1 Boolean		
					battery voltage)	≥ 9.00 volts	battery voltage time ≥ 0.100 seconds	
					use run crank voltage calibration is FALSE OR	= 0 Boolean		
					(use run crank voltage calibration is TRUE AND	= 0 Boolean		
					run crank voltage)	≥ 9.00 volts	run crank voltage time ≥ 0.100 seconds	
					TCM output driver high side driver 1, clutch pressure control solenoid driver circuit enabled	= TRUE Boolean		
					TCM output driver high side driver 2, clutch pressure control solenoid driver circuit enabled	= TRUE Boolean		
					service fast learn active	= FALSE Boolean		
					service solenoid cleaning			

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
		pressure control, which normally allows the clutch to maintain full torque holding capacity at the given engine crankshaft torque, to maintain true gear ratio. When the clutch pressure control solenoid is failed hydraulically off, the clutch does not maintain holding capacity at any engine crankshaft torque, and the clutch slip speed is uncontrollable. The clutch pressure control solenoid test is suspended if the higher level safety startle mitigation function is active. The safety startle mitigation function is triggered when a sudden vehicle deceleration occurs due to a clutch pressure control solenoid that has failed in the opposite sense, clutch pressure control solenoid failed hydraulically on, while the solenoid is electrically functional, which must take priority over any clutch pressure control solenoid stuck off diagnostic monitor. All clutch pressure control			procedure active hydraulic pressure available hydraulic line pressure **************************** enable C6 clutch slip speed fail compare when: ((startle mitigation active OR (startle mitigation active AND startle mitigation gear)) (see startle mitigation active NOTE below) unintended deceleration fault pending OR unintended deceleration fault pending enable cal is FALSE (startle mitigation) clutch steady state adaptive active (transmission output shaft speed OR (accelerator pedal position OR engine speed) C6 clutch slip speed valid	= FALSE Boolean = TRUE ≥ -999.00 kPa **************************** = FALSE = TRUE ≠ initial startle mitigation gear = FALSE = 0 (0 to enable, 1 to disable) = FALSE ≥ 36.0 RPM ≥ 0.50 % ≥ 1,000.0 RPM = TRUE (all speed sensors are functional for lever node clutch slip	≥ 1.000 seconds	

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
		solenoid stuck on/off diagnostic monitors are emission MIL DTCs. System voltage must be normal, all clutch pressure control solenoid driver circuits must be functional, no clutch pressure control solenoid electrical or performance faults can be present, and no speed sensor electrical or performance faults can be present, or the clutch pressure control solenoid stuck off test is disabled. This diagnostic monitor is relative to C6 GR10 C45678910R clutch pressure control solenoid.			 C6 clutch pressured map (enable forward gear cal AND driver direction request AND Attained Gear) OR (enable reverse gear cal AND driver direction request AND Attained Gear) range shift state ****************************** DTCs not fault pending DTCs not fault active	speed calculation) = mapped to line pressure, C6 clutch pressure has reached fully applied state = 1 (1 to enable, 0 to disable) = FORWARD = a FORWARD gear = 0 (1 to enable, 0 to disable) = REVERSE = REVERSE = range shift complete ****************************** P17CE P1783 P178F P17C6 P17C4 P17C7 P17D3 P17C5 P0721 P172A P172B P0716 P0717 P07C0 P07BF P0723 P0722 P077D P077C P176C P176D P176B P17D6 P2534 P0707 P0708 P0716 P0717 P07C0 P07BF P077D P077C P126C P176D P17CC P17CD P0962 P0966 P0970 P2720 P2729 P2738 P0963 P0967 P0971 P2721 P2730 P2739 P0960 P0964 P0968 P2718 P2727 P2736 P17CE P1783		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
						P17D3 P17C5 P0721 AcceleratorPedalFailure CrankSensor_FA		
					DTCs not test fail this key on	P0707 P0708 P0723 P0722 P176B P17D6 P0747 P0777 P0797 P2715 P2724 P2733 P0746 P0776 P0796 P2714 P2723 P2732 P2821 P2820 P178F P17C6 P17C4 P17C7 P172A P172B		
					NOTE: startle mitigation active is used to detect unintended deceleration due to clutch pressure control solenoid stuck on failure modes, the clutch pressure control solenoid stuck on DTCs being P0747 P0777 P0797 P2715 P2724 P2733 P2821			

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Pressure Control (PC) Solenoid F Stuck On (GR10)	P2733	Each pressure control solenoid stuck on diagnostic monitor detects a clutch pressure control solenoid failed hydraulically on, while the solenoid is electrically functional. The clutch pressure control solenoid is tested during an automatic transmission shift by monitoring the off going clutch slip speed. With the clutch pressure control solenoid failed on, still allowing hydraulic pressure to the clutch being commanded off, the intended off going clutch continues to maintain torque capacity during the transmission automatic shift. In the failure mode, the off going clutch slip speed will remain near zero RPM when the clutch pressure control solenoid is commanded to an off pressure in the normal operation to release the holding clutch. The clutch slip speed is calculated based on the transmission lever node design, requiring	shift type is power down shift: C6 clutch slip speed OR shift type is garage shift: C6 clutch slip speed ELSE shift is another type: C6 clutch slip speed update fail time 6.25 milliscond update	 < 50.00 RPM < 100.00 RPM < 50.00 RPM			Base fail time: shift type is power down shift: fail time ≥ 0.60 seconds shift type is garage shift: fail time ≥ 0.25 shift type is another type: fail time ≥ 0.15 seconds Add fail time offset according to shift type: open throttle upshift: **Clutch Stuck On Fail Offset Time PU Shifts** open throttle downshift: **Clutch Stuck On Fail Offset Time PD Shifts** garage shift: **Clutch Stuck On Fail Offset Time GS Shifts** closed throttle downshift:	Type A, 1 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
		transmission input shaft speed, transmission output shaft speed, and, one transmission intermediate shaft speed. As part of the pressure control solenoid stuck on diagnostic monitor, the safety startle mitigation function executes when in steady state gear, no automatic transmission shift in progress. The safety startle mitigation function is triggered when a sudden vehicle deceleration occurs due to a clutch pressure control solenoid that has failed hydraulically on, while the solenoid is electrically functional. All clutch pressure control solenoid stuck on diagnostic monitors are emission MIL DTCs. System voltage must be normal, all clutch pressure control solenoid driver circuits must be functional, no clutch pressure control solenoid electrical or performance faults can be present, and no speed sensor electrical or performance faults can be present, or the clutch pressure control solenoid stuck on test			****************************** system-level enables: use battery voltage calibration is FALSE OR (use battery voltage calibration is TRUE AND battery voltage) use run crank voltage calibration is FALSE OR (use run crank voltage calibration is TRUE AND run crank voltage)	****************************** = 1 Boolean = 1 Boolean ≥ 9.00 volts = 0 Boolean = 0 Boolean ≥ 9.00 volts	**Clutch Stuck On Fail Offset Time CD Shifts** negative torque upshift: **Clutch Clip Press NU Shifts** clutch staging shift: **Clutch Stuck On Fail Offset Time STGR Shifts** update fail count, fail count ≥ 3 counts 6.25 milliscond update battery voltage time ≥ 0.100 seconds run crank voltage time ≥ 0.100 seconds	

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
		is disabled. This diagnostic monitor is relative to the GR10 C6 C45678910R clutch pressure control solenoid.			TCM output driver high side driver 1, clutch pressure control solenoid driver circuit enabled	= TRUE Boolean		
					TCM output driver high side driver 2, clutch pressure control solenoid driver circuit enabled	= TRUE Boolean		
					service fast learn active	= FALSE Boolean		
					service solenoid cleaning procedure active	= FALSE Boolean		
					hydraulic pressure available	= TRUE		
					hydraulic pressure	≥ -999 kPa		
					*****************************	*****************************		
					range shift state	≠ range shift complete		
					diagnostic clutch test	= OFF GOING CLUTCH TEST		
					transmission output shaft speed	≥ 36.0 RPM		
					((C6 off going clutch pressure control ramp time out complete	= TRUE		
					AND			
					off going clutch pressure ramp control ramp time out enable)	= 1 (1 to enable, 0 to disable)		
					OR			
					C6 off going clutch command pressure)	≤ 350 kPa	exhaust delay by shift type:	

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
							closed throttle upshift: **C6 exhaust delay closed throttle lift foot up shift** open throttle upshift: **C6 exhaust delay open throttle power on up shift** garage shifts: **C6 exhaust delay garage shift** closed throttle downshift: **C6 exhaust delay garage shift** negative torque upshift: **C6 exhaust delay negative torque up shift** open throttle downshift: **C6 exhaust delay open throttle power down shift**	
					(engine torque AND Primary oncoming stuck	≥ 8,192 Nm = 0 (0 is enable, 1 is		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					on torque enable cal) OR (primary oncoming clutch active primary on coming control state primary on coming commanded pressure)	enable) = TRUE ≠ clutch fill phase ≥ pressure clip threshold according to shift type: closed and open throttle upshifts: pressure clip threshold is dependent on the oncoming clutch: **C1 Torque-Based Pressure Clip** OR **C2 Torque-Based Pressure Clip** OR **C3 Torque-Based Pressure Clip** OR **C4 Torque-Based Pressure Clip** OR **C5 Torque-Based Pressure Clip** clip thresholds for all other shift types:	Post-torque phase delay for powered upshifts is dependent on the oncoming clutch: **C1_Oncoming Post-Torque Phase Delay** OR **C2_Oncoming Post-Torque Phase Delay** OR **C3_Oncoming Post-Torque Phase Delay** OR **C4_Oncoming Post-Torque Phase Delay** OR **C5_Oncoming Post-Torque Phase Delay**	

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 TEST GROUP: KGMXV04.2088 EMISSIONS STDS: CAL--ULEV125; FED--BIN125

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
						garage shifts: **Clutch Clip Press GS Shifts** closed throttle downshift: **Clutch Clip Press CD Shifts** negative torque upshift: **Clutch Clip Press NU Shifts** open throttle downshift: **Clutch Clip Press PD Shifts**		
					C6 clutch slip speed valid, all speed sensors are functional for lever node clucth slip speed calculation	= TRUE		
					******************************	******************************		
					conditions needed to trigger test:			
					(current shift type AND	≠ Garage shift		
					shift type enable cal for current shift type)	= **Clutch Stuck On Shift Type Enable** (0 table value will disable, 1 will enable)		
					OR			
					(Intrusive shift active AND	= FALSE		
					shift type enable cal for garage shift AND	= 1 (0 will enable, 1 will enable)		
					Attained Gear AND	= NEUTRAL OR commanded gear		
					(stuck on enable cal for forward garge shifts AND	= 1 (0 to disable, 1 to enable)		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					driver requested direction AND commanded gear) OR (stuck on enable cal for reverse garage shifts AND driver requested direction AND commanded gear)) clutch stuck off intrusive shift active startle mitigation active (see note on startle mitigation below) (new clutch controller has been initalized OR transitioning to a different clutch controller) current clutch solenoid test state ****************************** DTCs not fault pending DTCs not fault active	= FORWARD = a FORWARD gear = 1 (0 to disable, 1 to enable) = REVERSE = REVERSE = FALSE = FALSE = TRUE = TRUE transitions to TestState or TUT_HOLD (see note below about state transitions) ****************************** P17CE P1783 P178F P17C6 P17C4 P17C7 P17D3 P17C5 P0721 P172A P172B P0716 P0717 P07C0 P07BF P0723 P0722 P077D P077C P176C P176D P176B P17D6 P2534 P0707 P0708 P0716 P0717 P07C0		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
						P07BF P077D P077C P126C P176D P17CC P17CD P0962 P0966 P0970 P2720 P2729 P2738 P0963 P0967 P0971 P2721 P2730 P2739 P0960 P0964 P0968 P2718 P2727 P2736 P17CE P1783 P17D3 P17C5 P0721 AcceleratorPedalFailure CrankSensor_FA		
					DTCs not test fail this key on	P0707 P0708 P0723 P0722 P176B P17D6 P0747 P0777 P0797 P2715 P2724 P2733 P0746 P0776 P0796 P2714 P2723 P2732 P2821 P2820 P178F P17C6 P17C4 P17C7 P172A P172B		
					******************************	******************************		
					NOTE: Clutch control solenoid test state TIE UP TEST HOLD is necessary, as it is possible to have multiple off going clutches during one automatic transmission shift. Clutch control solenoid test state is set to TIE UP TEST HOLD during an automatic transmission shift due to two conditions: Current value of clutch control solenoid test state is TIE UP TEST TEST			

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					STATE, when one off going clutch pressure control solenoid stuck on diagnostic monitor is currently executing. AND That off going clutch pressure control solenoid stuck on diagnostic monitor currently executing passes, the corresponding clutch slip speed ≥ clutch slip speed fail threshold. Once clutch control solenoid test state is set to TIE UP TEST HOLD, it remains TIE UP TEST HOLD during the automatic transmission shift, until: An additional off going clutch occurs, as indicated by solenoid stuck on test trigger = TRUE, subsequently clutch control solenoid test state is reset to TIE UP TEST TEST STATE, to allow the additional corresponding off going clutch pressure control solenoid stuck on diagnostic monitor to execute. OR The automatic transmission shift completes, range shift state = range shift complete.			

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					NOTE: Startle mitigation is used to detect unintended vehicle deceleration due to a clutch pressure control solenoid stuck on failure mode that occurs during steady state gear, not during an automatic transmission shift. The startle mitigation active then forces the transmission clutch pressure control system to a safe gear or neutral state, based on the active and inactive clutches, when the unintended vehicle deceleration occurred. Once a safe vehicle gear state is attained, the gear and clutch pressure control system allows transitions of the clutches on and off, to sequence automatic transmission shifts, single step shifts. As each single step automatic transmission shift occurs the normal pressure control solenoid stuck on diagnostic monitors execute to verify which clutch pressure control solenoid is in the stuck on failure mode, allowing one of the clutch pressure control solenoid stuck on DTCs to set P0747, P0777, P0797, P2715,			

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					P2724, P2733, P2821.			

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Pressure Control (PC) Solenoid F Control Circuit Open	P2736	Controller specific circuit diagnoses 9 speed (C6789/SOWC CBR1) clutch, 10 speed C45678910R clutch, 8 speed Line Pressure Control Circuit, or CVT binary pump, solenoid for an open circuit failure by comparing a voltage measurement to controller specific voltage thresholds.	Voltage measurement outside of controller specific acceptable range indicates an open circuit Controller specific circuit voltage thresholds are set to meet the following controller specification for an open circuit	≥ 200 K Ω impedance between signal and controller ground When malfunction criteria threshold is met, increment fail time and increment sample time, otherwise increment only sample time	battery voltage run crank voltage OR accessory voltage active diagnostic monitor enable calibration (solenoid is mapped to high side driver 1 (CeTSCR_e_HSD1) AND high side driver 1) OR (solenoid is mapped to high side driver 2 (CeTSCR_e_HSD2) AND high side driver 2) OR (solenoid is mapped to high side driver 3 (CeTSCR_e_HSD3) AND high side driver 3)	≥ 9.00 volts and ≤ 32.00 volts ≥ 5.00 volts = TRUE = 1 (1 is enable, 0 is disable) = CeTSCR_e_HSD2 (CeTSCR_e_NoHSD will disable) = ON = CeTSCR_e_HSD2 (CeTSCR_e_NoHSD will disable) = ON = CeTSCR_e_HSD2 (CeTSCR_e_NoHSD will disable) = ON	fail time ≥ 0.30 seconds out of sample time ≥ 0.50 seconds 6.25 millisecond update rate ≥ 1.00 seconds ≥ 25 milliseconds ≥ 12.5 milliseconds	Type A, 1 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Pressure Control (PC) Solenoid F Control Circuit Low	P2738	Controller specific circuit diagnoses 9 speed (C6789/SOWC CBR1, 10 speed C45678910R clutch, 8 speed line pressure control, or CVT binary pump, solenoid for a ground short circuit failure by comparing a voltage measurement to controller specific voltage thresholds.	Voltage measurement outside of controller specific acceptable range indicates a ground short Controller specific circuit voltage thresholds are set to meet the following controller specification for a ground short	≤ 0.5 Ω impedance between signal and controller ground When malfunction criteria threshold is met, increment fail time and increment sample time, otherwise increment only sample time			fail time ≥ 0.10 seconds out of sample time ≥ 0.17 seconds 6.25 millisecond update rate	Type A, 1 Trips
					battery voltage	≥ 9.00 volts and ≤ 32.00 volts	≥ 1.00 seconds	
					(run crank voltage OR accessory voltage active)	≥ 5.00 volts = TRUE	≥ 25 milliseconds ≥ 12.5 milliseconds	
					diagnostic monitor enable calibration	= 1 (1 is enable, 0 is disable)		
					(solenoid is mapped to high side driver 1 (CeTSCR_e_HSD1) AND high side driver 1)	= CeTSCR_e_HSD2 (CeTSCR_e_NoHSD will disable) = ON		
					OR			
					(solenoid is mapped to high side driver 2 (CeTSCR_e_HSD2) AND high side driver 2)	= CeTSCR_e_HSD2 (CeTSCR_e_NoHSD will disable) = ON		
					OR			
					(solenoid is mapped to high side driver 3 (CeTSCR_e_HSD3) AND high side driver 3)	= CeTSCR_e_HSD2 (CeTSCR_e_NoHSD will disable) = ON		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Pressure Control (PC) Solenoid F Control Circuit High	P2739	Controller specific circuit diagnoses 9 speed (C6789/SOWC CBR1), 10 speed C45678910R clutch, 8 speed line pressure control, or CVT binary pump, solenoid for a short to voltage circuit failure by comparing a voltage measurement to controller specific voltage thresholds.	Voltage measurement outside of controller specific acceptable range indicates a ground short Controller specific circuit voltage thresholds are set to meet the following controller specification for a ground short	≤ 0.5 Ω impedance between signal and controller ground When malfunction criteria threshold is met, increment fail time and increment sample time, otherwise increment only sample time			fail time ≥ 0.30 seconds out of sample time ≥ 0.50 seconds 6.25 millisecond update rate	Type A, 1 Trips
					battery voltage	≥ 9.00 volts and ≤ 32.00 volts	≥ 1.00 seconds	
					(run crank voltage OR accessory voltage active)	≥ 5.00 volts = TRUE	≥ 25 milliseconds ≥ 12.5 milliseconds	
					diagnostic monitor enable calibration	= 1 (1 is enable, 0 is disable)		
					(solenoid is mapped to high side driver 1 (CeTSCR_e_HSD1) AND high side driver 1)	= CeTSCR_e_HSD2 (CeTSCR_e_NoHSD will disable) = ON		
					OR			
					(solenoid is mapped to high side driver 2 (CeTSCR_e_HSD2) AND high side driver 2)	= CeTSCR_e_HSD2 (CeTSCR_e_NoHSD will disable) = ON		
					OR			
					(solenoid is mapped to high side driver 3 (CeTSCR_e_HSD3) AND high side driver 3)	= CeTSCR_e_HSD2 (CeTSCR_e_NoHSD will disable) = ON		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Auxiliary Transmission Fluid Pump Control Circuit Open	P2796	Controller specific auxiliary transmission fluid pump motor control circuit diagnoses the pump motor and wiring for an open circuit fault by comparing a voltage measurement to controller specific voltage thresholds.	Voltage measurement outside of controller specific acceptable range indicates an open circuit Controller specific circuit voltage thresholds are set to meet the following controller specification for an open circuit update fail and sample count	≥ 200 K Ω impedance between signal and controller ground	diagnostic report enable diagnostic monitor enable run crank voltage run crank voltage time	= 1 Boolean = 1 Boolean > 5.00 volts ≥ 25 milliseconds	≥ 20 fail counts out of ≥ 25 sample counts update rate 100 milliseconds	Type B, 2 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Auxiliary Transmission Fluid Pump Performance	P2797	Detects when the transmission auxiliary pump system, used to provide transmission hydraulic pressure, is not capable of supplying adequate hydraulic pressure during an engine auto-start. The transmission holding clutch pressures are commanded to meet the engine crank shaft torque output, to prevent clutch slip to those holding clutches, during the engine auto-start. The diagnostic monitors transmission input shaft speed during the auto-start event as the primary malfunction criteria. Measured input shaft speed that is excessive is an indication the holding clutches are slipping due to inadequate hydraulic pressure, as a result of a failed surge accumulator transmission auxiliary pump system.	Transmission turbine speed is greater than predicted turbine speed during autostart event, update initial fail count	**P2797 predicted ≥ turbine speed error** Refer to "Transmission Supporting Tables" for details	PRNDL state defaulted Transmission shift lever position Propulsion system active Ignition voltage Ignition voltage Transmission fluid temp Transmission fluid temp Hybrid state AutoStop duration min During autostop Engine speed was **************************** If above conditions are met then the following must occur: Turbine speed Engine speed Hydraulic pressure delay time If above conditions are met then increment time-out timer. Time-out timer Note: The initial fail	= False = Forward range A = True > 9.00 volts < 31.99 volts > 0.00 °C < 110.00 °C = Engine off ≥ 1.200 seconds < 5.0 RPM ≥ 80.0 RPM ≥ 450.0 RPM **P2797 hydraulic ≥ pressure delay** Refer to "Transmission Supporting Tables" for details ≤ 0.38 seconds	≥ 8 counts (initial fail count) Frequency =12.5ms Once the above counts are achieved then increment the final fail counter once. The final fail counter can only increment once per autostart event ≥ 3 counts (final fail counter) If above counter is greater than threshold then report DTC failed. Frequency = 12.5ms	Type B, 2 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 TEST GROUP: KGMXV04.2088 EMISSIONS STDS: CAL--ULEV125; FED--BIN125

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					counter must achieve it's fail threshold in less than the time-out time. **************************** If vehicle is launched then: Transmission gear ratio Trans 1st gear ratio Trans 1st gear ratio Trans gear ratio not 1st gear Trans gear ratio not 1st gear Valid transmission gear ratio achieved time OR If vehicle is not launched but autostart occurs then: Turbine speed Turbine speed less then above threshold for Note: During an autostart event the lack of hydraulic pressure will result in momentary clutch slip in	 = 4.696 1st gear ratio = 2.985 2nd gear ratio = 2.146 3rd gear ratio = 1.769 4th gear ratio = 1.520 5th gear ratio = 1.275 6th gear ratio ≤ 1.120 % of 1st gear ratio ≥ 0.880 % of 1st gear ratio ≤ 1.070 % of gear ratio ≥ 0.930 % of gear ratio ≥ 0.500 seconds ≤ 5.00 RPM ≥ 0.500 seconds		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					the C1234 clutch. After the clutch slip event, the main transmission pump and clutch will gain capacity, clutch slip will go to zero. If the vehicle is launching (moving) then a valid transmission ratio can be achieved. Or if the brake is continually applied and an autostart occurs naturally, then no ratio can be measured. In this case turbine speed will return to near zero rpm. ******************************			
					DTCs not fault active	CrankSensor_FA Transmission Output Shaft Angular Velocity Validity Transmission Turbine Angular Velocity Validity Transmission Oil Temperature Validity P171A P171B P171C U0101 P182E P1915		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Auxiliary Transmission Fluid Pump Control Circuit Low	P2798	Controller specific auxiliary transmission fluid pump motor control circuit diagnoses the pump motor and wiring for a ground short circuit fault by comparing a voltage measurement to controller specific voltage thresholds.	Voltage measurement outside of controller specific acceptable range indicates a ground short Controller specific circuit voltage thresholds are set to meet the following controller specification for a ground short update fail and sample count	≤ 0.5 Ω impedance between signal and controller ground	diagnostic report enable diagnostic monitor enable run crank voltage run crank voltage time	= 1 Boolean = 1 Boolean ≥ 5.00 volts ≥ 25 milliseconds	≥ 20 fail counts out of ≥ 25 sample counts update rate 100 milliseconds	Type B, 2 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Auxiliary Transmission Fluid Pump Control Circuit High	P2799	Controller specific auxiliary transmission fluid pump motor control circuit diagnoses the pump motor and wiring for a short to power circuit fault by comparing a voltage measurement to controller specific voltage thresholds.	Voltage measurement outside of controller specific acceptable range indicates a voltage short Controller specific circuit voltage thresholds are set to meet the following controller specification for a voltage short Increment fail and sample count	≤ 0.5 Ω impedance between signal and controller voltage source	diagnostic report enable diagnostic monitor enable run crank voltage run crank voltage time	= 1 Boolean = 1 Boolean ≥ 5.00 volts ≥ 25 milliseconds	≥ 20 fail counts out of ≥ 25 sample counts update rate 100 milliseconds	Type B, 2 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Pressure Control (PC) Solenoid A Calibration Incorrect	P27A7	The diagnostic monitor verifies that the pressure control solenoid A (GF9 line or GR10 C1 C123456R clutch or CVT secondary pulley) characterization data is programmed correctly into the TCM EEPROM to match the pressure control solenoid A electrical characteristics of the device currently installed in the transmission valve body assembly.	pressure control solenoid characterization data programming complete Matching is defined as pressure control solenoid characterization data corresponding to the transmission valve body assembly componentry. pressure control solenoid characterization data programming complete is set to FALSE when any of the following is present: Solenoid data is not programmed or incomplete data fault - occurs when a new or service TCM is installed. OR Solenoid class programming fault – the characterization data indicates a different type of device than the TCM calibration data OR Checksum mismatch – the checksum that was calculated from the programmed pressure control solenoid characterization data region does not match the calculated valve at the time of programming. OR Axis data fault – pressure	= FALSE	Pressure control solenoid characterization data is programmed originally at vehicle plant assembly based on transmission valve body assembly part number associated to the unit installed in vehicle. When valve body is serviced, dealership performs reprogramming of TCM with pressure control solenoid characterization data based on the associated transmission valve body part number installed.		execution of monitor occurs once per controller normal power up event during the controller initialization before normal controller time loop execution	Type A, 1 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
			control solenoid characterization data has one or more points that are less than the previous match point, axis data must be greater than or equal to previous data values.					

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Pressure Control (PC) Solenoid B Calibration Incorrect	P27A8	The diagnostic monitor verifies that the pressure control solenoid B (GF9 TCC or GR10 C2 C128910R clutch or CVT primary pulley) characterization data is programmed correctly into the TCM EEPROM to match the pressure control solenoid B electrical characteristics of the device currently installed in the transmission valve body assembly.	pressure control solenoid characterization data programming complete Matching is defined as pressure control solenoid characterization data corresponding to the transmission valve body assembly componentry. pressure control solenoid characterization data programming complete is set to FALSE when any of the following is present: Solenoid data is not programmed or incomplete data fault - occurs when a new or service TCM is installed. OR Solenoid class programming fault – the characterization data indicates a different type of device than the TCM calibration data OR Checksum mismatch – the checksum that was calculated from the programmed pressure control solenoid characterization data region does not match the calculated valve at the time of programming. OR Axis data fault – pressure	= FALSE	Pressure control solenoid characterization data is programmed originally at vehicle plant assembly based on transmission valve body assembly part number associated to the unit installed in vehicle. When valve body is serviced, dealership performs reprogramming of TCM with pressure control solenoid characterization data based on the associated transmission valve body part number installed.		execution of monitor occurs once per controller normal power event during the controller initialization before normal time loop execution	Type A, 1 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 TEST GROUP: KGMXV04.2088 EMISSIONS STDS: CAL--ULEV125; FED--BIN125

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
			control solenoid characterization data has one or more points that are less than the previous match point, axis data must be greater than or equal to previous data values.					

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Pressure Control (PC) Solenoid C Calibration Incorrect	P27A9	The diagnostic monitor verifies that the pressure control solenoid C (GF9 C1 CB123456 clutch or GR10 C3 C23457910 clutch or CVT line) characterization data is programmed correctly into the TCM EEPROM to match the pressure control solenoid C electrical characteristics of the device currently installed in the transmission valve body assembly.	pressure control solenoid characterization data programming complete Matching is defined as pressure control solenoid characterization data corresponding to the transmission valve body assembly componentry. pressure control solenoid characterization data programming complete is set to FALSE when any of the following is present: Solenoid data is not programmed or incomplete data fault - occurs when a new or service TCM is installed. OR Solenoid class programming fault – the characterization data indicates a different type of device than the TCM calibration data OR Checksum mismatch – the checksum that was calculated from the programmed pressure control solenoid characterization data region does not match the calculated valve at the time of programming. OR Axis data fault – pressure	= FALSE	Pressure control solenoid characterization data is programmed originally at vehicle plant assembly based on transmission valve body assembly part number associated to the unit installed in vehicle. When valve body is serviced, dealership performs reprogramming of TCM with pressure control solenoid characterization data based on the associated transmission valve body part number installed.		execution of monitor occurs once per controller normal power up event during the controller initialization before normal controller time loop execution	Type A, 1 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
			control solenoid characterization data has one or more points that are less than the previous match point, axis data must be greater than or equal to previous data values.					

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Pressure Control (PC) Solenoid D Calibration Incorrect	P27AA	The diagnostic monitor verifies that the pressure control solenoid D (GF9 C2 CB29 clutch or GR10 C5 C1356789 clutch pressure or CVT C1 clutch) characterization data is programmed correctly into the TCM EEPROM to match the pressure control solenoid D electrical characteristics of the device currently installed in the transmission valve body assembly.	pressure control solenoid characterization data programming complete Matching is defined as pressure control solenoid characterization data corresponding to the transmission valve body assembly componentry. pressure control solenoid characterization data programming complete is set to FALSE when any of the following is present: Solenoid data is not programmed or incomplete data fault - occurs when a new or service TCM is installed. OR Solenoid class programming fault – the characterization data indicates a different type of device than the TCM calibration data OR Checksum mismatch – the checksum that was calculated from the programmed pressure control solenoid characterization data region does not match the calculated valve at the time of programming. OR Axis data fault – pressure	= FALSE	Pressure control solenoid characterization data is programmed originally at vehicle plant assembly based on transmission valve body assembly part number associated to the unit installed in vehicle. When valve body is serviced, dealership performs reprogramming of TCM with pressure control solenoid characterization data based on the associated transmission valve body part number installed.		execution of monitor occurs once per controller normal power up event during the controller initialization before normal controller time loop execution	Type A, 1 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125; FED--BIN125

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
			control solenoid characterization data has one or more points that are less than the previous match point, axis data must be greater than or equal to previous data values.					

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Pressure Control (PC) Solenoid E Calibration Incorrect	P27AB	The diagnostic monitor verifies that the pressure control solenoid E (GF9 C3 CB38 clutch or GR10 C4 C23467810R clutch or CVT TCC) characterization data is programmed correctly into the TCM EEPROM to match the pressure control solenoid E electrical characteristics of the device currently installed in the transmission valve body assembly.	pressure control solenoid characterization data programming complete Matching is defined as pressure control solenoid characterization data corresponding to the transmission valve body assembly componentry. pressure control solenoid characterization data programming complete is set to FALSE when any of the following is present: Solenoid data is not programmed or incomplete data fault - occurs when a new or service TCM is installed. OR Solenoid class programming fault – the characterization data indicates a different type of device than the TCM calibration data OR Checksum mismatch – the checksum that was calculated from the programmed pressure control solenoid characterization data region does not match the calculated valve at the time of programming. OR Axis data fault – pressure	= FALSE	Pressure control solenoid characterization data is programmed originally at vehicle plant assembly based on transmission valve body assembly part number associated to the unit installed in vehicle. When valve body is serviced, dealership performs reprogramming of TCM with pressure control solenoid characterization data based on the associated transmission valve body part number installed.		execution of monitor occurs once per controller normal power up event during the controller initialization before normal controller time loop execution	Type A, 1 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 | TEST GROUP: KGMXV04.2088 | EMISSIONS STDS: CAL--ULEV125; FED--BIN125

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
			control solenoid characterization data has one or more points that are less than the previous match point, axis data must be greater than or equal to previous data values.					

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Pressure Control (PC) Solenoid F Calibration Incorrect	P27AC	The diagnostic monitor verifies that the pressure control solenoid F (GF9 C4 C4 clutch or GR10 C6 C45678910R clutch or CVT binary pump) characterization data is programmed correctly into the TCM EEPROM to match the pressure control solenoid F electrical characteristics of the device currently installed in the transmission valve body assembly.	pressure control solenoid characterization data programming complete Matching is defined as pressure control solenoid characterization data corresponding to the transmission valve body assembly componentry. pressure control solenoid characterization data programming complete is set to FALSE when any of the following is present: Solenoid data is not programmed or incomplete data fault - occurs when a new or service TCM is installed. OR Solenoid class programming fault – the characterization data indicates a different type of device than the TCM calibration data OR Checksum mismatch – the checksum that was calculated from the programmed pressure control solenoid characterization data region does not match the calculated valve at the time of programming. OR Axis data fault – pressure	= FALSE	Pressure control solenoid characterization data is programmed originally at vehicle plant assembly based on transmission valve body assembly part number associated to the unit installed in vehicle. When valve body is serviced, dealership performs reprogramming of TCM with pressure control solenoid characterization data based on the associated transmission valve body part number installed.		execution of monitor occurs once per controller normal power up event during the controller initialization before normal controller time loop execution	Type A, 1 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
			control solenoid characterization data has one or more points that are less than the previous match point, axis data must be greater than or equal to previous data values.					

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Pressure Control (PC) Solenoid G Calibration Incorrect	P27AD	The diagnostic monitor verifies that the pressure control solenoid G (GF9 C5 C57R clutch or GR10 line or CVT mode valve A ETRS only) characterization data is programmed correctly into the TCM EEPROM to match the pressure control solenoid G electrical characteristics of the device currently installed in the transmission valve body assembly.	pressure control solenoid characterization data programming complete Matching is defined as pressure control solenoid characterization data corresponding to the transmission valve body assembly componentry. pressure control solenoid characterization data programming complete is set to FALSE when any of the following is present: Solenoid data is not programmed or incomplete data fault - occurs when a new or service TCM is installed. OR Solenoid class programming fault – the characterization data indicates a different type of device than the TCM calibration data OR Checksum mismatch – the checksum that was calculated from the programmed pressure control solenoid characterization data region does not match the calculated valve at the time of programming. OR Axis data fault – pressure	= FALSE	Pressure control solenoid characterization data is programmed originally at vehicle plant assembly based on transmission valve body assembly part number associated to the unit installed in vehicle. When valve body is serviced, dealership performs reprogramming of TCM with pressure control solenoid characterization data based on the associated transmission valve body part number installed.		execution of monitor occurs once per controller normal power up event during the controller initialization before normal controller time loop execution	Type A, 1 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
			control solenoid characterization data has one or more points that are less than the previous match point, axis data must be greater than or equal to previous data values.					

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Pressure Control (PC) Solenoid H Calibration Incorrect	P27AE	The diagnostic monitor verifies that the pressure control solenoid H (GF9 C6 C6789 clutch or GR10 TCC or CVT mode valve B ETRS only) characterization data is programmed correctly into the TCM EEPROM to match the pressure control solenoid H electrical characteristics of the device currently installed in the transmission valve body assembly.	pressure control solenoid characterization data programming complete Matching is defined as pressure control solenoid characterization data corresponding to the transmission valve body assembly componentry. pressure control solenoid characterization data programming complete is set to FALSE when any of the following is present: Solenoid data is not programmed or incomplete data fault - occurs when a new or service TCM is installed. OR Solenoid class programming fault – the characterization data indicates a different type of device than the TCM calibration data OR Checksum mismatch – the checksum that was calculated from the programmed pressure control solenoid characterization data region does not match the calculated valve at the time of programming. OR Axis data fault – pressure	= FALSE	Pressure control solenoid characterization data is programmed originally at vehicle plant assembly based on transmission valve body assembly part number associated to the unit installed in vehicle. When valve body is serviced, dealership performs reprogramming of TCM with pressure control solenoid characterization data based on the associated transmission valve body part number installed.		execution of monitor occurs once per controller normal power up event during the controller initialization before normal controller time loop execution	Type A, 1 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
			control solenoid characterization data has one or more points that are less than the previous match point, axis data must be greater than or equal to previous data values.					

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Transmission Range Control A Position Sensor/ Switch Circuit/Open	P27EB	The diagnostic monitor detects an illegal voltage on the mode valve A position sensor circuit.	raw sensor voltage raw sensor voltage	> 1.263 volts < 1.504 volts	diagnostic monitor enable battery voltage battery voltage time ETRS system configuration is internal ERTS	= 1 Boolean ≥ 9.00 volts ≥ 1.00 seconds = CeTRGR_e_InternalETRS	0.100 seconds in 0.163 second sample 6.25 millisecond update rate	Type A, 1 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Transmission Range Control A Position Sensor/ Switch Circuit Stuck On (GR10 Only)	P27EC	Sensor signal fails to transition when solenoid mode valve control commands to PARK, DRIVE or REVERSE occur.	when: mode valve solenoid commaned state mode valve A position sensor state confirmed park servo position transition delay for solenoid controlled mode valve transition (not required for steady state mode valve low conditions) increment fail time when fail time threshold met, increment fail count	 = LOW = HIGH = PARK ≥ **P18A1 P18AA P27EC Mode Valve High To Low Transition Delay**	ETRS system type is internal ETRS time since controller init battery voltage general mode valve diagnostic enable mode valve sensor performance enable high side driver 1 or high side driver 2 is on mode valve related fault (P18AA, P18AB, P27EC Test Fail This Key) AND move valve sensor fault (P27EB, P27ED, P27EE Fault Active) AND park servo fault (P187D, P187E Test Fail This Key On) one good park sensor (P17F5, P17F6, P17F7 (Park Sensor A) Fault Active OR P17FA, P17FB, P17FC (Park Sensor B) Fault Active) pump out available (engine speed for engine speed high time) AND	= CeTRGR_e_InternalETRS ≥ 0.01 seconds ≥ 9.00 volts = 1 Boolean = 1 Boolean = TRUE = FALSE = FALSE = FALSE = FALSE = FALSE = TRUE ≥ 250.00 **Pump Out Available** ≥ **Transition Time**	steady state fail time ≥ 0.02 seconds OR transition fail time ≥ 0.02 seconds fail count ≥ 4.00 counts update rate 6.25 milliseconds	Type A, 1 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					line pressure available (pressure commanded)	= TRUE ≥ 100.00 kPa		
			when: mode valve solenoid commaned state mode valve A position sensor state confirmed park servo position transition delay for solenoid controlled mode valve transition (not required for steady state mode valve high conditions) increment fail time when fail time threshold met, increment fail count	 = HIGH = LOW = OUT OF PARK ≥ **P18AB P27EC Mode Valve Low to High Transition Delay**	ETRS system type is internal ETRS time since controller init battery voltage general mode valve diagnostic enable mode valve sensor performance enable high side driver 1 or high side driver 2 is on mode valve related fault (P18AA, P18AB, P27EC Test Fail This Key) AND move valve sensor fault (P27EB, P27ED, P27EE Fault Active) AND park servo fault (P187D, P187E Test Fail This Key On) one good park sensor (P17F5, P17F6, P17F7 (Park Sensor A) Fault Active OR P17FA, P17FB, P17FC (Park Sensor B) Fault Active)	= CeTRGR_e_InternalETRS ≥ 0.01 seconds ≥ 9.00 volts = 1 Boolean = 1 Boolean = TRUE = FALSE = FALSE = FALSE = FALSE = FALSE	steady state fail time ≥ 0.25 seconds transition fail time ≥ 0.25 seconds fail count ≥ 4.00 counts update rate 6.25 milliseconds	

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					pump out available (engine speed for engine speed high time) AND line pressure available (pressure commanded)	= TRUE ≥ 250.00 **Pump Out Available** ≥ **Transition Time** = TRUE ≥ 100.00 kPa		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Transmission Range Control A Position Sensor/ Switch Circuit Low	P27ED	The diagnostic monitor detects a ground short or open circuit fault on the mode valve A position sensor circuit.	raw sensor voltage	< 0.414 volts	diagnostic monitor enable battery voltage battery voltage time ETRS system configuration is internal ERTS	= 1 Boolean ≥ 9.00 volts ≥ 1.00 seconds = CeTRGR_e_InternalETRS	0.100 seconds in 0.163 second sample 6.25 millisecond update rate	Type A, 1 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Transmission Range Control A Position Sensor/ Switch Circuit High	P27EE	The diagnostic monitor detects a short to voltage on the mode valve A position sensor circuit.	raw sensor voltage	> 2.538 volts	diagnostic monitor enable battery voltage battery voltage time ETRS system configuration is internal ERTS	= 1 Boolean ≥ 9.00 volts ≥ 1.00 seconds = CeTRGR_e_InternalETRS	0.100 seconds in 0.163 second sample 6.25 millisecond update rate	Type A, 1 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Pressure Control (PC) Solenoid G Control Circuit Open	P2812	Controller specific circuit diagnoses 9 speed Line Pressure Control Circuit, 10 speed Line Pressure Control Circuit, or 8 speed TCC Control Circuit for an open circuit failure by comparing a voltage measurement to controller specific voltage thresholds.	Voltage measurement outside of controller specific acceptable range indicates an open circuit Controller specific circuit voltage thresholds are set to meet the following controller specification for an open circuit	≥ 200 K Ω impedance between signal and controller ground When malfunction criteria threshold is met, increment fail time and increment sample time, otherwise increment only sample time	battery voltage run crank voltage OR accessory voltage active diagnostic monitor enable calibration (solenoid is mapped to high side driver 1 (CeTSCR_e_HSD1) AND high side driver 1) OR (solenoid is mapped to high side driver 2 (CeTSCR_e_HSD2) AND high side driver 2) OR (solenoid is mapped to high side driver 3 (CeTSCR_e_HSD3) AND high side driver 3)	≥ 9.00 volts and ≤ 32.00 volts ≥ 5.00 volts = TRUE = 1 (1 is enable, 0 is disable) = CeTSCR_e_HSD1 (CeTSCR_e_NoHSD will disable) = ON = CeTSCR_e_HSD1 (CeTSCR_e_NoHSD will disable) = ON = CeTSCR_e_HSD1 (CeTSCR_e_NoHSD will disable) = ON	fail time ≥ 0.30 seconds out of sample time ≥ 0.50 seconds 6.25 millisecond update rate ≥ 1.00 seconds ≥ 25 milliseconds ≥ 12.5 milliseconds	Type A, 1 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Pressure Control (PC) Solenoid G Control Circuit Low	P2814	Controller specific circuit diagnoses 9 speed Line Pressure Circuit, 10 speed Line Pressure Circuit, or 8 speed TCC Control Circuit for a ground short circuit failure by comparing a voltage measurement to controller specific voltage thresholds.	Voltage measurement outside of controller specific acceptable range indicates a ground short Controller specific circuit voltage thresholds are set to meet the following controller specification for a ground short	≤ 0.5 Ω impedance between signal and controller ground When malfunction criteria threshold is met, increment fail time and increment sample time, otherwise increment only sample time			fail time ≥ 0.30 seconds out of sample time ≥ 0.50 seconds 6.25 millisecond update rate	Type A, 1 Trips
					battery voltage	≥ 9.00 volts and ≤ 32.00 volts	≥ 1.00 seconds	
					(run crank voltage OR accessory voltage active)	≥ 5.00 volts = TRUE	≥ 25 milliseconds ≥ 12.5 milliseconds	
					diagnostic monitor enable calibration	= 1 (1 is enable, 0 is disable)		
					(solenoid is mapped to high side driver 1 (CeTSCR_e_HSD1) AND high side driver 1)	= CeTSCR_e_HSD1 (CeTSCR_e_NoHSD will disable) = ON		
					OR			
					(solenoid is mapped to high side driver 2 (CeTSCR_e_HSD2) AND high side driver 2)	= CeTSCR_e_HSD1 (CeTSCR_e_NoHSD will disable) = ON		
					OR			
					(solenoid is mapped to high side driver 3 (CeTSCR_e_HSD3) AND high side driver 3)	= CeTSCR_e_HSD1 (CeTSCR_e_NoHSD will disable) = ON		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Pressure Control (PC) Solenoid G Control Circuit High	P2815	Controller specific circuit diagnoses 9 speed Line Pressure Circuit, 10 speed Line Pressure Circuit, or 8 speed TCC Control Circuit for a short to voltage circuit failure by comparing a voltage measurement to controller specific voltage thresholds.	Voltage measurement outside of controller specific acceptable range indicates a short to voltage Controller specific circuit voltage thresholds are set to meet the following controller specification for a short to voltage	≤ 0.5 Ω impedance between signal and controller voltage source When malfunction criteria threshold is met, increment fail time and increment sample time, otherwise increment only sample time	battery voltage (run crank voltage OR accessory voltage active) diagnostic monitor enable calibration (solenoid is mapped to high side driver 1 (CeTSCR_e_HSD1) AND high side driver 1) OR (solenoid is mapped to high side driver 2 (CeTSCR_e_HSD2) AND high side driver 2) OR (solenoid is mapped to high side driver 3 (CeTSCR_e_HSD3) AND high side driver 3)	≥ 9.00 volts and ≤ 32.00 volts ≥ 5.00 volts = TRUE = 1 (1 is enable, 0 is disable) = CeTSCR_e_HSD1 (CeTSCR_e_NoHSD will disable) = ON = CeTSCR_e_HSD1 (CeTSCR_e_NoHSD will disable) = ON = CeTSCR_e_HSD1 (CeTSCR_e_NoHSD will disable) = ON	fail time ≥ 0.30 seconds out of sample time ≥ 0.50 seconds ≥ 1.00 seconds ≥ 25 milliseconds ≥ 12.5 milliseconds	Type A, 1 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Pressure Control Solenoid H Performance /Stuck Off	P2817	The diagnostic monitor detects the transmission torque converter control valve solenoid failed hydraulically off. The monitor executes when the transmission torque converter is commanded to a “lock” mode during which the torque converter will be controlled to near zero (0.0) RPM slip speed, or, an “on” mode during which the torque converter will be controlled to target slip speed using slip speed error. The transmission torque converter control valve solenoid is considered failed hydraulically off when the “lock” mode slip speed is excessive, or, when the ‘on” mode slip speed error is excessive.	if use TCC slip speed error OR TCC control mode TCC slip speed error = TCC slip speed - TCC comand slip speed else if TCC control mode torque convert slip = engine speed - transmission input shaft speed then update fail time 25 millisecond update rate	= 0 Boolean = ON mode (controlled slip mode) ≥ **P2817 TCC stuck off fail TCC slip speed** see supporting table = LOCK ≥ 130.0 RPM	diagnostic monitor enable TCC command capacity TCC command pressure (TCC control mode previous TCC control mode previous TCC control mode previous) AND (TCC control mode current OR TCC control mode current) (TCC stuck off enable OR TCC stuck on enable) hydraulic pressure available: engine speed	= 1 Boolean ≥ 0.00 % ≥ 400.0 kPa ≠ TCC control mode current ≠ ON mode (controlled slip mode) ≠ LOCK = ON mode (controlled slip mode) = LOCK = 1 Boolean = 1 Boolean ≥ 500.0 RPM	fail time ≥ 4.000 seconds increment fail count fail count ≥ 3 counts 25 millisecond update rate TCC command capacity time ≥ 0.00 seconds TCC command pressure time ≥ 2.00 seconds engine speed time ≥ **engine speed time for transmission hydraulic pressure available**	Type A, 1 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
							see supporting table	
					service fast learn active	= FALSE		
					battery voltage	≥ 9.00 volts	battery voltage time ≥ 0.100 seconds	
					run crank voltage	≥ 9.00 volts	run crank voltage time ≥ 0.100 seconds	
					P281B falut active	= FALSE		
					P281D falut active	= FALSE		
					P281E falut active	= FALSE		
					P0722 fault pending	= FALSE		
					P0723 fault pending	= FALSE		
					P0716 fault pending	= FALSE		
					P0717 fault pending	= FALSE		
					P07BF fault pending	= FALSE		
					P07C0 fault pending	= FALSE		
					(PTO active OR	= FALSE		
					PTO disable calibration)	= 1 Boolean		
					accelerator pedal position	≥ 8.0 %		
					accelerator pedal position	≤ 99.0 %		
					range shift state	= range shift complete		
					transmission fluid temperature	≥ -6.66 °C		
					transmission fluid temperature	≤ 130.0 °C		
					engine torque	≥ 50.0 Nm		
					engine torque	≤ 8,191.8 Nm		
					P2817 test fail this key on	= FALSE		
					(TCC control mode OR	= ON mode (controlled slip mode)		
					TCC control mode)	= LOCK		
					break latch state (clutch select valve solenoid)	= disabled (clutch select valve not transitioning)		
					attained gear	≥ CeCGSR_e_CR_Second		
					DTCs not fault active	AcceleratorPedalFailure EngineTorqueEstInaccurate P0716, P0717, P07BF,		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
						P07C0 P0722, P0723, P077C, P077D		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Pressure Control Solenoid H Stuck On - GR10 specific	P2818	UPDATE UPDATE UPDATE The diagnostic monitor detects the transmission torque converter control valve solenoid failed hydraulically on. The torque converter hydraulic control circuit is multiplexed with the transmission clutch select valve hydraulic control circuit, allowing for the torque converter control valve solenoid stuck on test to execute when the clutch select valve solenoid is commanded ON. When the clutch select valve solenoid is commanded ON as the vehicle speed decreases toward zero KPH, and, if the torque converter control valve solenoid is stuck on, the torque converter slip speed rate of change will have a large slope while decreasing toward zero RPM, and the torque converter slip speed will remain low near zero RPM.	when: [active clutch control ABS(TCC slip speed) (set point engine speed - engine speed) (maximum engine speed during garage shift - engine speed) engine torque update TCC stuck on fail time garage shift] OR when: [active clutch control ABS(TCC slip speed) engine torque (set point engine speed - engine speed) rate of change of engine speed update TCC stuck on stall pending time]	 = garage shift ≤ 30.0 RPM ≥ 50.0 RPM ≥ 50.0 RPM ≥ 50.0 Nm ≠ garage shift ≤ 30.0 RPM ≥ 70.0 Nm ≥ 200.0 RPM ≤ -2,000.0 RPM/ second	(TCC stuck off enable OR TCC stuck on enable) hydraulic pressure available: engine speed	= 1 Boolean = 1 Boolean ≥ 500.0 RPM	when: TCC stuck on fail time garage shift ≥ **P2818 TCC stuck on fail time garage shift - GR10** update fail count when: fail count ≥ 3 counts set DTC fault active 25 millisecond update rate when: TCC stuck on stall pending time ≥ **P2818 TCC stuck on fail time stall pending - GR10** when: fail count ≥ 4 counts set DTC fault active 25 millisecond update rate engine speed time ≥	Type A, 1 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
							engine speed time for transmission hydraulic pressure available	
					service fast learn active	= FALSE		
					battery voltage	≥ 9.00 volts		
					run crank voltage	≥ 9.00 volts		
							battery voltage time ≥ 0.100 seconds	
					P281B falut active	= FALSE		
					P281D falut active	= FALSE	run crank voltage time ≥ 0.100 seconds	
					P281E falut active	= FALSE		
					P0722 fault pending	= FALSE		
					P0723 fault pending	= FALSE		
					P0716 fault pending	= FALSE		
					P0717 fault pending	= FALSE		
					P07BF fault pending	= FALSE		
					P07C0 fault pending	= FALSE		
					P0746 fault pending	= FALSE		
					P0747 fault pending	= FALSE		
					P0776 fault pending	= FALSE		
					P0777 fault pending	= FALSE		
					P0796 fault pending	= FALSE		
					P0797 fault pending	= FALSE		
					P2714 fault pending	= FALSE		
					P2715 fault pending	= FALSE		
					P2723 fault pending	= FALSE		
					P2724 fault pending	= FALSE		
					P2732 fault pending	= FALSE		
					P2733 fault pending	= FALSE		
					P2820 fault pending	= FALSE		
					P2821 fault pending	= FALSE		
					PRNDL	≠ NEUTRAL		
					PRNDL	≠ REVERSE		
					diagnostic monitor enable	1 Boolean		
					TCC command mode	= OFF		
					(PTO active OR	= FALSE		
					PTO disable calibration)	= 1 Boolean		
					transmission fluid	≥ -6.66 °C		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					temperature			
					transmission fluid temperature	≤ 130.00 °C		
					engine torque	≥ -25.0 Nm		
					engine torque	≤ 800.0 Nm		
					P2818 test fail this key on	= FALSE		
					vehicle speed (garage shift)	≤ 4.0 KPH		
					vehicle speed (not garage shift)	≤ 15.0 KPH		
					engine speed	≥ 200.0 RPM		
					engine speed	≤ 600.0 RPM		
					accelerator pedal position	≤ 5.0 %		
					4WD low state	= FALSE		
					(driver shift mode active OR	= FALSE		
					driver shift mode calibration)	= 0 Boolean		
					(misfire requests TCC off OR	= FALSE		
					misfire TCC off calibration)	= 0 Boolean		
					clucth control solenoid stuck ON AND stuck OFF	= FALSE		
					intrusive shift active	= FALSE		
					TCC solenoid pulse request	= FALSE		
					minumum trubine speed	≤ set point engine speed - 50.0 RPM		
					DTCs not fault active	AcceleratorPedalFailure EngineTorqueEstInaccurate P0716, P0717, P07BF, P07C0 P0722, P0723, P077C, P077D		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Pressure Control Solenoid H Control Circuit Open	P281B	Controller specific circuit diagnoses 9 speed TCC Control Circuit, 10 speed TCC Control Circuit, or 8 speed T93 Default Valve Control Circuit for an open circuit failure by comparing a voltage measurement to controller specific voltage thresholds.	Voltage measurement outside of controller specific acceptable range indicates an open circuit Controller specific circuit voltage thresholds are set to meet the following controller specification for an open circuit	≥ 200 K Ω impedance between signal and controller ground When malfunction criteria threshold is met, increment fail time and increment sample time, otherwise increment only sample time	battery voltage run crank voltage OR accessory voltage active diagnostic monitor enable calibration (solenoid is mapped to high side driver 1 (CeTSCR_e_HSD1) AND high side driver 1) OR (solenoid is mapped to high side driver 2 (CeTSCR_e_HSD2) AND high side driver 2) OR (solenoid is mapped to high side driver 3 (CeTSCR_e_HSD3) AND high side driver 3)	≥ 9.00 volts and ≤ 32.00 volts ≥ 5.00 volts = TRUE = 1 (1 is enable, 0 is disable) = CeTSCR_e_HSD1 (CeTSCR_e_NoHSD will disable) = ON = CeTSCR_e_HSD1 (CeTSCR_e_NoHSD will disable) = ON = CeTSCR_e_HSD1 (CeTSCR_e_NoHSD will disable) = ON	fail time ≥ 0.30 seconds out of sample time ≥ 0.50 seconds 6.25 millisecond update rate ≥ 1.00 seconds ≥ 25 milliseconds ≥ 12.5 milliseconds	Type A, 1 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Pressure Control Solenoid H Control Circuit Low	P281D	Controller specific circuit diagnoses 9 speed TCC Pressure Control Circuit, 10 speed TCC Control Circuit, or 8 speed Default Valve Control Circuit for a ground short circuit failure by comparing a voltage measurement to controller specific voltage thresholds. For 8 speed T87a controllers, an open circuit on the Default Valve Control Circuit will also set P281D.	Voltage measurement outside of controller specific acceptable range indicates a ground short Controller specific circuit voltage thresholds are set to meet the following controller specification for a ground short	≤ 0.5 Ω impedance between signal and controller ground When malfunction criteria threshold is met, increment fail time and increment sample time, otherwise increment only sample time			fail time ≥ 0.30 seconds out of sample time ≥ 0.50 seconds 6.25 millisecond update rate	Type A, 1 Trips
					battery voltage	≥ 9.00 volts and ≤ 32.00 volts	≥ 1.00 seconds	
					(run crank voltage OR accessory voltage active)	≥ 5.00 volts = TRUE	≥ 25 milliseconds ≥ 12.5 milliseconds	
					diagnostic monitor enable calibration	= 1 (1 is enable, 0 is disable)		
					(solenoid is mapped to high side driver 1 (CeTSCR_e_HSD1) AND high side driver 1)	= CeTSCR_e_HSD1 (CeTSCR_e_NoHSD will disable) = ON		
					OR			
					(solenoid is mapped to high side driver 2 (CeTSCR_e_HSD2) AND high side driver 2)	= CeTSCR_e_HSD1 (CeTSCR_e_NoHSD will disable) = ON		
					OR			
					(solenoid is mapped to high side driver 3 (CeTSCR_e_HSD3) AND high side driver 3)	= CeTSCR_e_HSD1 (CeTSCR_e_NoHSD will disable) = ON		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Pressure Control Solenoid H Control Circuit High	P281E	Controller specific circuit diagnoses 9 speed TCC Pressure Control Circuit, 10 speed TCC Control Circuit, or 8 speed Default Valve Control Circuit for a short to voltage circuit failure by comparing a voltage measurement to controller specific voltage thresholds.	Voltage measurement outside of controller specific acceptable range indicates a short to voltage Controller specific circuit voltage thresholds are set to meet the following controller specification for a short to voltage	≤ 0.5 Ω impedance between signal and controller voltage source When malfunction criteria threshold is met, increment fail time and increment sample time, otherwise increment only sample time			fail time ≥ 0.30 seconds out of sample time ≥ 0.50 seconds	Type A, 1 Trips
					battery voltage	≥ 9.00 volts and ≤ 32.00 volts	≥ 1.00 seconds	
					(run crank voltage OR	≥ 5.00 volts	≥ 25 milliseconds	
					accessory voltage active)	= TRUE	≥ 12.5 milliseconds	
					diagnostic monitor enable calibration	= 1 (1 is enable, 0 is disable)		
					(solenoid is mapped to high side driver 1 (CeTSCR_e_HSD1) AND high side driver 1)	= CeTSCR_e_HSD1 (CeTSCR_e_NoHSD will disable) = ON		
					OR			
					(solenoid is mapped to high side driver 2 (CeTSCR_e_HSD2) AND high side driver 2)	= CeTSCR_e_HSD1 (CeTSCR_e_NoHSD will disable) = ON		
					OR			
					(solenoid is mapped to high side driver 3 (CeTSCR_e_HSD3) AND high side driver 3)	= CeTSCR_e_HSD1 (CeTSCR_e_NoHSD will disable) = ON		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Pressure Control (PC) Solenoid J Stuck Off (GR10)	P2820	Each pressure control solenoid stuck off diagnostic monitor detects a control solenoid failed hydraulically off, while the solenoid is electrically functional. This diagnostic monitor detects the default disable valve solenoid failed hydraulically off. The default disable valve is used to route hydraulic fluid to transmission clutches to achieve a hydraulic default gear in the event that a fault occurs which requires the solenoid electrical drivers to be turned off. If the default disable solenoid is hydraulically stuck off, the transmission will enter hydraulic default unintentionally while the control system is actively commanding another gear, which can result in a tie-up condition. When the default disable valve solenoid is hydraulically off while in drive, hydraulic fluid will be routed to clutches to achieve either 7th or 2nd gear. If the vehicle is moving	(gear ratio	≥ 3.250			fail time ≥ 0.25 seconds	Type A, 1 Trips
			AND					
			gear ratio)	≤ 2.750				
			OR				6.25 milliscond update	
			(gear ratio	≥ 0.980				
			AND		*****************************	*****************************		
			gear ratio)	≤ 1.020	system-level enables:			
			(C1 clutch slip speed	≤ 50.00	use battery voltage calibration is FALSE	= 1 Boolean		
			C2 clutch slip speed	≤ 50.00				
			C3 clutch slip speed	≤ 50.00				
			C4 clutch slip speed	≤ 50.00	OR			
			OR		(use battery voltage calibration is TRUE	= 1 Boolean		
			C3 clutch slip speed	≤ 50.00				
			C4 clutch slip speed	≤ 50.00	AND			
			C5 clutch slip speed	≤ 50.00			battery voltage time ≥ 0.100 seconds	
			C6 clutch slip speed)	≤ 50.00	battery voltage)	≥ 9.00 volts		
			update fail time 6.25 milliscond update		use run crank voltage calibration is FALSE	= 0 Boolean		
					OR			
					(use run crank voltage calibration is TRUE	= 0 Boolean		
					AND		run crank voltage time ≥ 0.100 seconds	
					run crank voltage)	≥ 9.00 volts		
					TCM output driver high side driver 1, clutch pressure control solenoid driver circuit enabled	= TRUE Boolean		
					TCM output driver high side driver 2, clutch pressure control solenoid driver circuit enabled	= TRUE Boolean		
					service fast learn active	= FALSE Boolean		
					service solenoid cleaning procedure active	= FALSE Boolean		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
		and the control system is commanding a different gear, the solenoid fault can be detected as either a clutch tie-up or startle mitigation event. Shifting to neutral while monitoring gear ratio will isolate the fault as either a stuck on clutch solenoid or a stuck off default disable valve solenoid. For GR10 non-ETRS applications, the stuck off solenoid can be dected by monitoring transmission input speed deceleration magnitude and timing during a stationary shift into drive from park, neutral, or reverse while commanding neutral.			hydraulic pressure available hydraulic line pressure ***************************** conditions to trigger start of test: (clutch control solenoid test state OR clutch control solenoid test state) Offgoing clutch stuck on test result (for any clutch) Default disable stuck off enable cal for tie-up events current predicted hydraulic default gear if solenoid drivers are turned off (current attained gear OR current attained gear) ***************************** conditions needed through duration of test:	= TRUE ≥ -999.00 kPa ***************************** = Tie Up Test Active = Tie Up Test Hold = Test Failing = 1 (1 to enable, 0 to disable) = a drive gear (i.e. 2nd or 7th gear) = CeCGSR_e_Seventh (low gear hydraulic default) = CeCGSR_e_Seventh (high gear hydraulic default) ***************************** = NEUTRAL		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					commanded gear	≥ 36.00 RPM		
					transmission output speed	= FORWARD		
					driver direction request	******************************		
					****************************** DTCs not fault pending	P17CE P1783 P178F P17C6 P17C4 P17C7 P17D3 P17C5 P0721 P172A P172B P0716 P0717 P07C0 P07BF P0723 P0722 P077D P077C P176C P176D P176B P17D6		
					DTCs not test fail this key on	P2534 P0707 P0708 P0716 P0717 P07C0 P07BF P077D P077C P126C P176D P17CC P17CD P0962 P0966 P0970 P2720 P2729 P2738 P0963 P0967 P0971 P2721 P2730 P2739 P0960 P0964 P0968 P2718 P2727 P2736 P17CE P1783 P17D3 P17C5 P0721 AcceleratorPedalFailure CrankSensor_FA		
					DTCs not fault active	P0707 P0708 P0723 P0722 P176B P17D6 P0747 P0777 P0797 P2715 P2724 P2733 P0746 P0776 P0796 P2714 P2723 P2732 P2821 P2820 P178F P17C6 P17C4 P17C7 P172A P172B		
			(gear ratio AND gear ratio)	≥ 3.250 ≤ 2.750			fail time ≥ 0.50 seconds	

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
			OR (gear ratio AND gear ratio) (C1 clutch slip speed C2 clutch slip speed C3 clutch slip speed C4 clutch slip speed OR C3 clutch slip speed C4 clutch slip speed C5 clutch slip speed C6 clutch slip speed) update fail time 6.25 milliscond update	≥ 0.980 ≤ 1.020 ≤ 40.00 ≤ 40.00 ≤ 40.00 ≤ 40.00 ≤ 40.00 ≤ 40.00 ≤ 40.00 ≤ 40.00	***************************** system-level enables: use battery voltage calibration is FALSE OR (use battery voltage calibration is TRUE AND battery voltage) use run crank voltage calibration is FALSE OR (use run crank voltage calibration is TRUE AND run crank voltage) TCM output driver high side driver 1, clutch pressure control solenoid driver circuit enabled TCM output driver high side driver 2, clutch pressure control solenoid driver circuit enabled service fast learn active service solenoid cleaning procedure active hydraulic pressure available	***************************** = 1 Boolean = 1 Boolean ≥ 9.00 volts = 0 Boolean = 0 Boolean ≥ 9.00 volts = TRUE Boolean = TRUE Boolean = FALSE Boolean = FALSE Boolean = TRUE	6.25 milliscond update battery voltage time ≥ 0.100 seconds run crank voltage time ≥ 0.100 seconds	

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					hydraulic line pressure	≥ -999.00 kPa		
					**************************** conditions to trigger start of test:	*****************************		
					(clutch control solenoid test state OR clutch control solenoid test state)	= Tie Up Test Active = Tie Up Test Hold		
					Offgoing clutch stuck on test result (for any clutch)	= Test Failing		
					Default disable stuck off enable cal for tie-up events	= 1 (1 to enable, 0 to disable)		
					(current attained gear OR current attained gear)	= CeCGSR_e_Seventh (low gear hydraulic default) = CeCGSR_e_Seventh (high gear hydraulic default)		
					hydraulic default at launch test active	= FALSE		
					***************************** conditions needed through duration of test:	*****************************		
					current predicted hydraulic default gear if solenoid drivers are turned off	= a drive gear (i.e. 2nd or 7th gear) = NEUTRAL		
					commanded gear	= FORWARD		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 | **TEST GROUP: KGMXV04.2088** | **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					driver direction request	******************************		
					****************************** DTCs not fault pending	P17CE P1783 P178F P17C6 P17C4 P17C7 P17D3 P17C5 P0721 P172A P172B P0716 P0717 P07C0 P07BF P0723 P0722 P077D P077C P176C P176D P176B P17D6		
					DTCs not test fail this key on	P2534 P0707 P0708 P0716 P0717 P07C0 P07BF P077D P077C P126C P176D P17CC P17CD P0962 P0966 P0970 P2720 P2729 P2738 P0963 P0967 P0971 P2721 P2730 P2739 P0960 P0964 P0968 P2718 P2727 P2736 P17CE P1783 P17D3 P17C5 P0721 AcceleratorPedalFailure CrankSensor_FA		
					DTCs not fault active	P0707 P0708 P0723 P0722 P176B P17D6 P0747 P0777 P0797 P2715 P2724 P2733 P0746 P0776 P0796 P2714 P2723 P2732 P2821 P2820 P178F P17C6 P17C4 P17C7 P172A P172B		
			input speed deceleration	> **P2820 GR10 hydraulic default input speed deceleration threshold**			fail time ≥ 0.10 seconds observed within:	

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
			transmission output shaft speed update fail time 6.25 millisecond update	≤ 16 RPM			**P2820 GR10 hydraulic default at launch test window** 6.25 milliscond update	
					*****************************	*****************************		
					system-level enables:			
					use battery voltage calibration is FALSE	= 1 Boolean		
					OR			
					(use battery voltage calibration is TRUE	= 1 Boolean		
					AND			
					battery voltage)	≥ 9.00 volts		
					use run crank voltage calibration is FALSE	= 0 Boolean		
					OR			
					(use run crank voltage calibration is TRUE	= 0 Boolean		
					AND			
					run crank voltage)	≥ 9.00 volts		
					TCM output driver high side driver 1, clutch pressure control solenoid driver circuit enabled	= TRUE Boolean		
					TCM output driver high side driver 2, clutch pressure control solenoid driver circuit enabled	= TRUE Boolean		
					service fast learn active	= FALSE Boolean		
					service solenoid cleaning procedure active	= FALSE Boolean		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					hydraulic pressure available	= TRUE		
					hydraulic line pressure	≥ -999.00 kPa		
					****************************** conditions needed to trigger test:	******************************		
					Driver direction change request	= TRUE		
					default disable stuck off at launch enable cal	= 0 (1 to enable, 0 to disable)		
					ETRS system type	= CeTRGR_e_InternalETRS (CeTRGR_e_NoETRS to enable)		
					deceleration test on previous shift into drive failed	= TRUE		
					****************************** conditions needed through duration of test:	******************************		
					commanded gear	= NEUTRAL		
					Driver direction request	= FORWARD		
					current predicted hydraulic default gear if solenoid drivers are turned off	= a drive gear (i.e. 2nd)		
					****************************** DTCs not fault pending	****************************** P17CE P1783 P178F P17C6 P17C4 P17C7 P17D3 P17C5 P0721 P172A P172B P0716		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					DTCs not test fail this key on	P0717 P07C0 P07BF P0723 P0722 P077D P077C P176C P176D P176B P17D6		
					DTCs not fault active	P2534 P0707 P0708 P0716 P0717 P07C0 P07BF P077D P077C P126C P176D P17CC P17CD P0962 P0966 P0970 P2720 P2729 P2738 P0963 P0967 P0971 P2721 P2730 P2739 P0960 P0964 P0968 P2718 P2727 P2736 P17CE P1783 P17D3 P17C5 P0721 AcceleratorPedalFailure CrankSensor_FA		
						P0707 P0708 P0723 P0722 P176B P17D6 P0747 P0777 P0797 P2715 P2724 P2733 P0746 P0776 P0796 P2714 P2723 P2732 P2821 P2820 P178F P17C6 P17C4 P17C7 P172A P172B		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Pressure Control Solenoid J Stuck On (Default Disable Solenoid Stuck On) (GR10 Only)	P2821	The diagnostic monitor tests for the default disable solenoid stuck on at engine start (pump out pressure transition)	when: mode valve solenoid commaned state mode valve position in park engine crank active (required to initiate test) increment fail time when fail time threshold met, increment fail count	 = LOW = HIGH = TRUE	ETRS system type is internal ETRS time since controller init battery voltage general mode valve diagnostic enable default disable solenoid stuck on diagnostic enable high side driver 1 or high side driver 2 is on mode valve related fault (P18AA, P18AB, P27EC Test Fail This Key) AND (P27EB, P27ED, P27EE Fault Active) pump out available (engine speed for engine speed high time)	= CeTRGR_e_InternalETRS ≥ 0.01 seconds ≥ 9.00 volts = 1 Boolean = 1 Boolean = TRUE = FALSE = FALSE = TRUE ≥ 250.00 **Pump Out Available** ≥ **Transition Time**	fail time ≥ 0.25 seconds fail count ≥ 2.00 counts update rate 6.25 milliseconds	

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Pressure Control Solenoid J Control Circuit Open (T93 Controller only)	P2824	Controller specific circuit diagnoses 10 speed Default Disable Control Circuit for an open circuit failure by comparing a voltage measurement to controller specific voltage thresholds.	Voltage measurement outside of controller specific acceptable range indicates an open circuit Controller specific circuit voltage thresholds are set to meet the following controller specification for an open circuit	≥ 200 K Ω impedance between signal and controller ground When malfunction criteria threshold is met, increment fail time and increment sample time, otherwise increment only sample time			fail time ≥ 0.30 seconds out of sample time ≥ 0.50 seconds 6.25 millisecond update rate	Type A, 1 Trips
					battery voltage	≥ 9.00 volts and ≤ 32.00 volts	≥ 1.00 seconds	
					(run crank voltage OR accessory voltage active)	≥ 5.00 volts = TRUE	≥ 25 milliseconds ≥ 12.5 milliseconds	
					diagnostic monitor enable calibration	= 1 (1 is enable, 0 is disable)		
					(solenoid is mapped to high side driver 1 (CeTSCR_e_HSD1) AND high side driver 1)	= CeTSCR_e_HSD2 (CeTSCR_e_NoHSD will disable) = ON		
					OR			
					(solenoid is mapped to high side driver 2 (CeTSCR_e_HSD2) AND high side driver 2)	= CeTSCR_e_HSD2 (CeTSCR_e_NoHSD will disable) = ON		
					OR			
					(solenoid is mapped to high side driver 3 (CeTSCR_e_HSD3) AND high side driver 3)	= CeTSCR_e_HSD2 (CeTSCR_e_NoHSD will disable) = ON		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Pressure Control Solenoid J Control Circuit Low	P2826	Controller specific circuit diagnoses 9 speed Clutch Select Valve Control Circuit, 10 speed Default Disable Control Circuit, or 8 speed Boost Valve Control Circuit for a ground short circuit failure by comparing a voltage measurement to controller specific voltage thresholds. For T87a controllers, an open circuit on solenoid I/J will also set P2826	Voltage measurement outside of controller specific acceptable range indicates a ground short Controller specific circuit voltage thresholds are set to meet the following controller specification for a ground short	≤ 0.5 Ω impedance between signal and controller ground When malfunction criteria threshold is met, increment fail time and increment sample time, otherwise increment only sample time			fail time ≥ 0.30 seconds out of sample time ≥ 0.50 seconds 6.25 millisecond update rate	Type A, 1 Trips
					battery voltage	≥ 9.00 volts and ≤ 32.00 volts	≥ 1.00 seconds	
					(run crank voltage	≥ 5.00 volts	≥ 25 milliseconds	
					OR			
					accessory voltage active)	= TRUE	≥ 12.5 milliseconds	
					diagnostic monitor enable calibration	= 1 (1 is enable, 0 is disable)		
					(solenoid is mapped to high side driver 1 (CeTSCR_e_HSD1)	= CeTSCR_e_HSD2 (CeTSCR_e_NoHSD will disable)		
					AND high side driver 1)	= ON		
					OR			
					(solenoid is mapped to high side driver 2 (CeTSCR_e_HSD2)	= CeTSCR_e_HSD2 (CeTSCR_e_NoHSD will disable)		
					AND high side driver 2)	= ON		
					OR			
					(solenoid is mapped to high side driver 3 (CeTSCR_e_HSD3)	= CeTSCR_e_HSD2 (CeTSCR_e_NoHSD will disable)		
					AND high side driver 3)	= ON		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Pressure Control Solenoid J Control Circuit High	P2827	Controller specific circuit diagnoses 9 speed Clutch Valve Control Circuit, 10 speed Default Disable Control Circuit, or 8 speed Boost Valve Control Circuit for a short to voltage circuit failure by comparing a voltage measurement to controller specific voltage thresholds.	Voltage measurement outside of controller specific acceptable range indicates a short to voltage Controller specific circuit voltage thresholds are set to meet the following controller specification for a short to voltage	≤ 0.5 Ω impedance between signal and controller voltage source When malfunction criteria threshold is met, increment fail time and increment sample time, otherwise increment only sample time	battery voltage (run crank voltage OR accessory voltage active) diagnostic monitor enable calibration (solenoid is mapped to high side driver 1 (CeTSCR_e_HSD1) AND high side driver 1) OR (solenoid is mapped to high side driver 2 (CeTSCR_e_HSD2) AND high side driver 2) OR (solenoid is mapped to high side driver 3 (CeTSCR_e_HSD3) AND high side driver 3)	≥ 9.00 volts and ≤ 32.00 volts ≥ 5.00 volts = TRUE = 1 (1 is enable, 0 is disable) = CeTSCR_e_HSD2 (CeTSCR_e_NoHSD will disable) = ON = CeTSCR_e_HSD2 (CeTSCR_e_NoHSD will disable) = ON = CeTSCR_e_HSD2 (CeTSCR_e_NoHSD will disable) = ON	fail time ≥ 0.30 seconds out of sample time ≥ 0.50 seconds ≥ 1.00 seconds ≥ 25 milliseconds ≥ 12.5 milliseconds	Type A, 1 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Engine Stall Prevention Active Signal Message Counter Incorrect	P30BD	The diagnostic monitor detects an alive rolling count error in the CAN frame containing the engine stall protection signal value. The alive rolling count sequences 0, 1, 2, 3 repeatedly. As each serial data frame is broadcast by the transmitting controller, the transmitting controller increments the alive rolling count in this sequence manner. The receiving controller compares the most recent received alive rolling count value to the previous value plus one. If the values are not equal, an alive rolling count error has occurred. If continuous alive rolling count errors occur the DTC is set.	rolling count value received from ECM and expected TCM calculated value not equal	= TRUE	Loop rate calibration either 10 milliseconds or 12.5 milliseconds service mode $04 active battery voltage battery voltage time engine stall protection ECM frame recieved	= CeCFMD_e_DEC_TimeBase_12p5 = FALSE ≥ 11.00 volts ≥ 300.000 seconds = TRUE	alive rolling count errors ≥ 8 out of 10 sample counts	Type B, 2 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Control Module Serial Peripheral Interface Bus 1	P30D□	This DTC detects intermitent and continuous invalid SPI messages. This is based on the detection of missing or invalid receive message □ithin the main processor before receiving a valid message.	This function detects a serial communications fault based upon the detection of missing or invalid □receive□message □ithin the main processor.		Run□Cran□voltage	□= 8.00 □olts, else the failure □ill be reported for all conditions	In the primary processor, 8 □1□ counts intermittent 12.5 ms □count in the ECM main processor	Type A, 1 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Control Module Serial Peripheral Interface Bus 2	P30D7	This DTC detects intermitent and continuous invalid SPI messages. This is based on the detection of missing or invalid receive message within the main processor before receiving a valid message.	This function detects a serial communications fault based upon the detection of missing or invalid (receive) message within the main processor.		Run/Crank voltage	>= 8.00 Volts, else the failure will be reported for all conditions	In the primary processor, 8 / 16 counts intermittent 12.5 ms /count in the ECM main processor	Type A, 1 Trips

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Control Module Communication Bus A Off	U0073	This DTC monitors for a BUS A off condition	Bus off failures exceeds	3 counts (equivalent to 0.04 seconds)	General Enable Criteria:		Diagnostic runs in 12.5 ms loop	Type A, 1 Trips
					U0073	Not Active on Current Key Cycle		
			before the sample time of is reached	800.00 milliseconds				
					Normal CAN transmission on Bus A	Enabled		
					CAN hardware is bus OFF for	> 160.0000 milliseconds		
					The following criteria have been enabled for	>= 5,000.00 milliseconds		
					Transition from accessory mode to off is pending	= False		
					Battery Voltage	> 11.00 Volts		
					Ignition Voltage Criteria:			
					Power Mode	= Run		
					Run/Crank Voltage	>= 11.00 Volts		
					Off Cycle Enable Criteria:			
					KeCMGD_b_OffKeyCycleDiagEnbl	1.00 (1 indicates enabled)		
					KeDFIR_e_OBD_ControllerType is an OBD Controller	OBD Controller		
					Controller shutdown impending	= False		
					Power Mode	= Not Run/Crank		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication With ECM	U0100	This DTC monitors for a loss of communication with the engine control module	Message is not received from controller for		General Enable Criteria:		Diagnostic runs in 12.5 ms loop	Type A, 1 Trips
					U0073	Not Active on Current Key Cycle		
			Message $0C9	≥ 500.00 milliseconds				
			Message $287	≥ 12,000.00 milliseconds	Normal CAN transmission on Bus A	Enabled		
			Message $3E9	≥ 12,000.00 milliseconds	The following criteria have been enabled for	>= 5,000.00 milliseconds		
			Message $4C1	≥ 12,000.00 milliseconds	Transition from accessory mode to off is pending	= False		
			Message $4D1	≥ 12,000.00 milliseconds	Battery Voltage	> 11.00 Volts		
					Ignition Voltage Criteria:			
			Message $4F1	≥ 12,000.00 milliseconds	Power Mode	= Run		
					Run/Crank Voltage	>= 11.00 Volts		
					Off Cycle Enable Criteria:			
					KeCMGD_b_OffKeyCycleDiagEnbl	1.00 (1 indicates enabled)		
					KeDFIR_e_OBD_ControllerType is an OBD Controller	OBD Controller		
					Controller shutdown impending	= False		
					Power Mode	= Not Run/Crank		
					U0100	Not Active on Current Key Cycle		
					ECM	is present on the bus		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication With Anti-Lock Brake System (ABS) Control Module	U0121	This DTC monitors for a loss of communication with the Anti-Lock Brake System (ABS) Control Module (Non-OBD Module ID 243).	Message is not received from controller for		General Enable Criteria:		Diagnostic runs in 12.5 ms loop	"Emissions Neutral Diagnostics – Type C"
					U0073	Not Active on Current Key Cycle		
			Message $0C1	≥ 12,000.00 milliseconds				
					Normal CAN transmission on Bus A	Enabled		
			Message $0C5	≥ 12,000.00 milliseconds				
					The following criteria have been enabled for	>= 5,000.00 milliseconds		
			Message $1E9	≥ 12,000.00 milliseconds				
					Transition from accessory mode to off is pending	= False		
			Message $2F9	≥ 12,000.00 milliseconds				
					Battery Voltage	> 11.00 Volts		
					Ignition Voltage Criteria:			
					Power Mode	= Run		
					Run/Crank Voltage	>= 11.00 Volts		
					Off Cycle Enable Criteria:			
					KeCMGD_b_OffKeyCycleDiagEnbl	1.00 (1 indicates enabled)		
					KeDFIR_e_OBD_ControllerType is an OBD Controller	OBD Controller		
					Controller shutdown impending	= False		
					Power Mode	= Not Run/Crank		
					U0121	Not Active on Current Key Cycle		
					Anti-Lock Brake System Control Module	is present on the bus		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication With Power Steering Control Module	U0131	This DTC monitors for a loss of communication with the Power Steering Control Module	Message is not received from controller for		General Enable Criteria:		Diagnostic runs in 12.5 ms loop	Safety Emissions Neutral Diagnostic
					U0073	Not Active on Current Key Cycle		
			Message $1E5	≥ 12,000.00 milliseconds				
					Normal CAN transmission on Bus A	Enabled		
					The following criteria have been enabled for	>= 5,000.00 milliseconds		
					Transition from accessory mode to off is pending	= False		
					Battery Voltage	> 11.00 Volts		
					Ignition Voltage Criteria:			
					Power Mode	= Run		
					Run/Crank Voltage	>= 11.00 Volts		
					Off Cycle Enable Criteria:			
					KeCMGD_b_OffKeyCycleDiagEnbl	1.00 (1 indicates enabled)		
					KeDFIR_e_OBD_ControllerType is an OBD Controller	OBD Controller		
					Controller shutdown impending	= False		
					Power Mode	= Not Run/Crank		
					U0131	Not Active on Current Key Cycle		
					Power Steering Control Module	is present on the bus		

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication With Body Control Module	U0140	This DTC monitors for a loss of communication with the Body Control Module.	Message is not received from controller for Message $0F1 Message $12A Message $1F1 Message $1F3 Message $4E1 Message $4E9	≥ 500.00 milliseconds ≥ 500.00 milliseconds ≥ 12,000.00 milliseconds ≥ 12,000.00 milliseconds ≥ 12,000.00 milliseconds ≥ 12,000.00 milliseconds	General Enable Criteria: U0073 Normal CAN transmission on Bus A The following criteria have been enabled for Transition from accessory mode to off is pending Battery Voltage Ignition Voltage Criteria: Power Mode Run/Crank Voltage Off Cycle Enable Criteria: KeCMGD_b_OffKeyCycleDiagEnbl KeDFIR_e_OBD_ControllerType is an OBD Controller Controller shutdown impending Power Mode U0140 Body Control Module	Not Active on Current Key Cycle Enabled >= 5,000.00 milliseconds = False > 11.00 Volts = Run >= 11.00 Volts 1.00 (1 indicates enabled) OBD Controller = False = Not Run/Crank Not Active on Current Key Cycle is present on the bus	Diagnostic runs in 12.5 ms loop	"Emissions Neutral Diagnostics – Type C"

DIAGNOSTIC SUMMARY TABLES -- TCM

OBDGROUP: KGMXOBDG07 **TEST GROUP: KGMXV04.2088** **EMISSIONS STDS: CAL--ULEV125; FED--BIN125**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication With Gateway A	U0146	This DTC monitors for a loss of communication with Gateway A	Message is not received from controller for		General Enable Criteria:		Diagnostic runs in 12.5 ms loop	Type A, 1 Trips
					U0073	Not Active on Current Key Cycle		
			Message $3CF	≥ 12,000.00 milliseconds				
					Normal CAN transmission on Bus A	Enabled		
					The following criteria have been enabled for	>= 5,000.00 milliseconds		
					Transition from accessory mode to off is pending	= False		
					Battery Voltage	> 11.00 Volts		
					Ignition Voltage Criteria:			
					Power Mode	= Run		
					Run/Crank Voltage	>= 11.00 Volts		
					Off Cycle Enable Criteria:			
					KeCMGD_b_OffKeyCycleDiagEnbl	1.00 (1 indicates enabled)		
					KeDFIR_e_OBD_ControllerType is an OBD Controller	OBD Controller		
					Controller shutdown impending	= False		
					Power Mode	= Not Run/Crank		
					U0146	Not Active on Current Key Cycle		
					Gateway Module	is present on the bus		

Initial Supporting table - 10 speed transmission clutch definition and gear state to clutch map

Description: indicates clutch definition and gear state verses applied and released clutches for 10 speed transmission

Value Units: applied or released
X Unit: clutch
Y Units: gear index Y axis, actual gear column 1

y/x	1	2	3	4	5	6	7	8
1		C1 = C123456R	C2 = C1289-10R	C3 = C234579-10	C4 = C234678-10R	C5 = C1356789	C6 = C456789-10R	C7 = OWC12
2	1st gear braking	applied	applied	released	released	applied	released	applied
3	1st gear free wheel	applied	applied	released	released	applied	released	released
4	2nd gear braking	applied	applied	applied	applied	released	released	applied
5	2nd gear free wheel	applied	applied	applied	applied	released	released	released
6	3rd gear	applied	released	applied	applied	applied	released	released
7	4th gear	applied	released	applied	applied	released	applied	released
8	5th gear	applied	released	applied	released	applied	applied	released
9	6th gear	applied	released	released	released	applied	applied	released
10	7th gear	released	released	applied	applied	applied	applied	released
11	8th gear	released	applied	released	applied	applied	applied	released
12	9th gear	released	applied	applied	released	applied	applied	released
13	10th gear	released	applied	applied	applied	released	applied	released
14	reverse gear	applied	applied	released	applied	released	released	released

Initial Supporting table - 9 speed transmission clutch definition and gear state to clutch map

Description: indicates clutch definition and gear state verses applied and released clutches for 9 speed transmission

Value Units: applied or released
X Unit: clutch
Y Units: gear index Y axis, actual gear column 1

y/x	1	2	3	4	5	6	7	8
1		C1 = CB123456	C2 = C6789	C3 = CB1R	C4 = CB29	C5 = CB38	C6 = C4	C7 = C57R
2	1st gear braking	applied	released	applied	released	released	released	released
3	1st gear free wheel	applied	released	released	released	released	released	released
4	2nd gear	applied	released	released	applied	released	released	released
5	3rd gear	applied	released	released	released	applied	released	released
6	4th gear	applied	released	released	released	released	applied	released
7	5th gear	applied	released	released	released	released	released	applied
8	6th gear	applied	applied	released	released	released	released	released
9	7th gear	released	applied	released	released	released	released	applied
10	8th gear	released	applied	released	released	applied	released	released
11	9th gear	released	applied	released	applied	released	released	released
12	reverse gear	released	released	applied	released	released	released	applied

Initial Supporting table - NumClchTieUp

Description: NumClchTieUp

Value Units: minimum # of clutches
X Unit: command gear or attained gear
Y Units: not applicable, no units, single row table f(gear)

NumClchTieUp - Part 1

y/x	CeCGSR_e_NullForSched	CeCGSR_e_NeutralNoClutch	CeCGSR_e_NeutralC1	CeCGSR_e_NeutralC2	CeCGSR_e_NeutralC3	CeCGSR_e_NeutralC4	CeCGSR_e_NeutralC5
1	5	5	4	4	4	4	4

NumClchTieUp - Part 2

y/x	CeCGSR_e_NeutralC6	CeCGSR_e_NeutralC7	CeCGSR_e_NeutralC1C2	CeCGSR_e_NeutralC1C3	CeCGSR_e_NeutralC1C4	CeCGSR_e_NeutralC1C5	CeCGSR_e_NeutralC2C3
1	4	4	3	3	3	3	3

NumClchTieUp - Part 3

y/x	CeCGSR_e_NeutralC2C4	CeCGSR_e_NeutralC2C5	CeCGSR_e_NeutralC2C6	CeCGSR_e_NeutralC3C4	CeCGSR_e_NeutralC3C5	CeCGSR_e_NeutralC3C6	CeCGSR_e_NeutralC4C5
1	3	3	3	3	3	3	3

NumClchTieUp - Part 4

y/x	CeCGSR_e_NeutralC4C6	CeCGSR_e_NeutralC1C2C3C6	CeCGSR_e_Park_wNC	CeCGSR_e_Park_wNC1	CeCGSR_e_Park_wNC2	CeCGSR_e_Park_wNC3	CeCGSR_e_Park_wNC4
1	3	1	5	4	4	4	4

NumClchTieUp - Part 5

y/x	CeCGSR_e_Park_wNC5	CeCGSR_e_Park_wNC6	CeCGSR_e_Park_wNC7	CeCGSR_e_Park_wNC1C2	CeCGSR_e_Park_wNC2C3	CeCGSR_e_Park_wNC2C4	CeCGSR_e_Park_wNC2C5
1	4	4	4	3	3	3	3

NumClchTieUp - Part 6

y/x	CeCGSR_e_Park_wNC2C6	CeCGSR_e_Park_wNC3C4	CeCGSR_e_Park_wNC3C5	CeCGSR_e_Park_wNC3C6	CeCGSR_e_Park_wNC4C5	CeCGSR_e_Park_wNC4C6	CeCGSR_e_Park_wNC1C2C3C6
1	3	3	3	3	3	3	1

NumClchTieUp - Part 7

y/x	CeCGSR_e_Reverse	CeCGSR_e_FirstLckd	CeCGSR_e_FirstFW	CeCGSR_e_SecondLckd	CeCGSR_e_SecondFW	CeCGSR_e_Third	CeCGSR_e_Fourth
1	1	1	2	1	2	1	1

NumClchTieUp - Part 8

y/x	CeCGSR_e_Fifth	CeCGSR_e_Sixth	CeCGSR_e_Seventh	CeCGSR_e_Eighth	CeCGSR_e_Ninth	CeCGSR_e_Tenth	

Initial Supporting table - NumClchTieUp

1	1	1	1	1	1	1	

Initial Supporting table - P0606_Last Seed Timeout f(Loop Time)

Description: The max time for the Last Seed Timeout as a function of operating loop time sequence.

Value Units: Max Time for Last Seed Timeout (ms)
X Unit: Operating Loop Sequence (enum)

P0606_Last Seed Timeout f(Loop Time) - Part 1

y/x	CePISR_e_2p5msSeq	CePISR_e_3p125msSeq	CePISR_e_5msSeq	CePISR_e_6p25msSeq	CePISR_e_10msSeq	CePISR_e_12p5msSeq	CePISR_e_20msSeq	CePISR_e_25msSeq
1	200.000	200.000	200.000	200.000	200.000	200.000	200.000	200.000

P0606_Last Seed Timeout f(Loop Time) - Part 2

y/x	CePISR_e_40msSeq	CePISR_e_50msSeq	CePISR_e_80msSeq	CePISR_e_100msSeq	CePISR_e_250msSeq	CePISR_e_EventA_Seq	CePISR_e_EventB_Seq	CePISR_e_EventC_Seq
1	200.000	200.000	200.000	500.000	1,000.000	8,191.875	8,191.875	8,191.875

Initial Supporting table - P0606_PSW Sequence Fail f(Loop Time)

Description: Fail threshold for PSW per operating loop.

Value Units: Fail threshold for PSW (count)
X Unit: Operating Loop (enum)

P0606_PSW Sequence Fail f(Loop Time) - Part 1

y/x	CePISR_e_2p5msSeq	CePISR_e_3p125msSeq	CePISR_e_5msSeq	CePISR_e_6p25msSeq	CePISR_e_10msSeq	CePISR_e_12p5msSeq	CePISR_e_20msSeq	CePISR_e_25msSeq
1	2	2	2	2	2	2	2	2

P0606_PSW Sequence Fail f(Loop Time) - Part 2

y/x	CePISR_e_40msSeq	CePISR_e_50msSeq	CePISR_e_80msSeq	CePISR_e_100msSeq	CePISR_e_250msSeq	CePISR_e_EventA_Seq	CePISR_e_EventB_Seq	CePISR_e_EventC_Seq
1	2	1	1	1	1	2	2	2

Initial Supporting table - P0606_PSW Sequence Sample f(Loop Time)

Description: Sample threshold for PSW per operating loop.

Value Units: Sample threshold for PSW (count)
X Unit: Operating Loop (enum)

P0606_PSW Sequence Sample f(Loop Time) - Part 1

y/x	CePISR_e_2p5msSeq	CePISR_e_3p125msSeq	CePISR_e_5msSeq	CePISR_e_6p25msSeq	CePISR_e_10msSeq	CePISR_e_12p5msSeq	CePISR_e_20msSeq	CePISR_e_25msSeq
1	4	4	4	4	4	4	4	4

P0606_PSW Sequence Sample f(Loop Time) - Part 2

y/x	CePISR_e_40msSeq	CePISR_e_50msSeq	CePISR_e_80msSeq	CePISR_e_100msSeq	CePISR_e_250msSeq	CePISR_e_EventA_Seq	CePISR_e_EventB_Seq	CePISR_e_EventC_Seq
1	4	2	2	2	2	3	3	3

Initial Supporting table - P2797 hydraulic pressure delay

Description: Time to delay the initial x of y counter due to hydraulic transients. Thresholds are a function of transmission fluid temperature. Horizontal axis is transmission fluid temperature (DegC) and table output is delay time (seconds).

Value Units: delay time seconds
X Unit: transmission fluid temperature DegC

y/x	-40	0	20	30	40	50	60
1	0.090	0.090	0.080	0.050	0.050	0.050	0.050

Initial Supporting table - P2797 predicted turbine speed error

Description: Predicted turbine speed vs actual turbine speed error. Thresholds are a function of engine speed and transmission fliud temperature. Diagnostic is considered failing above these values. Table vertical axis is engine speed (RPM), horizontal axis is transmission fluid temperature (DegC) and table output is predicted turbine speed error (RPM).

Value Units: turbine speed RPM error
X Unit: transmission fluid temperature DegC
Y Units: engine speed RPM

y/x	-40	0	10	20	40
0	300	300	300	300	300
500	300	300	300	300	300
1,100	300	300	300	300	300
1,500	300	300	300	300	300
2,500	300	300	300	300	300

Initial Supporting table - P2D2 Cltch Slip Sum

Description:

Value Units: rate of change of output rpm (dn) per 25 milliseconds
X Unit: % brake pedal position
Y Units: not applicable, no units, single row table f(brake pedal position)

y/x	0	15	20	30	35	50	75	88	100
1	-4	-4	-4	-4	-4	-4	-4	-4	-4

Initial Supporting table - P2D2 Decel Pressure - C1

Description: clutch 1 command pressure threshold below which clutch 1 is considered released, such that, clutch 1 cannot carry enough clutch torque that would induce a vehicle deceleration above the design safety metric

Value Units: kPa
X Unit: command gear
Y Units: not applicable, no units, single row table f(command gear)

P2D2 Decel Pressure - C1 - Part 1

y/x	CeCGSR_e_NullForSched	CeCGSR_e_NeutralNoClutch	CeCGSR_e_NeutralC1	CeCGSR_e_NeutralC2	CeCGSR_e_NeutralC3
1	446.5	446.5	99,999.0	294.6	446.5

P2D2 Decel Pressure - C1 - Part 2

y/x	CeCGSR_e_NeutralC4	CeCGSR_e_NeutralC5	CeCGSR_e_NeutralC6	CeCGSR_e_NeutralC7	CeCGSR_e_NeutralC1C2
1	446.5	446.5	446.5	99,999.0	99,999.0

P2D2 Decel Pressure - C1 - Part 3

y/x	CeCGSR_e_NeutralC1C3	CeCGSR_e_NeutralC1C4	CeCGSR_e_NeutralC1C5	CeCGSR_e_NeutralC2C3	CeCGSR_e_NeutralC2C4
1	99,999.0	99,999.0	99,999.0	294.6	294.6

P2D2 Decel Pressure - C1 - Part 4

y/x	CeCGSR_e_NeutralC2C5	CeCGSR_e_NeutralC2C6	CeCGSR_e_NeutralC3C4	CeCGSR_e_NeutralC3C5	CeCGSR_e_NeutralC3C6
1	287.1	294.6	446.5	446.5	446.5

P2D2 Decel Pressure - C1 - Part 5

y/x	CeCGSR_e_NeutralC4C5	CeCGSR_e_NeutralC4C6	CeCGSR_e_NeutralC1C2C3C6	CeCGSR_e_Park_wNC	CeCGSR_e_Park_wNC1
1	446.5	446.5	446.5	446.5	99,999.0

P2D2 Decel Pressure - C1 - Part 6

y/x	CeCGSR_e_Park_wNC2	CeCGSR_e_Park_wNC3	CeCGSR_e_Park_wNC4	CeCGSR_e_Park_wNC5	CeCGSR_e_Park_wNC6
1	294.6	446.5	446.5	446.5	446.5

P2D2 Decel Pressure - C1 - Part 7

y/x	CeCGSR_e_Park_wNC7	CeCGSR_e_Park_wNC1C2	CeCGSR_e_Park_wNC2C3	CeCGSR_e_Park_wNC2C4	CeCGSR_e_Park_wNC2C5
1	99,999.0	99,999.0	294.6	294.6	287.1

P2D2 Decel Pressure - C1 - Part 8

y/x	CeCGSR_e_Park_wNC2C6	CeCGSR_e_Park_wNC3C4	CeCGSR_e_Park_wNC3C5	CeCGSR_e_Park_wNC3C6	CeCGSR_e_Park_wNC4C5
1	294.6	446.5	446.5	446.5	446.5

P2D2 Decel Pressure - C1 - Part 9

y/x	CeCGSR_e_Park_wNC4C6	CeCGSR_e_Park_wNC1C2C3C6	CeCGSR_e_Reverse	CeCGSR_e_FirstLckd	CeCGSR_e_FirstFW

Initial Supporting table - P2D2 Decel Pressure - C1

1	446.5	446.5	99,999.0	99,999.0	99,999.0

P2D2 Decel Pressure - C1 - Part 10

y/x	CeCGSR_e_SecondLckd	CeCGSR_e_SecondFW	CeCGSR_e_Third	CeCGSR_e_Fourth	CeCGSR_e_Fifth
1	99,999.0	99,999.0	99,999.0	99,999.0	99,999.0

P2D2 Decel Pressure - C1 - Part 11

y/x	CeCGSR_e_Sixth	CeCGSR_e_Seventh	CeCGSR_e_Eighth	CeCGSR_e_Ninth	CeCGSR_e_Tenth
1	99,999.0	446.5	287.1	273.6	294.6

P2D2 Decel Pressure - C1 - Part 12

y/x					
1					

Initial Supporting table - P2D2 Decel Pressure - C2

Description: clutch 2 command pressure threshold below which clutch 2 is considered released, such that, clutch 2 cannot carry enough clutch torque that would induce a vehicle deceleration above the design safety metric

Value Units: kPa
X Unit: command gear
Y Units: not applicable, no units, single row table f(command gear)

P2D2 Decel Pressure - C2 - Part 1

y/x	CeCGSR_e_NullForSched	CeCGSR_e_NeutralNoClutch	CeCGSR_e_NeutralC1	CeCGSR_e_NeutralC2	CeCGSR_e_NeutralC3
1	662	662	352	99,999	662

P2D2 Decel Pressure - C2 - Part 2

y/x	CeCGSR_e_NeutralC4	CeCGSR_e_NeutralC5	CeCGSR_e_NeutralC6	CeCGSR_e_NeutralC7	CeCGSR_e_NeutralC1C2
1	662	662	662	99,999	99,999

P2D2 Decel Pressure - C2 - Part 3

y/x	CeCGSR_e_NeutralC1C3	CeCGSR_e_NeutralC1C4	CeCGSR_e_NeutralC1C5	CeCGSR_e_NeutralC2C3	CeCGSR_e_NeutralC2C4
1	352	352	352	99,999	99,999

P2D2 Decel Pressure - C2 - Part 4

y/x	CeCGSR_e_NeutralC2C5	CeCGSR_e_NeutralC2C6	CeCGSR_e_NeutralC3C4	CeCGSR_e_NeutralC3C5	CeCGSR_e_NeutralC3C6
1	99,999	99,999	662	662	662

P2D2 Decel Pressure - C2 - Part 5

y/x	CeCGSR_e_NeutralC4C5	CeCGSR_e_NeutralC4C6	CeCGSR_e_NeutralC1C2C3C6	CeCGSR_e_Park_wNC	CeCGSR_e_Park_wNC1
1	662	662	99,999	662	352

P2D2 Decel Pressure - C2 - Part 6

y/x	CeCGSR_e_Park_wNC2	CeCGSR_e_Park_wNC3	CeCGSR_e_Park_wNC4	CeCGSR_e_Park_wNC5	CeCGSR_e_Park_wNC6
1	99,999	662	662	662	662

P2D2 Decel Pressure - C2 - Part 7

y/x	CeCGSR_e_Park_wNC7	CeCGSR_e_Park_wNC1C2	CeCGSR_e_Park_wNC2C3	CeCGSR_e_Park_wNC2C4	CeCGSR_e_Park_wNC2C5
1	99,999	99,999	99,999	99,999	99,999

P2D2 Decel Pressure - C2 - Part 8

y/x	CeCGSR_e_Park_wNC2C6	CeCGSR_e_Park_wNC3C4	CeCGSR_e_Park_wNC3C5	CeCGSR_e_Park_wNC3C6	CeCGSR_e_Park_wNC4C5
1	99,999	662	662	662	662

P2D2 Decel Pressure - C2 - Part 9

y/x	CeCGSR_e_Park_wNC4C6	CeCGSR_e_Park_wNC1C2C3C6	CeCGSR_e_Reverse	CeCGSR_e_FirstLckd	CeCGSR_e_FirstFW

Initial Supporting table - P2D2 Decel Pressure - C2

1	662	99,999	99,999	99,999	99,999

P2D2 Decel Pressure - C2 - Part 10

y/x	CeCGSR_e_SecondLckd	CeCGSR_e_SecondFW	CeCGSR_e_Third	CeCGSR_e_Fourth	CeCGSR_e_Fifth
1	99,999	99,999	352	228	252

P2D2 Decel Pressure - C2 - Part 11

y/x	CeCGSR_e_Sixth	CeCGSR_e_Seventh	CeCGSR_e_Eighth	CeCGSR_e_Ninth	CeCGSR_e_Tenth
1	231	662	99,999	99,999	99,999

P2D2 Decel Pressure - C2 - Part 12

y/x					
1					

Initial Supporting table - P2D2 Decel Pressure - C3

Description: clutch 3 command pressure threshold below which clutch 3 is considered released, such that, clutch 3 cannot carry enough clutch torque that would induce a vehicle deceleration above the design safety metric

Value Units: kPa
X Unit: command gear
Y Units: not applicable, no units, single row table f(command gear)

P2D2 Decel Pressure - C3 - Part 1

y/x	CeCGSR_e_NullForSched	CeCGSR_e_NeutralNoClutch	CeCGSR_e_NeutralC1	CeCGSR_e_NeutralC2	CeCGSR_e_NeutralC3
1	99,999	99,999	99,999	99,999	99,999

P2D2 Decel Pressure - C3 - Part 2

y/x	CeCGSR_e_NeutralC4	CeCGSR_e_NeutralC5	CeCGSR_e_NeutralC6	CeCGSR_e_NeutralC7	CeCGSR_e_NeutralC1C2
1	99,999	99,999	1,652	99,999	99,999

P2D2 Decel Pressure - C3 - Part 3

y/x	CeCGSR_e_NeutralC1C3	CeCGSR_e_NeutralC1C4	CeCGSR_e_NeutralC1C5	CeCGSR_e_NeutralC2C3	CeCGSR_e_NeutralC2C4
1	99,999	99,999	99,999	99,999	99,999

P2D2 Decel Pressure - C3 - Part 4

y/x	CeCGSR_e_NeutralC2C5	CeCGSR_e_NeutralC2C6	CeCGSR_e_NeutralC3C4	CeCGSR_e_NeutralC3C5	CeCGSR_e_NeutralC3C6
1	99,999	1,652	99,999	99,999	99,999

P2D2 Decel Pressure - C3 - Part 5

y/x	CeCGSR_e_NeutralC4C5	CeCGSR_e_NeutralC4C6	CeCGSR_e_NeutralC1C2C3C6	CeCGSR_e_Park_wNC	CeCGSR_e_Park_wNC1
1	99,999	1,652	99,999	99,999	99,999

P2D2 Decel Pressure - C3 - Part 6

y/x	CeCGSR_e_Park_wNC2	CeCGSR_e_Park_wNC3	CeCGSR_e_Park_wNC4	CeCGSR_e_Park_wNC5	CeCGSR_e_Park_wNC6
1	99,999	99,999	99,999	99,999	1,652

P2D2 Decel Pressure - C3 - Part 7

y/x	CeCGSR_e_Park_wNC7	CeCGSR_e_Park_wNC1C2	CeCGSR_e_Park_wNC2C3	CeCGSR_e_Park_wNC2C4	CeCGSR_e_Park_wNC2C5
1	99,999	1,652	99,999	99,999	99,999

P2D2 Decel Pressure - C3 - Part 8

y/x	CeCGSR_e_Park_wNC2C6	CeCGSR_e_Park_wNC3C4	CeCGSR_e_Park_wNC3C5	CeCGSR_e_Park_wNC3C6	CeCGSR_e_Park_wNC4C5
1	1,652	99,999	99,999	99,999	1,652

P2D2 Decel Pressure - C3 - Part 9

y/x	CeCGSR_e_Park_wNC4C6	CeCGSR_e_Park_wNC1C2C3C6	CeCGSR_e_Reverse	CeCGSR_e_FirstLckd	CeCGSR_e_FirstFW

Initial Supporting table - P2D2 Decel Pressure - C3

1	1,652	99,999	193	99,999	99,999

P2D2 Decel Pressure - C3 - Part 10

y/x	CeCGSR_e_SecondLckd	CeCGSR_e_SecondFW	CeCGSR_e_Third	CeCGSR_e_Fourth	CeCGSR_e_Fifth
1	99,999	99,999	99,999	99,999	99,999

P2D2 Decel Pressure - C3 - Part 11

y/x	CeCGSR_e_Sixth	CeCGSR_e_Seventh	CeCGSR_e_Eighth	CeCGSR_e_Ninth	CeCGSR_e_Tenth
1	896	99,999	1,652	99,999	99,999

P2D2 Decel Pressure - C3 - Part 12

y/x					
1					

Initial Supporting table - P2D2 Decel Pressure - C4

Description: clutch 4 command pressure threshold below which clutch 4 is considered released, such that, clutch 4 cannot carry enough clutch torque that would induce a vehicle deceleration above the design safety metric

Value Units: kPa
X Unit: command gear
Y Units: not applicable, no units, single row table f(command gear)

P2D2 Decel Pressure - C4 - Part 1

y/x	CeCGSR_e_NullForSched	CeCGSR_e_NeutralNoClutch	CeCGSR_e_NeutralC1	CeCGSR_e_NeutralC2	CeCGSR_e_NeutralC3
1	2,706	2,706	2,706	1,994	2,706

P2D2 Decel Pressure - C4 - Part 2

y/x	CeCGSR_e_NeutralC4	CeCGSR_e_NeutralC5	CeCGSR_e_NeutralC6	CeCGSR_e_NeutralC7	CeCGSR_e_NeutralC1C2
1	99,999	2,706	2,706	99,999	368

P2D2 Decel Pressure - C4 - Part 3

y/x	CeCGSR_e_NeutralC1C3	CeCGSR_e_NeutralC1C4	CeCGSR_e_NeutralC1C5	CeCGSR_e_NeutralC2C3	CeCGSR_e_NeutralC2C4
1	2,706	99,999	99,999	1,994	99,999

P2D2 Decel Pressure - C4 - Part 4

y/x	CeCGSR_e_NeutralC2C5	CeCGSR_e_NeutralC2C6	CeCGSR_e_NeutralC3C4	CeCGSR_e_NeutralC3C5	CeCGSR_e_NeutralC3C6
1	1,994	1,994	99,999	2,706	2,706

P2D2 Decel Pressure - C4 - Part 5

y/x	CeCGSR_e_NeutralC4C5	CeCGSR_e_NeutralC4C6	CeCGSR_e_NeutralC1C2C3C6	CeCGSR_e_Park_wNC	CeCGSR_e_Park_wNC1
1	99,999	99,999	99,999	2,706	2,706

P2D2 Decel Pressure - C4 - Part 6

y/x	CeCGSR_e_Park_wNC2	CeCGSR_e_Park_wNC3	CeCGSR_e_Park_wNC4	CeCGSR_e_Park_wNC5	CeCGSR_e_Park_wNC6
1	1,994	2,706	99,999	2,706	2,706

P2D2 Decel Pressure - C4 - Part 7

y/x	CeCGSR_e_Park_wNC7	CeCGSR_e_Park_wNC1C2	CeCGSR_e_Park_wNC2C3	CeCGSR_e_Park_wNC2C4	CeCGSR_e_Park_wNC2C5
1	99,999	368	1,994	99,999	1,994

P2D2 Decel Pressure - C4 - Part 8

y/x	CeCGSR_e_Park_wNC2C6	CeCGSR_e_Park_wNC3C4	CeCGSR_e_Park_wNC3C5	CeCGSR_e_Park_wNC3C6	CeCGSR_e_Park_wNC4C5
1	1,994	99,999	2,706	2,706	99,999

P2D2 Decel Pressure - C4 - Part 9

y/x	CeCGSR_e_Park_wNC4C6	CeCGSR_e_Park_wNC1C2C3C6	CeCGSR_e_Reverse	CeCGSR_e_FirstLckd	CeCGSR_e_FirstFW

Initial Supporting table - P2D2 Decel Pressure - C4

1	99,999	99,999	99,999	368	368

P2D2 Decel Pressure - C4 - Part 10

y/x	CeCGSR_e_SecondLckd	CeCGSR_e_SecondFW	CeCGSR_e_Third	CeCGSR_e_Fourth	CeCGSR_e_Fifth
1	99,999	99,999	99,999	99,999	2,706

P2D2 Decel Pressure - C4 - Part 11

y/x	CeCGSR_e_Sixth	CeCGSR_e_Seventh	CeCGSR_e_Eighth	CeCGSR_e_Ninth	CeCGSR_e_Tenth
1	99,999	99,999	99,999	1,994	99,999

P2D2 Decel Pressure - C4 - Part 12

y/x					
1					

Initial Supporting table - P2D2 Decel Pressure - C5

Description: clutch 5 command pressure threshold below which clutch 5 is considered released, such that, clutch 5 cannot carry enough clutch torque that would induce a vehicle deceleration above the design safety metric

Value Units: kPa
X Unit: command gear
Y Units: not applicable, no units, single row table f(command gear)

P2D2 Decel Pressure - C5 - Part 1

y/x	CeCGSR_e_NullForSched	CeCGSR_e_NeutralNoClutch	CeCGSR_e_NeutralC1	CeCGSR_e_NeutralC2	CeCGSR_e_NeutralC3
1	2,302	2,302	1,183	2,302	2,302

P2D2 Decel Pressure - C5 - Part 2

y/x	CeCGSR_e_NeutralC4	CeCGSR_e_NeutralC5	CeCGSR_e_NeutralC6	CeCGSR_e_NeutralC7	CeCGSR_e_NeutralC1C2
1	1,183	99,999	1,183	99,999	750

P2D2 Decel Pressure - C5 - Part 3

y/x	CeCGSR_e_NeutralC1C3	CeCGSR_e_NeutralC1C4	CeCGSR_e_NeutralC1C5	CeCGSR_e_NeutralC2C3	CeCGSR_e_NeutralC2C4
1	1,183	1,183	99,999	2,302	2,302

P2D2 Decel Pressure - C5 - Part 4

y/x	CeCGSR_e_NeutralC2C5	CeCGSR_e_NeutralC2C6	CeCGSR_e_NeutralC3C4	CeCGSR_e_NeutralC3C5	CeCGSR_e_NeutralC3C6
1	99,999	2,302	2,302	99,999	2,302

P2D2 Decel Pressure - C5 - Part 5

y/x	CeCGSR_e_NeutralC4C5	CeCGSR_e_NeutralC4C6	CeCGSR_e_NeutralC1C2C3C6	CeCGSR_e_Park_wNC	CeCGSR_e_Park_wNC1
1	99,999	2,302	99,999	2,302	1,183

P2D2 Decel Pressure - C5 - Part 6

y/x	CeCGSR_e_Park_wNC2	CeCGSR_e_Park_wNC3	CeCGSR_e_Park_wNC4	CeCGSR_e_Park_wNC5	CeCGSR_e_Park_wNC6
1	2,302	2,302	1,183	99,999	1,183

P2D2 Decel Pressure - C5 - Part 7

y/x	CeCGSR_e_Park_wNC7	CeCGSR_e_Park_wNC1C2	CeCGSR_e_Park_wNC2C3	CeCGSR_e_Park_wNC2C4	CeCGSR_e_Park_wNC2C5
1	99,999	750	2,302	2,302	99,999

P2D2 Decel Pressure - C5 - Part 8

y/x	CeCGSR_e_Park_wNC2C6	CeCGSR_e_Park_wNC3C4	CeCGSR_e_Park_wNC3C5	CeCGSR_e_Park_wNC3C6	CeCGSR_e_Park_wNC4C5
1	2,302	2,302	99,999	2,302	99,999

P2D2 Decel Pressure - C5 - Part 9

y/x	CeCGSR_e_Park_wNC4C6	CeCGSR_e_Park_wNC1C2C3C6	CeCGSR_e_Reverse	CeCGSR_e_FirstLckd	CeCGSR_e_FirstFW

Initial Supporting table - P2D2 Decel Pressure - C5

1	2,302	99,999	196	99,999	99,999

P2D2 Decel Pressure - C5 - Part 10

y/x	CeCGSR_e_SecondLckd	CeCGSR_e_SecondFW	CeCGSR_e_Third	CeCGSR_e_Fourth	CeCGSR_e_Fifth
1	750	750	99,999	1,183	99,999

P2D2 Decel Pressure - C5 - Part 11

y/x	CeCGSR_e_Sixth	CeCGSR_e_Seventh	CeCGSR_e_Eighth	CeCGSR_e_Ninth	CeCGSR_e_Tenth
1	99,999	99,999	99,999	99,999	2,302

P2D2 Decel Pressure - C5 - Part 12

y/x					
1					

Initial Supporting table - P2D2 Decel Pressure - C6

Description: clutch 6 command pressure threshold below which clutch 6 is considered released, such that, clutch 6 cannot carry enough clutch torque that would induce a vehicle deceleration above the design safety metric

Value Units: kPa
X Unit: command gear
Y Units: not applicable, no units, single row table f(command gear)

P2D2 Decel Pressure - C6 - Part 1

y/x	CeCGSR_e_NullForSched	CeCGSR_e_NeutralNoClutch	CeCGSR_e_NeutralC1	CeCGSR_e_NeutralC2	CeCGSR_e_NeutralC3
1	666	666	666	248	666

P2D2 Decel Pressure - C6 - Part 2

y/x	CeCGSR_e_NeutralC4	CeCGSR_e_NeutralC5	CeCGSR_e_NeutralC6	CeCGSR_e_NeutralC7	CeCGSR_e_NeutralC1C2
1	666	666	99,999	99,999	248

P2D2 Decel Pressure - C6 - Part 3

y/x	CeCGSR_e_NeutralC1C3	CeCGSR_e_NeutralC1C4	CeCGSR_e_NeutralC1C5	CeCGSR_e_NeutralC2C3	CeCGSR_e_NeutralC2C4
1	666	666	666	248	248

P2D2 Decel Pressure - C6 - Part 4

y/x	CeCGSR_e_NeutralC2C5	CeCGSR_e_NeutralC2C6	CeCGSR_e_NeutralC3C4	CeCGSR_e_NeutralC3C5	CeCGSR_e_NeutralC3C6
1	142	99,999	666	666	99,999

P2D2 Decel Pressure - C6 - Part 5

y/x	CeCGSR_e_NeutralC4C5	CeCGSR_e_NeutralC4C6	CeCGSR_e_NeutralC1C2C3C6	CeCGSR_e_Park_wNC	CeCGSR_e_Park_wNC1
1	666	99,999	666	666	666

P2D2 Decel Pressure - C6 - Part 6

y/x	CeCGSR_e_Park_wNC2	CeCGSR_e_Park_wNC3	CeCGSR_e_Park_wNC4	CeCGSR_e_Park_wNC5	CeCGSR_e_Park_wNC6
1	248	666	666	666	99,999

P2D2 Decel Pressure - C6 - Part 7

y/x	CeCGSR_e_Park_wNC7	CeCGSR_e_Park_wNC1C2	CeCGSR_e_Park_wNC2C3	CeCGSR_e_Park_wNC2C4	CeCGSR_e_Park_wNC2C5
1	99,999	248	248	248	142

P2D2 Decel Pressure - C6 - Part 8

y/x	CeCGSR_e_Park_wNC2C6	CeCGSR_e_Park_wNC3C4	CeCGSR_e_Park_wNC3C5	CeCGSR_e_Park_wNC3C6	CeCGSR_e_Park_wNC4C5
1	99,999	666	666	99,999	666

P2D2 Decel Pressure - C6 - Part 9

y/x	CeCGSR_e_Park_wNC4C6	CeCGSR_e_Park_wNC1C2C3C6	CeCGSR_e_Reverse	CeCGSR_e_FirstLckd	CeCGSR_e_FirstFW

Initial Supporting table - P2D2 Decel Pressure - C6

1	99,999	666	99,999	142	142

P2D2 Decel Pressure - C6 - Part 10

y/x	CeCGSR_e_SecondLckd	CeCGSR_e_SecondFW	CeCGSR_e_Third	CeCGSR_e_Fourth	CeCGSR_e_Fifth
1	248	248	666	99,999	99,999

P2D2 Decel Pressure - C6 - Part 11

y/x	CeCGSR_e_Sixth	CeCGSR_e_Seventh	CeCGSR_e_Eighth	CeCGSR_e_Ninth	CeCGSR_e_Tenth
1	99,999	99,999	99,999	99,999	99,999

P2D2 Decel Pressure - C6 - Part 12

y/x					
1					

Initial Supporting table - P2D2 Decel Pressure - C7

Description: clutch 7 command pressure threshold below which clutch 7 is considered released, such that, clutch 7 cannot carry enough clutch torque that would induce a vehicle deceleration above the design safety metric

Value Units: kPa
X Unit: command gear
Y Units: not applicable, no units, single row table f(command gear)

P2D2 Decel Pressure - C7 - Part 1

y/x	CeCGSR_e_NullForSched	CeCGSR_e_NeutralNoClutch	CeCGSR_e_NeutralC1	CeCGSR_e_NeutralC2	CeCGSR_e_NeutralC3
1	99,999	99,999	99,999	99,999	99,999

P2D2 Decel Pressure - C7 - Part 2

y/x	CeCGSR_e_NeutralC4	CeCGSR_e_NeutralC5	CeCGSR_e_NeutralC6	CeCGSR_e_NeutralC7	CeCGSR_e_NeutralC1C2
1	99,999	99,999	99,999	99,999	99,999

P2D2 Decel Pressure - C7 - Part 3

y/x	CeCGSR_e_NeutralC1C3	CeCGSR_e_NeutralC1C4	CeCGSR_e_NeutralC1C5	CeCGSR_e_NeutralC2C3	CeCGSR_e_NeutralC2C4
1	99,999	99,999	99,999	99,999	99,999

P2D2 Decel Pressure - C7 - Part 4

y/x	CeCGSR_e_NeutralC2C5	CeCGSR_e_NeutralC2C6	CeCGSR_e_NeutralC3C4	CeCGSR_e_NeutralC3C5	CeCGSR_e_NeutralC3C6
1	99,999	99,999	99,999	99,999	99,999

P2D2 Decel Pressure - C7 - Part 5

y/x	CeCGSR_e_NeutralC4C5	CeCGSR_e_NeutralC4C6	CeCGSR_e_NeutralC1C2C3C6	CeCGSR_e_Park_wNC	CeCGSR_e_Park_wNC1
1	99,999	99,999	99,999	99,999	99,999

P2D2 Decel Pressure - C7 - Part 6

y/x	CeCGSR_e_Park_wNC2	CeCGSR_e_Park_wNC3	CeCGSR_e_Park_wNC4	CeCGSR_e_Park_wNC5	CeCGSR_e_Park_wNC6
1	99,999	99,999	99,999	99,999	99,999

P2D2 Decel Pressure - C7 - Part 7

y/x	CeCGSR_e_Park_wNC7	CeCGSR_e_Park_wNC1C2	CeCGSR_e_Park_wNC2C3	CeCGSR_e_Park_wNC2C4	CeCGSR_e_Park_wNC2C5
1	99,999	99,999	99,999	99,999	99,999

P2D2 Decel Pressure - C7 - Part 8

y/x	CeCGSR_e_Park_wNC2C6	CeCGSR_e_Park_wNC3C4	CeCGSR_e_Park_wNC3C5	CeCGSR_e_Park_wNC3C6	CeCGSR_e_Park_wNC4C5
1	99,999	99,999	99,999	99,999	99,999

P2D2 Decel Pressure - C7 - Part 9

y/x	CeCGSR_e_Park_wNC4C6	CeCGSR_e_Park_wNC1C2C3C6	CeCGSR_e_Reverse	CeCGSR_e_FirstLckd	CeCGSR_e_FirstFW

Initial Supporting table - P2D2 Decel Pressure - C7

1	99,999	99,999	99,999	99,999	99,999

P2D2 Decel Pressure - C7 - Part 10

y/x	CeCGSR_e_SecondLckd	CeCGSR_e_SecondFW	CeCGSR_e_Third	CeCGSR_e_Fourth	CeCGSR_e_Fifth
1	99,999	99,999	99,999	99,999	99,999

P2D2 Decel Pressure - C7 - Part 11

y/x	CeCGSR_e_Sixth	CeCGSR_e_Seventh	CeCGSR_e_Eighth	CeCGSR_e_Ninth	CeCGSR_e_Tenth
1	99,999	99,999	99,999	99,999	99,999

P2D2 Decel Pressure - C7 - Part 12

y/x					
1					

Initial Supporting table - transmission fluid temperature warm up time

Description:

Value Units: transmission fluid temperature normal warn up time, seconds
X Unit: transmission fluid temperature at controller power up, °C

y/x	-40.00	-30.00	-20.00	0.00	20.00
1	1,800.0	1,400.0	1,000.0	500.0	10.0

Initial Supporting table - 10 speed transmission clutch definition and gear state to clutch map

Description: indicates clutch definition and gear state verses applied and released clutches for 10 speed transmission

Value Units: applied or released
X Unit: clutch
Y Units: gear index Y axis, actual gear column 1

y/x	1	2	3	4	5	6	7	8
1		C1 = C123456R	C2 = C1289-10R	C3 = C234579-10	C4 = C234678-10R	C5 = C1356789	C6 = C456789-10R	C7 = OWC12
2	1st gear braking	applied	applied	released	released	applied	released	applied
3	1st gear free wheel	applied	applied	released	released	applied	released	released
4	2nd gear braking	applied	applied	applied	applied	released	released	applied
5	2nd gear free wheel	applied	applied	applied	applied	released	released	released
6	3rd gear	applied	released	applied	applied	applied	released	released
7	4th gear	applied	released	applied	applied	released	applied	released
8	5th gear	applied	released	applied	released	applied	applied	released
9	6th gear	applied	released	released	released	applied	applied	released
10	7th gear	released	released	applied	applied	applied	applied	released
11	8th gear	released	applied	released	applied	applied	applied	released
12	9th gear	released	applied	applied	released	applied	applied	released
13	10th gear	released	applied	applied	applied	released	applied	released
14	reverse gear	applied	applied	released	applied	released	released	released

Initial Supporting table - 9 speed transmission clutch definition and gear state to clutch map

Description: indicates clutch definition and gear state verses applied and released clutches for 9 speed transmission

Value Units: applied or released
X Unit: clutch
Y Units: gear index Y axis, actual gear column 1

y/x	1	2	3	4	5	6	7	8
1		C1 = CB123456	C2 = C6789	C3 = CB1R	C4 = CB29	C5 = CB38	C6 = C4	C7 = C57R
2	1st gear braking	applied	released	applied	released	released	released	released
3	1st gear free wheel	applied	released	released	released	released	released	released
4	2nd gear	applied	released	released	applied	released	released	released
5	3rd gear	applied	released	released	released	applied	released	released
6	4th gear	applied	released	released	released	released	applied	released
7	5th gear	applied	released	released	released	released	released	applied
8	6th gear	applied	applied	released	released	released	released	released
9	7th gear	released	applied	released	released	released	released	applied
10	8th gear	released	applied	released	released	applied	released	released
11	9th gear	released	applied	released	applied	released	released	released
12	reverse gear	released	released	applied	released	released	released	applied

Initial Supporting table - C1 exhaust delay closed throttle down shift

Description: P0747 C1 clutch hydraulic circuit exhaust time in closed throttle down shift

Value Units: seconds
X Unit: transmission fluid temperature °C

y/x	-40.00	-20.00	0.00	30.00	110.00
1	1.600	1.100	0.950	0.850	0.850

Initial Supporting table - C1 exhaust delay closed throttle lift foot up shift

Description: P0747 C1 clutch hydraulic circuit exhaust time in closed throttle lift foot up shift

Value Units: seconds
X Unit: transmission fluid temperature °C

y/x	-40.00	-20.00	0.00	30.00	110.00
1	1.600	1.100	0.950	0.850	0.850

Initial Supporting table - C1 exhaust delay garage shift

Description: P0747 C1 clutch hydraulic circuit exhaust time in garage shift

Value Units: seconds
X Unit: transmission fluid temperature °C

y/x	-40.00	-20.00	0.00	30.00	110.00
1	0.250	0.250	0.250	0.250	0.250

Initial Supporting table - C1 exhaust delay negative torque up shift

Description: P0747 C1 clutch hydraulic circuit exhaust time in negative torque up shift

Value Units: seconds
X Unit: transmission fluid temperature °C

y/x	-40.00	-20.00	0.00	30.00	110.00
1	0.500	0.500	0.500	0.500	0.500

Initial Supporting table - C1 exhaust delay open throttle power down shift

Description: P0747 C1 clutch hydraulic circuit exhaust time in open throttle power down shift

Value Units: seconds
X Unit: transmission fluid temperature °C

y/x	-40.00	-20.00	0.00	30.00	110.00
1	1.600	1.100	0.950	0.850	0.850

Initial Supporting table - C1 exhaust delay open throttle power on up shift

Description: P0747 C1 clutch hydraulic circuit exhaust time in open throttle power on up shift

Value Units: seconds
X Unit: transmission fluid temperature °C

y/x	-40.00	-20.00	0.00	30.00	110.00
1	0.750	0.750	0.750	0.750	0.750

Initial Supporting table - C1 Torque-Based Pressure Clip

Description: Pressure clip values for C1 based on clutch torque. Clutch torque calculated from engine torque using torque lever ratios, which are hardware and shift specific.

Value Units: Clutch Pressure (kPa)
X Unit: C1 Oncoming Clutch Torque (Nm)

y/x	0	100	200	300	600
1	690	690	690	690	690

Initial Supporting table - C1_Oncoming Post-Torque Phase Delay

Description: Post torque phase delay before calculating oncoming clutch clip pressure for powered upshifts when C1 is the oncoming clutch

Value Units: time (seconds)
X Unit: transmission fluid temperature °C

y/x	-40	-20	0	30	110
1	0	0	0	0	0

Initial Supporting table - C2 exhaust delay closed throttle down shift

Description: P0777 C2 clutch hydraulic circuit exhaust time in closed throttle down shift

Value Units: seconds
X Unit: transmission fluid temperature °C

y/x	-40.00	-20.00	0.00	30.00	110.00
1	1.600	1.100	0.950	0.850	0.850

Initial Supporting table - C2 exhaust delay garage shift

Description: P0777 C2 clutch hydraulic circuit exhaust time in garage shift

Value Units: seconds
X Unit: transmission fluid temperature °C

y/x	-40.00	-20.00	0.00	30.00	110.00
1	0.250	0.250	0.250	0.250	0.250

Initial Supporting table - C2 exhaust delay negative torque up shift

Description: P0777 C2 clutch hydraulic circuit exhaust time in negative torque up shift

Value Units: seconds
X Unit: transmission fluid temperature °C

y/x	-40.00	-20.00	0.00	30.00	110.00
1	0.500	0.500	0.500	0.500	0.500

Initial Supporting table - C2 exhaust delay open throttle power down shift

Description: P0777 C2 clutch hydraulic circuit exhaust time in open throttle power down shift

Value Units: seconds
X Unit: transmission fluid temperature °C

y/x	-40.00	-20.00	0.00	30.00	110.00
1	1.600	1.100	0.950	0.850	0.850

Initial Supporting table - C2 exhaust delay open throttle power on up shift

Description: P0777 C2 clutch hydraulic circuit exhaust time in open throttle power on up shift

Value Units: seconds
X Unit: transmission fluid temperature °C

y/x	-40.00	-20.00	0.00	30.00	110.00
1	0.750	0.750	0.750	0.750	0.750

Initial Supporting table - C2 Torque-Based Pressure Clip

Description:

Value Units: Clutch Pressure (kPa)
X Unit: C2 Oncoming Clutch Torque (Nm)

y/x	0	100	200	300	600
1	300	400	500	500	500

Initial Supporting table - C2_Oncoming Post-Torque Phase Delay

Description: Post torque phase delay before calculating oncoming clutch clip pressure for powered upshifts when C2 is the oncoming clutch

Value Units: time (seconds)
X Unit: transmission fluid temperature °C

y/x	-40	-20	0	30	110
1	0	0	0	0	0

Initial Supporting table - C3 exhaust delay closed throttle down shift

Description: P0797 C3 clutch hydraulic circuit exhaust time in closed throttle down shift

Value Units: seconds
X Unit: transmission fluid temperature °C

y/x	-40.00	-20.00	0.00	30.00	110.00
1	1.600	1.100	0.950	0.850	0.850

Initial Supporting table - C3 exhaust delay closed throttle lift foot up shift

Description: P0797 C3 clutch hydraulic circuit exhaust time in closed throttle lift foot up shift

Value Units: seconds
X Unit: transmission fluid temperature °C

y/x	-40.00	-20.00	0.00	30.00	110.00
1	1.600	1.100	0.950	0.850	0.850

Initial Supporting table - C3 exhaust delay garage shift

Description: P0797 C3 clutch hydraulic circuit exhaust time in garage shift

Value Units: seconds
X Unit: transmission fluid temperature °C

y/x	-40.00	-20.00	0.00	30.00	110.00
1	0.250	0.250	0.250	0.250	0.250

Initial Supporting table - C3 exhaust delay negative torque up shift

Description: P0797 C3 clutch hydraulic circuit exhaust time in negative torque up shift

Value Units: seconds
X Unit: transmission fluid temperature °C

y/x	-40.00	-20.00	0.00	30.00	110.00
1	0.500	0.500	0.500	0.500	0.500

Initial Supporting table - C3 exhaust delay open throttle power down shift

Description: P0797 C3 clutch hydraulic circuit exhaust time in open throttle power down shift

Value Units: seconds
X Unit: transmission fluid temperature °C

y/x	-40.00	-20.00	0.00	30.00	110.00
1	1.600	1.100	0.950	0.850	0.850

Initial Supporting table - C3 exhaust delay open throttle power on up shift

Description: P0797 C3 clutch hydraulic circuit exhaust time in open throttle power on up shift

Value Units: seconds
X Unit: transmission fluid temperature °C

y/x	-40.00	-20.00	0.00	30.00	110.00
1	3.000	0.750	0.750	0.750	0.750

Initial Supporting table - C3 Torque-Based Pressure Clip

Description:

Value Units: Clutch Pressure (kPa)
X Unit: C3 Oncoming Clutch Torque (Nm)

y/x	0	100	200	300	600
1	300	400	500	575	800

Initial Supporting table - C3_Oncoming Post-Torque Phase Delay

Description: Post torque phase delay before calculating oncoming clutch clip pressure for powered upshifts when C3 is the oncoming clutch

Value Units: time (seconds)
X Unit: transmission fluid temperature °C

y/x	-40	-20	0	30	110
1	0	0	0	0	0

Initial Supporting table - C4 exhaust delay closed throttle down shift

Description: P2715 C4 clutch hydraulic circuit exhaust time in closed throttle down shift

Value Units: seconds
X Unit: transmission fluid temperature °C

y/x	-40.00	-20.00	0.00	30.00	110.00
1	1.600	1.100	0.950	0.850	0.850

Initial Supporting table - C4 exhaust delay closed throttle lift foot up shift

Description: P2715 C4 clutch hydraulic circuit exhaust time in closed throttle lift foot up shift

Value Units: seconds
X Unit: transmission fluid temperature °C

y/x	-40.00	-20.00	0.00	30.00	110.00
1	1.600	1.100	0.950	0.850	0.850

Initial Supporting table - C4 exhaust delay garage shift

Description: P2715 C4 clutch hydraulic circuit exhaust time in garage shift

Value Units: seconds
X Unit: transmission fluid temperature °C

y/x	-40.00	-20.00	0.00	30.00	110.00
1	0.250	0.250	0.250	0.250	0.250

Initial Supporting table - C4 exhaust delay negative torque up shift

Description: P2715 C4 clutch hydraulic circuit exhaust time in negative torque up shift

Value Units: seconds
X Unit: transmission fluid temperature °C

y/x	-40.00	-20.00	0.00	30.00	110.00
1	0.500	0.500	0.500	0.500	0.500

Initial Supporting table - C4 exhaust delay open throttle power down shift

Description: P2715 C4 clutch hydraulic circuit exhaust time in open throttle power down shift

Value Units: seconds
X Unit: transmission fluid temperature °C

y/x	-40.00	-20.00	0.00	30.00	110.00
1	1.600	1.100	0.950	0.850	0.850

Initial Supporting table - C4 exhaust delay open throttle power on up shift

Description: P2715 C4 clutch hydraulic circuit exhaust time in open throttle power on up shift

Value Units: seconds
X Unit: transmission fluid temperature °C

y/x	-40.00	-20.00	0.00	30.00	110.00
1	0.750	0.750	0.750	0.750	0.750

Initial Supporting table - C4 Torque-Based Pressure Clip

Description:

Value Units: Clutch Pressure (kPa)
X Unit: C4 Oncoming Clutch Torque (Nm)

y/x	0	100	200	300	600
1	400	650	750	800	900

Initial Supporting table - C4_Oncoming Post-Torque Phase Delay

Description: Post torque phase delay before calculating oncoming clutch clip pressure for powered upshifts when C4 is the oncoming clutch

Value Units: time (seconds)
X Unit: transmission fluid temperature °C

y/x	-40	-20	0	30	110
1	0	0	0	0	0

Initial Supporting table - C5 exhaust delay closed throttle down shift

Description: P2724 C5 clutch hydraulic circuit exhaust time in closed throttle down shift

Value Units: seconds
X Unit: transmission fluid temperature °C

y/x	-40.00	-20.00	0.00	30.00	110.00
1	1.600	1.100	0.950	0.850	0.850

Initial Supporting table - C5 exhaust delay closed throttle lift foot up shift

Description: P2724 C5 clutch hydraulic circuit exhaust time in closed throttle lift foot up shift

Value Units: seconds
X Unit: transmission fluid temperature °C

y/x	-40.00	-20.00	0.00	30.00	110.00
1	1.600	1.100	0.950	0.850	0.850

Initial Supporting table - C5 exhaust delay garage shift

Description: P2724 C5 clutch hydraulic circuit exhaust time in garage shift

Value Units: seconds
X Unit: transmission fluid temperature °C

y/x	-40	-20	0	30	110
1	0	0	0	0	0

Initial Supporting table - C5 exhaust delay negative torque up shift

Description: P0747 C1 clutch hydraulic circuit exhaust time in negative torque up shift

Value Units: seconds
X Unit: transmission fluid temperature °C

y/x	-40.00	-20.00	0.00	30.00	110.00
1	0.500	0.500	0.500	0.500	0.500

Initial Supporting table - C5 exhaust delay open throttle power down shift

Description: P2724 C5 clutch hydraulic circuit exhaust time in open throttle power down shift

Value Units: seconds
X Unit: transmission fluid temperature °C

y/x	-40.00	-20.00	0.00	30.00	110.00
1	1.600	1.100	0.950	0.850	0.850

Initial Supporting table - C5 exhaust delay open throttle power on up shift

Description: P2724 C5 clutch hydraulic circuit exhaust time in open throttle power on up shift

Value Units: seconds
X Unit: transmission fluid temperature °C

y/x	-40.00	-20.00	0.00	30.00	110.00
1	0.750	0.750	0.750	0.750	0.750

Initial Supporting table - C5 Torque-Based Pressure Clip

Description:

Value Units: Clutch Pressure (kPa)
X Unit: C5 Oncoming Clutch Torque (Nm)

y/x	0	100	200	300	600
1	300	600	700	750	900

Initial Supporting table - C5_Oncoming Post-Torque Phase Delay

Description: Post torque phase delay before calculating oncoming clutch clip pressure for powered upshifts when C5 is the oncoming clutch

Value Units: time (seconds)
X Unit: transmission fluid temperature °C

y/x	-40	-20	0	30	110
1	0	0	0	0	0

Initial Supporting table - C6 exhaust delay closed throttle lift foot up shift

Description: P2733 C6 clutch hydraulic circuit exhaust time in closed throttle lift foot up shift

Value Units: seconds
X Unit: transmission fluid temperature °C

y/x	-40.00	-20.00	0.00	30.00	110.00
1	1.600	1.100	0.950	0.850	0.850

Initial Supporting table - C6 exhaust delay garage shift

Description: P2733 C6 clutch hydraulic circuit exhaust time in garage shift

Value Units: seconds
X Unit: transmission fluid temperature °C

y/x	-40.00	-20.00	0.00	30.00	110.00
1	0.250	0.250	0.250	0.250	0.250

Initial Supporting table - C6 exhaust delay negative torque up shift

Description: P2733 C6 clutch hydraulic circuit exhaust time in negative torque up shift

Value Units: seconds
X Unit: transmission fluid temperature °C

y/x	-40.00	-20.00	0.00	30.00	110.00
1	0.500	0.500	0.500	0.500	0.500

Initial Supporting table - C6 exhaust delay open throttle power down shift

Description: P2733 C6 clutch hydraulic circuit exhaust time in open throttle power down shift

Value Units: seconds
X Unit: transmission fluid temperature °C

y/x	-40.00	-20.00	0.00	30.00	110.00
1	1.600	1.100	0.950	0.850	0.850

Initial Supporting table - C6 exhaust delay open throttle power on up shift

Description: P2733 C6 clutch hydraulic circuit exhaust time in open throttle power on up shift

Value Units: seconds
X Unit: transmission fluid temperature °C

y/x	-40.00	-20.00	0.00	30.00	110.00
1	0.750	0.750	0.750	0.750	0.750

Initial Supporting table - C6 Torque-Based Pressure Clip

Description:

Value Units: Clutch Pressure (kPa)
X Unit: C6 Oncoming Clutch Torque (Nm)

y/x	0	100	200	300	600
1	350	650	750	800	950

Initial Supporting table - C6_Oncoming Post-Torque Phase Delay

Description: Post torque phase delay before calculating oncoming clutch clip pressure for powered upshifts when C6 is the oncoming clutch

Value Units: time (seconds)
X Unit: transmission fluid temperature °C

y/x	-40	-20	0	30	110
1	0	0	0	0	0

Initial Supporting table - Clutch Clip Press CD Shifts

Description: Oncoming clutch clip pressure for closed throttle down shifts

Value Units: kPa
X Unit: Oncoming Clutch

y/x	CeTSER_e_C1_Clutch	CeTSER_e_C2_Clutch	CeTSER_e_C3_Clutch	CeTSER_e_C4_Clutch	CeTSER_e_C5_Clutch	CeTSER_e_C6_Clutch
1	250	400	400	400	400	400

Initial Supporting table - Clutch Clip Press GS Shifts

Description: Oncoming clutch clip pressure for garage shifts

Value Units: kPa
X Unit: Oncoming Clutch

y/x	CeTSER_e_C1_Clutch	CeTSER_e_C2_Clutch	CeTSER_e_C3_Clutch	CeTSER_e_C4_Clutch	CeTSER_e_C5_Clutch	CeTSER_e_C6_Clutch
1	450	750	850	400	400	400

Initial Supporting table - Clutch Clip Press NU Shifts

Description: Oncoming clutch clip pressure for negative torque up shifts

Value Units: kPa
X Unit: Oncoming Clutch

y/x	CeTSER_e_C1_Clutch	CeTSER_e_C2_Clutch	CeTSER_e_C3_Clutch	CeTSER_e_C4_Clutch	CeTSER_e_C5_Clutch	CeTSER_e_C6_Clutch
1	450	450	450	600	450	450

Initial Supporting table - Clutch Clip Press PD Shifts

Description: Oncoming clutch clip pressure for open throttle power down shifts

Value Units: kPa
X Unit: Oncoming Clutch

y/x	CeTSER_e_C1_Clutch	CeTSER_e_C2_Clutch	CeTSER_e_C3_Clutch	CeTSER_e_C4_Clutch	CeTSER_e_C5_Clutch	CeTSER_e_C6_Clutch
1	450	500	600	750	750	500

Initial Supporting table - Clutch Stuck On Fail Offset Time CD Shifts

Description: Used for closed throttle down shifts to add additional fail time based on oil temperature

Value Units: time (seconds)
X Unit: transmission fluid temperature °C

y/x	-40	-20	0	30	110
1	0	0	0	0	0

Initial Supporting table - Clutch Stuck On Fail Offset Time GS Shifts

Description: Used for garage shifts to add additional fail time based on oil temperature

Value Units: time (seconds)
X Unit: transmission fluid temperature °C

y/x	-40	-20	0	30	110
1	0	0	0	0	0

Initial Supporting table - Clutch Stuck On Fail Offset Time PD Shifts

Description: Used for open throttle power down shifts to add additional fail time based on oil temperature

Value Units: time (seconds)
X Unit: transmission fluid temperature °C

y/x	-40	-20	0	30	110
1	0	0	0	0	0

Initial Supporting table - Clutch Stuck On Fail Offset Time PU Shifts

Description: Used for powered up shifts to add additional fail time based on oil temperature

Value Units: time (seconds)
X Unit: transmission fluid temperature °C

y/x	-40	-20	0	30	110
1	1	0	0	0	0

Initial Supporting table - Clutch Stuck On Fail Offset Time STGR Shifts

Description: Used for clutch staging shifts to add additional fail time based on oil temperature

Value Units: time (seconds)
X Unit: transmission fluid temperature °C

y/x	-40	-20	0	30	110
1	0	0	0	0	0

Initial Supporting table - Clutch Stuck On Shift Type Enable

Description: Calibration to enable the clutch stuck on test for each shift type

X Unit: Shift Type
Y Units: Boolean

y/x	CeTSER_e_STGR	CeTSER_e_GSCR	CeTSER_e_NUCR	CeTSER_e_PUCR	CeTSER_e_CDCR	CeTSER_e_PDCR	CeTSER_e_CLAR
1	0	1	1	1	1	1	0

Initial Supporting table - engine speed time for transmission hydraulic pressure available

Description: time needed for engine speed to trigger "transmission hydraulic pressure available"

Value Units: seconds
X Unit: transmission fluid temperature °C

y/x	-40.00	-30.00	-20.00	0.00	40.00
1	1.525	1.500	0.981	0.938	0.800

Initial Supporting table - engine speed time for transmission hydraulic pressure available

Description: time needed for engine speed to trigger "transmission hydraulic pressure available"

Value Units: seconds
X Unit: °C

y/x	-40.00	-30.00	-20.00	0.00	40.00
1	1.525	1.500	0.981	0.938	0.800

Initial Supporting table - intermediate speed sensor 1 or 2 predicted direction

Description: intermediate speed sensor 1 or 2 predicted direction

Value Units: predicted direction: forward, reverse, unknown
X Unit: attained gear
Y Units: intermediate speed sensor 1 or 2

intermediate speed sensor 1 or 2 predicted direction - Part 1

y/x	CeCGSR_e_CR_NullForSched	CeCGSR_e_CR_Neutral	CeCGSR_e_CR_Park
CeTSRR_e_C2C_ClchSpdSnsr1	CeTNSR_e_DirectionUnknown	CeTNSR_e_DirectionUnknown	CeTNSR_e_DirectionUnknown
CeTSRR_e_C2C_ClchSpdSnsr2	CeTNSR_e_DirectionUnknown	CeTNSR_e_DirectionUnknown	CeTNSR_e_DirectionUnknown

intermediate speed sensor 1 or 2 predicted direction - Part 2

y/x	CeCGSR_e_CR_Reverse	CeCGSR_e_CR_First	CeCGSR_e_CR_Second
CeTSRR_e_C2C_ClchSpdSnsr1	CeTNSR_e_DirectionUnknown	CeTNSR_e_DirectionUnknown	CeTNSR_e_DirectionUnknown
CeTSRR_e_C2C_ClchSpdSnsr2	CeTNSR_e_DirectionUnknown	CeTNSR_e_DirectionUnknown	CeTNSR_e_DirectionUnknown

intermediate speed sensor 1 or 2 predicted direction - Part 3

y/x	CeCGSR_e_CR_Third	CeCGSR_e_CR_Fourth	CeCGSR_e_CR_Fifth
CeTSRR_e_C2C_ClchSpdSnsr1	CeTNSR_e_DirectionUnknown	CeTNSR_e_DirectionUnknown	CeTNSR_e_DirectionUnknown
CeTSRR_e_C2C_ClchSpdSnsr2	CeTNSR_e_DirectionForward	CeTNSR_e_DirectionForward	CeTNSR_e_DirectionForward

intermediate speed sensor 1 or 2 predicted direction - Part 4

y/x	CeCGSR_e_CR_Sixth	CeCGSR_e_CR_Seventh	CeCGSR_e_CR_Eighth
CeTSRR_e_C2C_ClchSpdSnsr1	CeTNSR_e_DirectionUnknown	CeTNSR_e_DirectionForward	CeTNSR_e_DirectionForward
CeTSRR_e_C2C_ClchSpdSnsr2	CeTNSR_e_DirectionForward	CeTNSR_e_DirectionForward	CeTNSR_e_DirectionForward

intermediate speed sensor 1 or 2 predicted direction - Part 5

y/x	CeCGSR_e_CR_Ninth	CeCGSR_e_CR_Tenth	
CeTSRR_e_C2C_ClchSpdSnsr1	CeTNSR_e_DirectionForward	CeTNSR_e_DirectionForward	
CeTSRR_e_C2C_ClchSpdSnsr2	CeTNSR_e_DirectionForward	CeTNSR_e_DirectionForward	

Initial Supporting table - NumClchTieUp

Description: NumClchTieUp

Value Units: minimum # of clutches
X Unit: command gear or attained gear
Y Units: not applicable, no units, single row table f(gear)

NumClchTieUp - Part 1

y/x	CeCGSR_e_NullForSched	CeCGSR_e_NeutralNoClutch	CeCGSR_e_NeutralC1	CeCGSR_e_NeutralC2	CeCGSR_e_NeutralC3	CeCGSR_e_NeutralC4	CeCGSR_e_NeutralC5
1	5	5	4	4	4	4	4

NumClchTieUp - Part 2

y/x	CeCGSR_e_NeutralC6	CeCGSR_e_NeutralC7	CeCGSR_e_NeutralC1C2	CeCGSR_e_NeutralC1C3	CeCGSR_e_NeutralC1C4	CeCGSR_e_NeutralC1C5	CeCGSR_e_NeutralC2C3
1	4	4	3	3	3	3	3

NumClchTieUp - Part 3

y/x	CeCGSR_e_NeutralC2C4	CeCGSR_e_NeutralC2C5	CeCGSR_e_NeutralC2C6	CeCGSR_e_NeutralC3C4	CeCGSR_e_NeutralC3C5	CeCGSR_e_NeutralC3C6	CeCGSR_e_NeutralC4C5
1	3	3	3	3	3	3	3

NumClchTieUp - Part 4

y/x	CeCGSR_e_NeutralC4C6	CeCGSR_e_NeutralC1C2C3C6	CeCGSR_e_Park_wNC	CeCGSR_e_Park_wNC1	CeCGSR_e_Park_wNC2	CeCGSR_e_Park_wNC3	CeCGSR_e_Park_wNC4
1	3	1	5	4	4	4	4

NumClchTieUp - Part 5

y/x	CeCGSR_e_Park_wNC5	CeCGSR_e_Park_wNC6	CeCGSR_e_Park_wNC7	CeCGSR_e_Park_wNC1C2	CeCGSR_e_Park_wNC2C3	CeCGSR_e_Park_wNC2C4	CeCGSR_e_Park_wNC2C5
1	4	4	4	3	3	3	3

NumClchTieUp - Part 6

y/x	CeCGSR_e_Park_wNC2C6	CeCGSR_e_Park_wNC3C4	CeCGSR_e_Park_wNC3C5	CeCGSR_e_Park_wNC3C6	CeCGSR_e_Park_wNC4C5	CeCGSR_e_Park_wNC4C6	CeCGSR_e_Park_wNC1C2C3C6
1	3	3	3	3	3	3	1

NumClchTieUp - Part 7

y/x	CeCGSR_e_Reverse	CeCGSR_e_FirstLckd	CeCGSR_e_FirstFW	CeCGSR_e_SecondLckd	CeCGSR_e_SecondFW	CeCGSR_e_Third	CeCGSR_e_Fourth
1	1	1	2	1	2	1	1

NumClchTieUp - Part 8

y/x	CeCGSR_e_Fifth	CeCGSR_e_Sixth	CeCGSR_e_Seventh	CeCGSR_e_Eighth	CeCGSR_e_Ninth	CeCGSR_e_Tenth	

Initial Supporting table - NumClchTieUp

1	1	1	1	1	1	1	

Initial Supporting table - P0606 Program Sequence Watch Enable f(CPU#, loop time or event)

Description: P0606 program sequence watch enable calibration

Value Units: Boolean
X Unit: column 1 calibration definition, column 2 calibration value
Y Units: rows of: calibration / calibration value

y/x	1	2
1	ProgSeqWatchEnbl[CeTSKR_e_CPU][CePISR_e_100msSeq]	0
2	ProgSeqWatchEnbl[CeTSKR_e_CPU][CePISR_e_10msSeq]	0
3	ProgSeqWatchEnbl[CeTSKR_e_CPU][CePISR_e_12p5msSeq]	1
4	ProgSeqWatchEnbl[CeTSKR_e_CPU][CePISR_e_20msSeq]	0
5	ProgSeqWatchEnbl[CeTSKR_e_CPU][CePISR_e_250msSeq]	0
6	ProgSeqWatchEnbl[CeTSKR_e_CPU][CePISR_e_25msSeq]	1
7	ProgSeqWatchEnbl[CeTSKR_e_CPU][CePISR_e_2p5msSeq]	0
8	ProgSeqWatchEnbl[CeTSKR_e_CPU][CePISR_e_3p125msSeq]	0
9	ProgSeqWatchEnbl[CeTSKR_e_CPU][CePISR_e_40msSeq]	0
10	ProgSeqWatchEnbl[CeTSKR_e_CPU][CePISR_e_50msSeq]	1
11	ProgSeqWatchEnbl[CeTSKR_e_CPU][CePISR_e_5msSeq]	0
12	ProgSeqWatchEnbl[CeTSKR_e_CPU][CePISR_e_6p25msSeq]	1
13	ProgSeqWatchEnbl[CeTSKR_e_CPU][CePISR_e_80msSeq]	0
14	ProgSeqWatchEnbl[CeTSKR_e_CPU][CePISR_e_EventA_Seq]	0
15	ProgSeqWatchEnbl[CeTSKR_e_CPU][CePISR_e_EventB_Seq]	0
16	ProgSeqWatchEnbl[CeTSKR_e_CPU][CePISR_e_EventC_Seq]	0
17	ProgSeqWatchEnbl[CeTSKR_e_CPU2][CePISR_e_100msSeq]	0
18	ProgSeqWatchEnbl[CeTSKR_e_CPU2][CePISR_e_10msSeq]	0
19	ProgSeqWatchEnbl[CeTSKR_e_CPU2][CePISR_e_12p5msSeq]	1
20	ProgSeqWatchEnbl[CeTSKR_e_CPU2][CePISR_e_20msSeq]	0
21	ProgSeqWatchEnbl[CeTSKR_e_CPU2][CePISR_e_250msSeq]	0
22	ProgSeqWatchEnbl[CeTSKR_e_CPU2][CePISR_e_25msSeq]	1
23	ProgSeqWatchEnbl[CeTSKR_e_CPU2][CePISR_e_2p5msSeq]	0
24	ProgSeqWatchEnbl[CeTSKR_e_CPU2]	0

Initial Supporting table - P0606 Program Sequence Watch Enable f(CPU#, loop time or event)

	[CePISR_e_3p125msSeq]	
25	ProgSeqWatchEnbl[CeTSKR_e_CPU2][CePISR_e_40msSeq]	0
26	ProgSeqWatchEnbl[CeTSKR_e_CPU2][CePISR_e_50msSeq]	1
27	ProgSeqWatchEnbl[CeTSKR_e_CPU2][CePISR_e_5msSeq]	0
28	ProgSeqWatchEnbl[CeTSKR_e_CPU2][CePISR_e_6p25msSeq]	1
29	ProgSeqWatchEnbl[CeTSKR_e_CPU2][CePISR_e_80msSeq]	0
30	ProgSeqWatchEnbl[CeTSKR_e_CPU2][CePISR_e_EventA_Seq]	0
31	ProgSeqWatchEnbl[CeTSKR_e_CPU2][CePISR_e_EventB_Seq]	0
32	ProgSeqWatchEnbl[CeTSKR_e_CPU2][CePISR_e_EventC_Seq]	0
33	ProgSeqWatchEnbl[CeTSKR_e_CPU3][CePISR_e_100msSeq]	0
34	ProgSeqWatchEnbl[CeTSKR_e_CPU3][CePISR_e_10msSeq]	0
35	ProgSeqWatchEnbl[CeTSKR_e_CPU3][CePISR_e_12p5msSeq]	0
36	ProgSeqWatchEnbl[CeTSKR_e_CPU3][CePISR_e_20msSeq]	0
37	ProgSeqWatchEnbl[CeTSKR_e_CPU3][CePISR_e_250msSeq]	0
38	ProgSeqWatchEnbl[CeTSKR_e_CPU3][CePISR_e_25msSeq]	0
39	ProgSeqWatchEnbl[CeTSKR_e_CPU3][CePISR_e_2p5msSeq]	0
40	ProgSeqWatchEnbl[CeTSKR_e_CPU3][CePISR_e_3p125msSeq]	0
41	ProgSeqWatchEnbl[CeTSKR_e_CPU3][CePISR_e_40msSeq]	0
42	ProgSeqWatchEnbl[CeTSKR_e_CPU3][CePISR_e_50msSeq]	0
43	ProgSeqWatchEnbl[CeTSKR_e_CPU3][CePISR_e_5msSeq]	0
44	ProgSeqWatchEnbl[CeTSKR_e_CPU3][CePISR_e_6p25msSeq]	0
45	ProgSeqWatchEnbl[CeTSKR_e_CPU3][CePISR_e_80msSeq]	0
46	ProgSeqWatchEnbl[CeTSKR_e_CPU3][CePISR_e_EventA_Seq]	0
47	ProgSeqWatchEnbl[CeTSKR_e_CPU3][CePISR_e_EventB_Seq]	0
48	ProgSeqWatchEnbl[CeTSKR_e_CPU3][CePISR_e_EventC_Seq]	0
49	ProgSeqWatchEnbl[CeTSKR_e_CPU4][CePISR_e_100msSeq]	0
50	ProgSeqWatchEnbl[CeTSKR_e_CPU4][CePISR_e_10msSeq]	0

Initial Supporting table - P0606 Program Sequence Watch Enable f(CPU#, loop time or event)

51	ProgSeqWatchEnbl[CeTSKR_e_CPU4][CePISR_e_12p5msSeq]	0
52	ProgSeqWatchEnbl[CeTSKR_e_CPU4][CePISR_e_20msSeq]	0
53	ProgSeqWatchEnbl[CeTSKR_e_CPU4][CePISR_e_250msSeq]	0
54	ProgSeqWatchEnbl[CeTSKR_e_CPU4][CePISR_e_25msSeq]	0
55	ProgSeqWatchEnbl[CeTSKR_e_CPU4][CePISR_e_2p5msSeq]	0
56	ProgSeqWatchEnbl[CeTSKR_e_CPU4][CePISR_e_3p125msSeq]	0
57	ProgSeqWatchEnbl[CeTSKR_e_CPU4][CePISR_e_40msSeq]	0
58	ProgSeqWatchEnbl[CeTSKR_e_CPU4][CePISR_e_50msSeq]	0
59	ProgSeqWatchEnbl[CeTSKR_e_CPU4][CePISR_e_5msSeq]	0
60	ProgSeqWatchEnbl[CeTSKR_e_CPU4][CePISR_e_6p25msSeq]	0
61	ProgSeqWatchEnbl[CeTSKR_e_CPU4][CePISR_e_80msSeq]	0
62	ProgSeqWatchEnbl[CeTSKR_e_CPU4][CePISR_e_EventA_Seq]	0
63	ProgSeqWatchEnbl[CeTSKR_e_CPU4][CePISR_e_EventB_Seq]	0
64	ProgSeqWatchEnbl[CeTSKR_e_CPU4][CePISR_e_EventC_Seq]	0

Initial Supporting table - P0606_Last Seed Timeout f(Loop Time)

Description: The max time for the Last Seed Timeout as a function of operating loop time sequence.

Value Units: Max Time for Last Seed Timeout (ms)
X Unit: Operating Loop Sequence (enum)

P0606_Last Seed Timeout f(Loop Time) - Part 1

y/x	CePISR_e_2p5msSeq	CePISR_e_3p125msSeq	CePISR_e_5msSeq	CePISR_e_6p25msSeq	CePISR_e_10msSeq	CePISR_e_12p5msSeq	CePISR_e_20msSeq	CePISR_e_25msSeq
1	200.000	200.000	200.000	200.000	200.000	200.000	200.000	200.000

P0606_Last Seed Timeout f(Loop Time) - Part 2

y/x	CePISR_e_40msSeq	CePISR_e_50msSeq	CePISR_e_80msSeq	CePISR_e_100msSeq	CePISR_e_250msSeq	CePISR_e_EventA_Seq	CePISR_e_EventB_Seq	CePISR_e_EventC_Seq
1	200.000	200.000	200.000	500.000	1,000.000	8,191.875	8,191.875	8,191.875

Initial Supporting table - P0606_PSW Sequence Fail f(Loop Time)

Description: Fail threshold for PSW per operating loop.

Value Units: Fail threshold for PSW (count)
X Unit: Operating Loop (enum)

P0606_PSW Sequence Fail f(Loop Time) - Part 1

y/x	CePISR_e_2p5msSeq	CePISR_e_3p125msSeq	CePISR_e_5msSeq	CePISR_e_6p25msSeq	CePISR_e_10msSeq	CePISR_e_12p5msSeq	CePISR_e_20msSeq	CePISR_e_25msSeq
1	2	2	2	2	2	2	2	2

P0606_PSW Sequence Fail f(Loop Time) - Part 2

y/x	CePISR_e_40msSeq	CePISR_e_50msSeq	CePISR_e_80msSeq	CePISR_e_100msSeq	CePISR_e_250msSeq	CePISR_e_EventA_Seq	CePISR_e_EventB_Seq	CePISR_e_EventC_Seq
1	2	1	1	1	1	2	2	2

Initial Supporting table - P0606_PSW Sequence Sample f(Loop Time)

Description: Sample threshold for PSW per operating loop.

Value Units: Sample threshold for PSW (count)
X Unit: Operating Loop (enum)

P0606_PSW Sequence Sample f(Loop Time) - Part 1

y/x	CePISR_e_2p5msSeq	CePISR_e_3p125msSeq	CePISR_e_5msSeq	CePISR_e_6p25msSeq	CePISR_e_10msSeq	CePISR_e_12p5msSeq	CePISR_e_20msSeq	CePISR_e_25msSeq
1	4	4	4	4	4	4	4	4

P0606_PSW Sequence Sample f(Loop Time) - Part 2

y/x	CePISR_e_40msSeq	CePISR_e_50msSeq	CePISR_e_80msSeq	CePISR_e_100msSeq	CePISR_e_250msSeq	CePISR_e_EventA_Seq	CePISR_e_EventB_Seq	CePISR_e_EventC_Seq
1	4	2	2	2	2	3	3	3

Initial Supporting table - P0722 OSS Direction Change Delay

Description:

Value Units: seconds
X Unit: DegC

y/x	-40	-20	20
1	5	3	1

Initial Supporting table - P0723 transmission engaged state time threshold

Description: time necessary after transmission engaged state indicates transmsision engaged to allow P0723 enable

Value Units: seconds
X Unit: transmission fluid temperature °C

y/x	-40.000	-20.000	20.000
1	5.000	3.000	1.000

Initial Supporting table - P0741 GR10 torque converter K factor fail limit

Description:

Value Units: transmission torque converter K factor
X Unit: transmission torque converter speed ratio = transmission turbine shaft speed / engine speed

y/x	0.000	0.100	0.200	0.300	0.500	0.700	0.800	0.945	0.950
1	400.0	350.0	250.0	250.0	250.0	250.0	500.0	700.0	16,383.8

Initial Supporting table - P176B delay to allow transmission input, intermediate and output speeds to stablize for fail evaluation

Description: delay to allow transmission input, intermediate and output speeds to stablize for fail evaluation

Value Units: seconds
X Unit: intermediate speed sensor select

y/x	CeTSRR_e_C2C_ClchSpdSnsr1	CeTSRR_e_C2C_ClchSpdSnsr2
1	0.500	0.500

Initial Supporting table - P176B holding clutch states

Description: inditaces when the clutch states allow transmission intermediate speed sensor evaluation, when rotating components can trigger speed sesnor, holding clutches will not allow evaluation while clutches not holding will allow evaluation

Value Units: TRUE or FALSE
X Unit: intermediate speed sensor select
Y Units: commanded gear

y/x	CeTSRR_e_C2C_ClchSpdSnsr1	CeTSRR_e_C2C_ClchSpdSnsr2
CeCGSR_e_CR_NullForSched	1	1
CeCGSR_e_CR_Neutral	1	1
CeCGSR_e_CR_Park	1	1
CeCGSR_e_CR_Reverse	1	1
CeCGSR_e_CR_First	1	1
CeCGSR_e_CR_Second	1	1
CeCGSR_e_CR_Third	1	0
CeCGSR_e_CR_Fourth	1	0
CeCGSR_e_CR_Fifth	1	0
CeCGSR_e_CR_Sixth	1	0
CeCGSR_e_CR_Seventh	0	0
CeCGSR_e_CR_Eighth	0	0
CeCGSR_e_CR_Ninth	0	0
CeCGSR_e_CR_Tenth	0	0

Initial Supporting table - P176B intermediate speed sensor fail count threshold

Description: P176B intermediate speed sensor fail count threshold

Value Units: fail counts
X Unit: intermediate speed sensor select

y/x	CeTSRR_e_C2C_ClchSpdSnsr1	CeTSRR_e_C2C_ClchSpdSnsr2
1	3	3

Initial Supporting table - P176B intermediate speed sensor fail time threshold

Description: P176B intermediate speed sensor fail time threshold

Value Units: seconds
X Unit: intermediate speed sensor select

y/x	CeTSRR_e_C2C_ClchSpdSnsr1	CeTSRR_e_C2C_ClchSpdSnsr2
1	1.500	1.500

Initial Supporting table - P176B minimum estimated transmission intermediate speed to enable fail evaluation

Description: minimum estimated transmission intermediate speed to enable fail evaluation, where estimate is based on transmission input speed / ratio calibration, where ratio calibration is either P176B ratio calibration when REVERSE or P176B ratio calibration when not REVERSE

Value Units: estimated transmission intermediate speed RPM
X Unit: intermediate speed sensor select

y/x	CeTSRR_e_C2C_ClchSpdSnsr1	CeTSRR_e_C2C_ClchSpdSnsr2
1	192.0	192.0

Initial Supporting table - P176B minimum transmission input speed to enable fail evaluation

Description: minimum transmission input speed to enable fail evaluation

Value Units: transmission input speed RPM
X Unit: intermediate speed sensor select

y/x	CeTSRR_e_C2C_ClchSpdSnsr1	CeTSRR_e_C2C_ClchSpdSnsr2
1	192.0	192.0

Initial Supporting table - P176B ratio calibration when not REVERSE

Description: used to estimate transmission input speed based on transmission intermediate speed when range is not REVERSE

Value Units: ratio
X Unit: commanded gear
Y Units: intermediate speed sensor select

y/x	CeTGRR_e_Gear1	CeTGRR_e_Gear2	CeTGRR_e_Gear3	CeTGRR_e_Gear4	CeTGRR_e_Gear5	CeTGRR_e_Gear6	CeTGRR_e_Gear7	CeTGRR_e_Gear8	CeTGRR_e_Gear9	CeTGRR_e_Gear10
CeTSRR_e_C2C_ClchSpdSnsr1	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.5596	0.4342	0.4342
CeTSRR_e_C2C_ClchSpdSnsr2	1.0000	1.0000	3.1250	1.7699	1.7699	1.3774	1.0000	0.8224	0.6382	0.6382

Initial Supporting table - P176B ratio calibration when REVERSE

Description: used to estimate transmission input speed based on transmission intermediate speed when range is REVERSE

Value Units: ratio
X Unit: intermediate speed sensor select

y/x	CeTSRR_e_C2C_ClchSpdSnsr1	CeTSRR_e_C2C_ClchSpdSnsr2
1	1.0000	1.0000

Initial Supporting table - P176C Enable Boolean

Description:

Value Units: Boolean

y/x	0	1
1	1	1

Initial Supporting table - P176C Fail Count Threshold

Description:

Value Units: Count

y/x	0	1
1	40	40

Initial Supporting table - P176C Fail Timer

Description:

Value Units: seconds
X Unit: intermediate speed sensor index

y/x	0	1
1	0	0

Initial Supporting table - P176D Boolean Enable

Description:

Value Units: Boolean
X Unit: Speed Sensor Index

y/x	0	1
1	1	1

Initial Supporting table - P176D Fail Count Threshold

Description:

Value Units: Count
X Unit: Speed Sensor Index

y/x	0	1
1	40	40

Initial Supporting table - P176D Fail Time Threshold

Description:

Value Units: seconds
X Unit: Speed Sensor Index

y/x	0	1
1	0	0

Initial Supporting table - P176D Voltage Fail Threshold

Description:

Value Units: Volts
X Unit: Speed Sensor Index

y/x	0	1
1	5	5

Initial Supporting table - P17C5 P17D3 intermediate speed sensor RPM

Description: P17C5 P17D3 intermediate speed sensor RPM at signal period transtion to enable fail time update

Value Units: intermediate speed sensor RPM
X Unit: intermediate speed sensor 1 or 2

y/x	0	1
1	350	225

Initial Supporting table - P17D6 delay to allow transmission input, intermediate and output speeds to stablize for fail evaluation

Description: delay to allow transmission input, intermediate and output speeds to stablize for fail evaluation

Value Units: seconds
X Unit: intermediate speed sensor select

y/x	CeTSRR_e_C2C_ClchSpdSnsr1	CeTSRR_e_C2C_ClchSpdSnsr2
1	0.500	0.500

Initial Supporting table - P17D6 holding clutch states

Description: inditaces when the clutch states allow transmission intermediate speed sensor evaluation, when rotating components can trigger speed sesnor, holding clutches will not allow evaluation while clutches not holding will allow evaluation

Value Units: TRUE or FALSE
X Unit: commanded gear
Y Units: intermediate speed sensor select

y/x	CeTSRR_e_C2C_ClchSpdSnsr1	CeTSRR_e_C2C_ClchSpdSnsr2
CeCGSR_e_CR_NullForSched	1	1
CeCGSR_e_CR_Neutral	1	1
CeCGSR_e_CR_Park	1	1
CeCGSR_e_CR_Reverse	1	1
CeCGSR_e_CR_First	1	1
CeCGSR_e_CR_Second	1	1
CeCGSR_e_CR_Third	1	0
CeCGSR_e_CR_Fourth	1	0
CeCGSR_e_CR_Fifth	1	0
CeCGSR_e_CR_Sixth	1	0
CeCGSR_e_CR_Seventh	0	0
CeCGSR_e_CR_Eighth	0	0
CeCGSR_e_CR_Ninth	0	0
CeCGSR_e_CR_Tenth	0	0

Initial Supporting table - P17D6 intermediate speed sensor fail count threshold

Description: P176B intermediate speed sensor fail count threshold

Value Units: fail counts
X Unit: intermediate speed sensor select

y/x	CeTSRR_e_C2C_ClchSpdSnsr1	CeTSRR_e_C2C_ClchSpdSnsr2
1	3	3

Initial Supporting table - P17D6 intermediate speed sensor fail RPM threshold

Description: P17D6 intermediate speed sensor fail RPM speed threshold

Value Units: RPM
X Unit: intermediate speed sensor select

y/x	CeTSRR_e_C2C_ClchSpdSnsr1	CeTSRR_e_C2C_ClchSpdSnsr2
1	100	100

Initial Supporting table - P17D6 intermediate speed sensor fail time threshold

Description: P17D6 intermediate speed sensor fail time threshold

Value Units: seconds
X Unit: intermediate speed sensor select

y/x	CeTSRR_e_C2C_ClchSpdSnsr1	CeTSRR_e_C2C_ClchSpdSnsr2
1	1.500	1.500

Initial Supporting table - P17D6 minimum estimated transmission intermediate speed to enable fail evaluation

Description: minimum estimated transmission intermediate speed to enable fail evaluation, where estimate is based on transmission input speed / ratio calibration, where ratio calibration is either P17D6 ratio calibration when REVERSE or P17D6 ratio calibration when not REVERSE

Value Units: estimated transmission intermediate speed RPM
X Unit: intermediate speed sensor select

y/x	CeTSRR_e_C2C_ClchSpdSnsr1	CeTSRR_e_C2C_ClchSpdSnsr2
1	192	192

Initial Supporting table - P17D6 minimum transmission input speed to enable fail evaluation

Description: minimum transmission input speed to enable fail evaluation

Value Units: transmission input speed RPM
X Unit: intermediate speed sensor select

y/x	CeTSRR_e_C2C_ClchSpdSnsr1	CeTSRR_e_C2C_ClchSpdSnsr2
1	192	192

Initial Supporting table - P17D6 ratio calibration when not REVERSE

Description: used to estimate transmission input speed based on transmission intermediate speed when range is not REVERSE

Value Units: ratio
X Unit: commanded gear
Y Units: intermediate speed sensor select

y/x	CeTGRR_e_Gear1	CeTGRR_e_Gear2	CeTGRR_e_Gear3	CeTGRR_e_Gear4	CeTGRR_e_Gear5	CeTGRR_e_Gear6	CeTGRR_e_Gear7	CeTGRR_e_Gear8	CeTGRR_e_Gear9	CeTGRR_e_Gear10
CeTSRR_e_C2C_ClchSpdSnsr1	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.5596	0.4342	0.4342
CeTSRR_e_C2C_ClchSpdSnsr2	1.0000	1.0000	3.1250	1.7699	1.7699	1.3774	1.0000	0.8224	0.6382	0.6382

Initial Supporting table - P17D6 ratio calibration when REVERSE

Description: used to estimate transmission input speed based on transmission intermediate speed when range is REVERSE

Value Units: ratio

y/x	CeTSRR_e_C2C_ClchSpdSnsr1	CeTSRR_e_C2C_ClchSpdSnsr2
1	1.0000	1.0000

Initial Supporting table - P187D P18E7 Park to Out Of Park Transition Delay

Description:

Value Units: Seconds
X Unit: Deg C

y/x	-40.00	-20.00	0.00	20.00	130.00
1	4.00	2.00	1.00	0.80	0.80

Initial Supporting table - P187E P18E8 Out Of Park to Park Min Line Transition Delay

Description:

Value Units: Seconds
X Unit: Deg C

y/x	-40.00	-20.00	0.00	20.00	130.00
1.00	4.80	2.40	1.20	1.20	1.20

Initial Supporting table - P187E P18E8 Out Of Park to Park Transition Delay

Description:

Value Units: Seconds
X Unit: Deg C

y/x	-40.00	-20.00	0.00	20.00	130.00
1.00	2.40	1.20	0.60	0.60	0.60

Initial Supporting table - P18A1 P18AA P27EC Mode Valve High To Low Transition Delay

Description:

Value Units: Seconds
X Unit: Deg C

y/x	-40.00	-20.00	0.00	20.00	130.00
1.00	1.60	0.80	0.25	0.13	0.08

Initial Supporting table - P18AA Mode Valve High To Low Min Line Transition Delay

Description:

Value Units: Seconds
X Unit: Deg C

y/x	-40.00	-20.00	0.00	20.00	130.00
1.00	4.70	2.00	0.80	0.43	0.26

Initial Supporting table - P18AB P27EC Mode Valve Low to High Transition Delay

Description:

Value Units: Seconds
X Unit: Deg C

y/x	-40.00	-20.00	0.00	20.00	130.00
1.00	1.20	0.60	0.20	0.10	0.08

Initial Supporting table - P18AE Enable Valve Test Delay

Description:

Value Units: Seconds
X Unit: Deg C

y/x	-40.00	-20.00	0.00	20.00	130.00
1.00	0.50	0.30	0.16	0.08	0.08

Initial Supporting table - P2797 hydraulic pressure delay

Description: Time to delay the initial x of y counter due to hydraulic transients. Thresholds are a function of transmission fluid temperature. Horizontal axis is transmission fluid temperature (DegC) and table output is delay time (seconds).

Value Units: delay time seconds
X Unit: transmission fluid temperature DegC

y/x	-40	0	20	30	40	50	60
1	0.090	0.090	0.080	0.050	0.050	0.050	0.050

Initial Supporting table - P2797 predicted turbine speed error

Description: Predicted turbine speed vs actual turbine speed error. Thresholds are a function of engine speed and transmission fliud temperature. Diagnostic is considered failing above these values. Table vertical axis is engine speed (RPM), horizontal axis is transmission fluid temperature (DegC) and table output is predicted turbine speed error (RPM).

Value Units: turbine speed RPM error
X Unit: transmission fluid temperature DegC
Y Units: engine speed RPM

y/x	-40	0	10	20	40
0	300	300	300	300	300
500	300	300	300	300	300
1,100	300	300	300	300	300
1,500	300	300	300	300	300
2,500	300	300	300	300	300

Initial Supporting table - P2817 TCC stuck off fail TCC slip speed

Description: TCC stuck off slip speed fail threshold when TCC is in ON mode (controlled slip mode)

Value Units: RPM
X Unit: engine torque Nm

y/x	0.00	64.00	128.00	192.00	256.00	320.00	384.00	448.00	512.00
1	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0

Initial Supporting table - P2818 TCC stuck on fail time garage shift - GR10

Description: GR10 P2818 TCC stuck on fail time garage shift

Value Units: seconds
X Unit: rate of change of engine speed, RPM/second
Y Units: unitless

y/x	50	100	150	250	300
1	0.250	0.200	0.125	0.100	0.100

Initial Supporting table - P2818 TCC stuck on fail time stall pending - GR10

Description: GR10 P2818 TCC stuck on fail time stall pending

Value Units: seconds
X Unit: rate of change of engine speed, RPM/second
Y Units: unitless

y/x	50	100	150	250	300
1	0.750	0.300	0.300	0.200	0.100

Initial Supporting table - P2820 GR10 hydraulic default at launch test window

Description:

Value Units: RPM/sec
X Unit: °C

y/x	-10	5	15	30	110
1	0	0	1	1	1

Initial Supporting table - P2820 GR10 hydraulic default input speed deceleration threshold

Description: Negative acceleration needed to increment fail timer for GR10 default disable solenoid stuck off at launch diagnostic

Value Units: RPM/sec
X Unit: °C

y/x	-10	5	15	30	110
1	-32,768	-32,768	-3,500	-2,000	-2,000

Initial Supporting table - P2D2 Cltch Slip Sum

Description:

Value Units: rate of change of output rpm (dn) per 25 milliseconds
X Unit: % brake pedal position
Y Units: not applicable, no units, single row table f(brake pedal position)

y/x	0	15	20	30	35	50	75	88	100
1	-4	-4	-4	-4	-4	-4	-4	-4	-4

Initial Supporting table - P2D2 Decel Pressure - C1

Description: clutch 1 command pressure threshold below which clutch 1 is considered released, such that, clutch 1 cannot carry enough clutch torque that would induce a vehicle deceleration above the design safety metric

Value Units: kPa
X Unit: command gear
Y Units: not applicable, no units, single row table f(command gear)

P2D2 Decel Pressure - C1 - Part 1

y/x	CeCGSR_e_NullForSched	CeCGSR_e_NeutralNoClutch	CeCGSR_e_NeutralC1	CeCGSR_e_NeutralC2	CeCGSR_e_NeutralC3
1	446.5	446.5	99,999.0	294.6	446.5

P2D2 Decel Pressure - C1 - Part 2

y/x	CeCGSR_e_NeutralC4	CeCGSR_e_NeutralC5	CeCGSR_e_NeutralC6	CeCGSR_e_NeutralC7	CeCGSR_e_NeutralC1C2
1	446.5	446.5	446.5	99,999.0	99,999.0

P2D2 Decel Pressure - C1 - Part 3

y/x	CeCGSR_e_NeutralC1C3	CeCGSR_e_NeutralC1C4	CeCGSR_e_NeutralC1C5	CeCGSR_e_NeutralC2C3	CeCGSR_e_NeutralC2C4
1	99,999.0	99,999.0	99,999.0	294.6	294.6

P2D2 Decel Pressure - C1 - Part 4

y/x	CeCGSR_e_NeutralC2C5	CeCGSR_e_NeutralC2C6	CeCGSR_e_NeutralC3C4	CeCGSR_e_NeutralC3C5	CeCGSR_e_NeutralC3C6
1	287.1	294.6	446.5	446.5	446.5

P2D2 Decel Pressure - C1 - Part 5

y/x	CeCGSR_e_NeutralC4C5	CeCGSR_e_NeutralC4C6	CeCGSR_e_NeutralC1C2C3C6	CeCGSR_e_Park_wNC	CeCGSR_e_Park_wNC1
1	446.5	446.5	446.5	446.5	99,999.0

P2D2 Decel Pressure - C1 - Part 6

y/x	CeCGSR_e_Park_wNC2	CeCGSR_e_Park_wNC3	CeCGSR_e_Park_wNC4	CeCGSR_e_Park_wNC5	CeCGSR_e_Park_wNC6
1	294.6	446.5	446.5	446.5	446.5

P2D2 Decel Pressure - C1 - Part 7

y/x	CeCGSR_e_Park_wNC7	CeCGSR_e_Park_wNC1C2	CeCGSR_e_Park_wNC2C3	CeCGSR_e_Park_wNC2C4	CeCGSR_e_Park_wNC2C5
1	99,999.0	99,999.0	294.6	294.6	287.1

P2D2 Decel Pressure - C1 - Part 8

y/x	CeCGSR_e_Park_wNC2C6	CeCGSR_e_Park_wNC3C4	CeCGSR_e_Park_wNC3C5	CeCGSR_e_Park_wNC3C6	CeCGSR_e_Park_wNC4C5
1	294.6	446.5	446.5	446.5	446.5

P2D2 Decel Pressure - C1 - Part 9

y/x	CeCGSR_e_Park_wNC4C6	CeCGSR_e_Park_wNC1C2C3C6	CeCGSR_e_Reverse	CeCGSR_e_FirstLckd	CeCGSR_e_FirstFW

Initial Supporting table - P2D2 Decel Pressure - C1

1	446.5	446.5	99,999.0	99,999.0	99,999.0

P2D2 Decel Pressure - C1 - Part 10

y/x	CeCGSR_e_SecondLckd	CeCGSR_e_SecondFW	CeCGSR_e_Third	CeCGSR_e_Fourth	CeCGSR_e_Fifth
1	99,999.0	99,999.0	99,999.0	99,999.0	99,999.0

P2D2 Decel Pressure - C1 - Part 11

y/x	CeCGSR_e_Sixth	CeCGSR_e_Seventh	CeCGSR_e_Eighth	CeCGSR_e_Ninth	CeCGSR_e_Tenth
1	99,999.0	446.5	287.1	273.6	294.6

P2D2 Decel Pressure - C1 - Part 12

y/x					
1					

Initial Supporting table - P2D2 Decel Pressure - C2

Description: clutch 2 command pressure threshold below which clutch 2 is considered released, such that, clutch 2 cannot carry enough clutch torque that would induce a vehicle deceleration above the design safety metric

Value Units: kPa
X Unit: command gear
Y Units: not applicable, no units, single row table f(command gear)

P2D2 Decel Pressure - C2 - Part 1

y/x	CeCGSR_e_NullForSched	CeCGSR_e_NeutralNoClutch	CeCGSR_e_NeutralC1	CeCGSR_e_NeutralC2	CeCGSR_e_NeutralC3
1	662	662	352	99,999	662

P2D2 Decel Pressure - C2 - Part 2

y/x	CeCGSR_e_NeutralC4	CeCGSR_e_NeutralC5	CeCGSR_e_NeutralC6	CeCGSR_e_NeutralC7	CeCGSR_e_NeutralC1C2
1	662	662	662	99,999	99,999

P2D2 Decel Pressure - C2 - Part 3

y/x	CeCGSR_e_NeutralC1C3	CeCGSR_e_NeutralC1C4	CeCGSR_e_NeutralC1C5	CeCGSR_e_NeutralC2C3	CeCGSR_e_NeutralC2C4
1	352	352	352	99,999	99,999

P2D2 Decel Pressure - C2 - Part 4

y/x	CeCGSR_e_NeutralC2C5	CeCGSR_e_NeutralC2C6	CeCGSR_e_NeutralC3C4	CeCGSR_e_NeutralC3C5	CeCGSR_e_NeutralC3C6
1	99,999	99,999	662	662	662

P2D2 Decel Pressure - C2 - Part 5

y/x	CeCGSR_e_NeutralC4C5	CeCGSR_e_NeutralC4C6	CeCGSR_e_NeutralC1C2C3C6	CeCGSR_e_Park_wNC	CeCGSR_e_Park_wNC1
1	662	662	99,999	662	352

P2D2 Decel Pressure - C2 - Part 6

y/x	CeCGSR_e_Park_wNC2	CeCGSR_e_Park_wNC3	CeCGSR_e_Park_wNC4	CeCGSR_e_Park_wNC5	CeCGSR_e_Park_wNC6
1	99,999	662	662	662	662

P2D2 Decel Pressure - C2 - Part 7

y/x	CeCGSR_e_Park_wNC7	CeCGSR_e_Park_wNC1C2	CeCGSR_e_Park_wNC2C3	CeCGSR_e_Park_wNC2C4	CeCGSR_e_Park_wNC2C5
1	99,999	99,999	99,999	99,999	99,999

P2D2 Decel Pressure - C2 - Part 8

y/x	CeCGSR_e_Park_wNC2C6	CeCGSR_e_Park_wNC3C4	CeCGSR_e_Park_wNC3C5	CeCGSR_e_Park_wNC3C6	CeCGSR_e_Park_wNC4C5
1	99,999	662	662	662	662

P2D2 Decel Pressure - C2 - Part 9

y/x	CeCGSR_e_Park_wNC4C6	CeCGSR_e_Park_wNC1C2C3C6	CeCGSR_e_Reverse	CeCGSR_e_FirstLckd	CeCGSR_e_FirstFW

Initial Supporting table - P2D2 Decel Pressure - C2

1	662	99,999	99,999	99,999	99,999
P2D2 Decel Pressure - C2 - Part 10					
y/x	CeCGSR_e_SecondLckd	CeCGSR_e_SecondFW	CeCGSR_e_Third	CeCGSR_e_Fourth	CeCGSR_e_Fifth
1	99,999	99,999	352	228	252
P2D2 Decel Pressure - C2 - Part 11					
y/x	CeCGSR_e_Sixth	CeCGSR_e_Seventh	CeCGSR_e_Eighth	CeCGSR_e_Ninth	CeCGSR_e_Tenth
1	231	662	99,999	99,999	99,999
P2D2 Decel Pressure - C2 - Part 12					
y/x					
1					

Initial Supporting table - P2D2 Decel Pressure - C3

Description: clutch 3 command pressure threshold below which clutch 3 is considered released, such that, clutch 3 cannot carry enough clutch torque that would induce a vehicle deceleration above the design safety metric

Value Units: kPa
X Unit: command gear
Y Units: not applicable, no units, single row table f(command gear)

P2D2 Decel Pressure - C3 - Part 1

y/x	CeCGSR_e_NullForSched	CeCGSR_e_NeutralNoClutch	CeCGSR_e_NeutralC1	CeCGSR_e_NeutralC2	CeCGSR_e_NeutralC3
1	99,999	99,999	99,999	99,999	99,999

P2D2 Decel Pressure - C3 - Part 2

y/x	CeCGSR_e_NeutralC4	CeCGSR_e_NeutralC5	CeCGSR_e_NeutralC6	CeCGSR_e_NeutralC7	CeCGSR_e_NeutralC1C2
1	99,999	99,999	1,652	99,999	99,999

P2D2 Decel Pressure - C3 - Part 3

y/x	CeCGSR_e_NeutralC1C3	CeCGSR_e_NeutralC1C4	CeCGSR_e_NeutralC1C5	CeCGSR_e_NeutralC2C3	CeCGSR_e_NeutralC2C4
1	99,999	99,999	99,999	99,999	99,999

P2D2 Decel Pressure - C3 - Part 4

y/x	CeCGSR_e_NeutralC2C5	CeCGSR_e_NeutralC2C6	CeCGSR_e_NeutralC3C4	CeCGSR_e_NeutralC3C5	CeCGSR_e_NeutralC3C6
1	99,999	1,652	99,999	99,999	99,999

P2D2 Decel Pressure - C3 - Part 5

y/x	CeCGSR_e_NeutralC4C5	CeCGSR_e_NeutralC4C6	CeCGSR_e_NeutralC1C2C3C6	CeCGSR_e_Park_wNC	CeCGSR_e_Park_wNC1
1	99,999	1,652	99,999	99,999	99,999

P2D2 Decel Pressure - C3 - Part 6

y/x	CeCGSR_e_Park_wNC2	CeCGSR_e_Park_wNC3	CeCGSR_e_Park_wNC4	CeCGSR_e_Park_wNC5	CeCGSR_e_Park_wNC6
1	99,999	99,999	99,999	99,999	1,652

P2D2 Decel Pressure - C3 - Part 7

y/x	CeCGSR_e_Park_wNC7	CeCGSR_e_Park_wNC1C2	CeCGSR_e_Park_wNC2C3	CeCGSR_e_Park_wNC2C4	CeCGSR_e_Park_wNC2C5
1	99,999	1,652	99,999	99,999	99,999

P2D2 Decel Pressure - C3 - Part 8

y/x	CeCGSR_e_Park_wNC2C6	CeCGSR_e_Park_wNC3C4	CeCGSR_e_Park_wNC3C5	CeCGSR_e_Park_wNC3C6	CeCGSR_e_Park_wNC4C5
1	1,652	99,999	99,999	99,999	1,652

P2D2 Decel Pressure - C3 - Part 9

y/x	CeCGSR_e_Park_wNC4C6	CeCGSR_e_Park_wNC1C2C3C6	CeCGSR_e_Reverse	CeCGSR_e_FirstLckd	CeCGSR_e_FirstFW

Initial Supporting table - P2D2 Decel Pressure - C3

1	1,652	99,999	193	99,999	99,999
P2D2 Decel Pressure - C3 - Part 10					
y/x	CeCGSR_e_SecondLckd	CeCGSR_e_SecondFW	CeCGSR_e_Third	CeCGSR_e_Fourth	CeCGSR_e_Fifth
1	99,999	99,999	99,999	99,999	99,999
P2D2 Decel Pressure - C3 - Part 11					
y/x	CeCGSR_e_Sixth	CeCGSR_e_Seventh	CeCGSR_e_Eighth	CeCGSR_e_Ninth	CeCGSR_e_Tenth
1	896	99,999	1,652	99,999	99,999
P2D2 Decel Pressure - C3 - Part 12					
y/x					
1					

Initial Supporting table - P2D2 Decel Pressure - C4

Description: clutch 4 command pressure threshold below which clutch 4 is considered released, such that, clutch 4 cannot carry enough clutch torque that would induce a vehicle deceleration above the design safety metric

Value Units: kPa
X Unit: command gear
Y Units: not applicable, no units, single row table f(command gear)

P2D2 Decel Pressure - C4 - Part 1

y/x	CeCGSR_e_NullForSched	CeCGSR_e_NeutralNoClutch	CeCGSR_e_NeutralC1	CeCGSR_e_NeutralC2	CeCGSR_e_NeutralC3
1	2,706	2,706	2,706	1,994	2,706

P2D2 Decel Pressure - C4 - Part 2

y/x	CeCGSR_e_NeutralC4	CeCGSR_e_NeutralC5	CeCGSR_e_NeutralC6	CeCGSR_e_NeutralC7	CeCGSR_e_NeutralC1C2
1	99,999	2,706	2,706	99,999	368

P2D2 Decel Pressure - C4 - Part 3

y/x	CeCGSR_e_NeutralC1C3	CeCGSR_e_NeutralC1C4	CeCGSR_e_NeutralC1C5	CeCGSR_e_NeutralC2C3	CeCGSR_e_NeutralC2C4
1	2,706	99,999	99,999	1,994	99,999

P2D2 Decel Pressure - C4 - Part 4

y/x	CeCGSR_e_NeutralC2C5	CeCGSR_e_NeutralC2C6	CeCGSR_e_NeutralC3C4	CeCGSR_e_NeutralC3C5	CeCGSR_e_NeutralC3C6
1	1,994	1,994	99,999	2,706	2,706

P2D2 Decel Pressure - C4 - Part 5

y/x	CeCGSR_e_NeutralC4C5	CeCGSR_e_NeutralC4C6	CeCGSR_e_NeutralC1C2C3C6	CeCGSR_e_Park_wNC	CeCGSR_e_Park_wNC1
1	99,999	99,999	99,999	2,706	2,706

P2D2 Decel Pressure - C4 - Part 6

y/x	CeCGSR_e_Park_wNC2	CeCGSR_e_Park_wNC3	CeCGSR_e_Park_wNC4	CeCGSR_e_Park_wNC5	CeCGSR_e_Park_wNC6
1	1,994	2,706	99,999	2,706	2,706

P2D2 Decel Pressure - C4 - Part 7

y/x	CeCGSR_e_Park_wNC7	CeCGSR_e_Park_wNC1C2	CeCGSR_e_Park_wNC2C3	CeCGSR_e_Park_wNC2C4	CeCGSR_e_Park_wNC2C5
1	99,999	368	1,994	99,999	1,994

P2D2 Decel Pressure - C4 - Part 8

y/x	CeCGSR_e_Park_wNC2C6	CeCGSR_e_Park_wNC3C4	CeCGSR_e_Park_wNC3C5	CeCGSR_e_Park_wNC3C6	CeCGSR_e_Park_wNC4C5
1	1,994	99,999	2,706	2,706	99,999

P2D2 Decel Pressure - C4 - Part 9

y/x	CeCGSR_e_Park_wNC4C6	CeCGSR_e_Park_wNC1C2C3C6	CeCGSR_e_Reverse	CeCGSR_e_FirstLckd	CeCGSR_e_FirstFW

Initial Supporting table - P2D2 Decel Pressure - C4

1	99,999	99,999	99,999	368	368
P2D2 Decel Pressure - C4 - Part 10					
y/x	CeCGSR_e_SecondLckd	CeCGSR_e_SecondFW	CeCGSR_e_Third	CeCGSR_e_Fourth	CeCGSR_e_Fifth
1	99,999	99,999	99,999	99,999	2,706
P2D2 Decel Pressure - C4 - Part 11					
y/x	CeCGSR_e_Sixth	CeCGSR_e_Seventh	CeCGSR_e_Eighth	CeCGSR_e_Ninth	CeCGSR_e_Tenth
1	99,999	99,999	99,999	1,994	99,999
P2D2 Decel Pressure - C4 - Part 12					
y/x					
1					

Initial Supporting table - P2D2 Decel Pressure - C5

Description: clutch 5 command pressure threshold below which clutch 5 is considered released, such that, clutch 5 cannot carry enough clutch torque that would induce a vehicle deceleration above the design safety metric

Value Units: kPa
X Unit: command gear
Y Units: not applicable, no units, single row table f(command gear)

P2D2 Decel Pressure - C5 - Part 1

y/x	CeCGSR_e_NullForSched	CeCGSR_e_NeutralNoClutch	CeCGSR_e_NeutralC1	CeCGSR_e_NeutralC2	CeCGSR_e_NeutralC3
1	2,302	2,302	1,183	2,302	2,302

P2D2 Decel Pressure - C5 - Part 2

y/x	CeCGSR_e_NeutralC4	CeCGSR_e_NeutralC5	CeCGSR_e_NeutralC6	CeCGSR_e_NeutralC7	CeCGSR_e_NeutralC1C2
1	1,183	99,999	1,183	99,999	750

P2D2 Decel Pressure - C5 - Part 3

y/x	CeCGSR_e_NeutralC1C3	CeCGSR_e_NeutralC1C4	CeCGSR_e_NeutralC1C5	CeCGSR_e_NeutralC2C3	CeCGSR_e_NeutralC2C4
1	1,183	1,183	99,999	2,302	2,302

P2D2 Decel Pressure - C5 - Part 4

y/x	CeCGSR_e_NeutralC2C5	CeCGSR_e_NeutralC2C6	CeCGSR_e_NeutralC3C4	CeCGSR_e_NeutralC3C5	CeCGSR_e_NeutralC3C6
1	99,999	2,302	2,302	99,999	2,302

P2D2 Decel Pressure - C5 - Part 5

y/x	CeCGSR_e_NeutralC4C5	CeCGSR_e_NeutralC4C6	CeCGSR_e_NeutralC1C2C3C6	CeCGSR_e_Park_wNC	CeCGSR_e_Park_wNC1
1	99,999	2,302	99,999	2,302	1,183

P2D2 Decel Pressure - C5 - Part 6

y/x	CeCGSR_e_Park_wNC2	CeCGSR_e_Park_wNC3	CeCGSR_e_Park_wNC4	CeCGSR_e_Park_wNC5	CeCGSR_e_Park_wNC6
1	2,302	2,302	1,183	99,999	1,183

P2D2 Decel Pressure - C5 - Part 7

y/x	CeCGSR_e_Park_wNC7	CeCGSR_e_Park_wNC1C2	CeCGSR_e_Park_wNC2C3	CeCGSR_e_Park_wNC2C4	CeCGSR_e_Park_wNC2C5
1	99,999	750	2,302	2,302	99,999

P2D2 Decel Pressure - C5 - Part 8

y/x	CeCGSR_e_Park_wNC2C6	CeCGSR_e_Park_wNC3C4	CeCGSR_e_Park_wNC3C5	CeCGSR_e_Park_wNC3C6	CeCGSR_e_Park_wNC4C5
1	2,302	2,302	99,999	2,302	99,999

P2D2 Decel Pressure - C5 - Part 9

y/x	CeCGSR_e_Park_wNC4C6	CeCGSR_e_Park_wNC1C2C3C6	CeCGSR_e_Reverse	CeCGSR_e_FirstLckd	CeCGSR_e_FirstFW

Initial Supporting table - P2D2 Decel Pressure - C5

1	2,302	99,999	196	99,999	99,999
P2D2 Decel Pressure - C5 - Part 10					
y/x	CeCGSR_e_SecondLckd	CeCGSR_e_SecondFW	CeCGSR_e_Third	CeCGSR_e_Fourth	CeCGSR_e_Fifth
1	750	750	99,999	1,183	99,999
P2D2 Decel Pressure - C5 - Part 11					
y/x	CeCGSR_e_Sixth	CeCGSR_e_Seventh	CeCGSR_e_Eighth	CeCGSR_e_Ninth	CeCGSR_e_Tenth
1	99,999	99,999	99,999	99,999	2,302
P2D2 Decel Pressure - C5 - Part 12					
y/x					
1					

Initial Supporting table - P2D2 Decel Pressure - C6

Description: clutch 6 command pressure threshold below which clutch 6 is considered released, such that, clutch 6 cannot carry enough clutch torque that would induce a vehicle deceleration above the design safety metric

Value Units: kPa
X Unit: command gear
Y Units: not applicable, no units, single row table f(command gear)

P2D2 Decel Pressure - C6 - Part 1

y/x	CeCGSR_e_NullForSched	CeCGSR_e_NeutralNoClutch	CeCGSR_e_NeutralC1	CeCGSR_e_NeutralC2	CeCGSR_e_NeutralC3
1	666	666	666	248	666

P2D2 Decel Pressure - C6 - Part 2

y/x	CeCGSR_e_NeutralC4	CeCGSR_e_NeutralC5	CeCGSR_e_NeutralC6	CeCGSR_e_NeutralC7	CeCGSR_e_NeutralC1C2
1	666	666	99,999	99,999	248

P2D2 Decel Pressure - C6 - Part 3

y/x	CeCGSR_e_NeutralC1C3	CeCGSR_e_NeutralC1C4	CeCGSR_e_NeutralC1C5	CeCGSR_e_NeutralC2C3	CeCGSR_e_NeutralC2C4
1	666	666	666	248	248

P2D2 Decel Pressure - C6 - Part 4

y/x	CeCGSR_e_NeutralC2C5	CeCGSR_e_NeutralC2C6	CeCGSR_e_NeutralC3C4	CeCGSR_e_NeutralC3C5	CeCGSR_e_NeutralC3C6
1	142	99,999	666	666	99,999

P2D2 Decel Pressure - C6 - Part 5

y/x	CeCGSR_e_NeutralC4C5	CeCGSR_e_NeutralC4C6	CeCGSR_e_NeutralC1C2C3C6	CeCGSR_e_Park_wNC	CeCGSR_e_Park_wNC1
1	666	99,999	666	666	666

P2D2 Decel Pressure - C6 - Part 6

y/x	CeCGSR_e_Park_wNC2	CeCGSR_e_Park_wNC3	CeCGSR_e_Park_wNC4	CeCGSR_e_Park_wNC5	CeCGSR_e_Park_wNC6
1	248	666	666	666	99,999

P2D2 Decel Pressure - C6 - Part 7

y/x	CeCGSR_e_Park_wNC7	CeCGSR_e_Park_wNC1C2	CeCGSR_e_Park_wNC2C3	CeCGSR_e_Park_wNC2C4	CeCGSR_e_Park_wNC2C5
1	99,999	248	248	248	142

P2D2 Decel Pressure - C6 - Part 8

y/x	CeCGSR_e_Park_wNC2C6	CeCGSR_e_Park_wNC3C4	CeCGSR_e_Park_wNC3C5	CeCGSR_e_Park_wNC3C6	CeCGSR_e_Park_wNC4C5
1	99,999	666	666	99,999	666

P2D2 Decel Pressure - C6 - Part 9

y/x	CeCGSR_e_Park_wNC4C6	CeCGSR_e_Park_wNC1C2C3C6	CeCGSR_e_Reverse	CeCGSR_e_FirstLckd	CeCGSR_e_FirstFW

Initial Supporting table - P2D2 Decel Pressure - C6

1	99,999	666	99,999	142	142
P2D2 Decel Pressure - C6 - Part 10					
y/x	CeCGSR_e_SecondLckd	CeCGSR_e_SecondFW	CeCGSR_e_Third	CeCGSR_e_Fourth	CeCGSR_e_Fifth
1	248	248	666	99,999	99,999
P2D2 Decel Pressure - C6 - Part 11					
y/x	CeCGSR_e_Sixth	CeCGSR_e_Seventh	CeCGSR_e_Eighth	CeCGSR_e_Ninth	CeCGSR_e_Tenth
1	99,999	99,999	99,999	99,999	99,999
P2D2 Decel Pressure - C6 - Part 12					
y/x					
1					

Initial Supporting table - P2D2 Decel Pressure - C7

Description: clutch 7 command pressure threshold below which clutch 7 is considered released, such that, clutch 7 cannot carry enough clutch torque that would induce a vehicle deceleration above the design safety metric

Value Units: kPa
X Unit: command gear
Y Units: not applicable, no units, single row table f(command gear)

P2D2 Decel Pressure - C7 - Part 1

y/x	CeCGSR_e_NullForSched	CeCGSR_e_NeutralNoClutch	CeCGSR_e_NeutralC1	CeCGSR_e_NeutralC2	CeCGSR_e_NeutralC3
1	99,999	99,999	99,999	99,999	99,999

P2D2 Decel Pressure - C7 - Part 2

y/x	CeCGSR_e_NeutralC4	CeCGSR_e_NeutralC5	CeCGSR_e_NeutralC6	CeCGSR_e_NeutralC7	CeCGSR_e_NeutralC1C2
1	99,999	99,999	99,999	99,999	99,999

P2D2 Decel Pressure - C7 - Part 3

y/x	CeCGSR_e_NeutralC1C3	CeCGSR_e_NeutralC1C4	CeCGSR_e_NeutralC1C5	CeCGSR_e_NeutralC2C3	CeCGSR_e_NeutralC2C4
1	99,999	99,999	99,999	99,999	99,999

P2D2 Decel Pressure - C7 - Part 4

y/x	CeCGSR_e_NeutralC2C5	CeCGSR_e_NeutralC2C6	CeCGSR_e_NeutralC3C4	CeCGSR_e_NeutralC3C5	CeCGSR_e_NeutralC3C6
1	99,999	99,999	99,999	99,999	99,999

P2D2 Decel Pressure - C7 - Part 5

y/x	CeCGSR_e_NeutralC4C5	CeCGSR_e_NeutralC4C6	CeCGSR_e_NeutralC1C2C3C6	CeCGSR_e_Park_wNC	CeCGSR_e_Park_wNC1
1	99,999	99,999	99,999	99,999	99,999

P2D2 Decel Pressure - C7 - Part 6

y/x	CeCGSR_e_Park_wNC2	CeCGSR_e_Park_wNC3	CeCGSR_e_Park_wNC4	CeCGSR_e_Park_wNC5	CeCGSR_e_Park_wNC6
1	99,999	99,999	99,999	99,999	99,999

P2D2 Decel Pressure - C7 - Part 7

y/x	CeCGSR_e_Park_wNC7	CeCGSR_e_Park_wNC1C2	CeCGSR_e_Park_wNC2C3	CeCGSR_e_Park_wNC2C4	CeCGSR_e_Park_wNC2C5
1	99,999	99,999	99,999	99,999	99,999

P2D2 Decel Pressure - C7 - Part 8

y/x	CeCGSR_e_Park_wNC2C6	CeCGSR_e_Park_wNC3C4	CeCGSR_e_Park_wNC3C5	CeCGSR_e_Park_wNC3C6	CeCGSR_e_Park_wNC4C5
1	99,999	99,999	99,999	99,999	99,999

P2D2 Decel Pressure - C7 - Part 9

y/x	CeCGSR_e_Park_wNC4C6	CeCGSR_e_Park_wNC1C2C3C6	CeCGSR_e_Reverse	CeCGSR_e_FirstLckd	CeCGSR_e_FirstFW

Initial Supporting table - P2D2 Decel Pressure - C7

1	99,999	99,999	99,999	99,999	99,999

P2D2 Decel Pressure - C7 - Part 10

y/x	CeCGSR_e_SecondLckd	CeCGSR_e_SecondFW	CeCGSR_e_Third	CeCGSR_e_Fourth	CeCGSR_e_Fifth
1	99,999	99,999	99,999	99,999	99,999

P2D2 Decel Pressure - C7 - Part 11

y/x	CeCGSR_e_Sixth	CeCGSR_e_Seventh	CeCGSR_e_Eighth	CeCGSR_e_Ninth	CeCGSR_e_Tenth
1	99,999	99,999	99,999	99,999	99,999

P2D2 Decel Pressure - C7 - Part 12

y/x					
1					

Initial Supporting table - Park Inhibit Solenoid Override Line Pressure

Description:

Value Units: kPa
X Unit: Deg C

y/x	-40.00	-20.00	0.00	20.00	130.00
1.00	2,000.00	2,000.00	2,000.00	2,000.00	2,000.00

Initial Supporting table - Pump Out Available Transition Time

Description:

Value Units: Seconds
X Unit: Deg C

y/x	-40.00	-20.00	0.00	20.00	130.00
1.00	0.05	0.02	0.02	0.02	0.02

Initial Supporting table - speed sensor directional rationalit enable calibration

Description: speed sensor directional rationality enable calibration

Value Units: Boolean
X Unit: direction commanded
 Units: unitless

y/x	CeCGSR_FwdCmded	CeCGSR_NeutCmded	CeCGSR_RvrsCmded	CeCGSR_ParkCmded
1	1	1	1	1

Initial Supporting table - transmission fluid temperature warm up time

Description:

Value Units: transmission fluid temperature normal warn up time, seconds
X Unit: transmission fluid temperature at controller power up, °C

y/x	-40.00	-30.00	-20.00	0.00	20.00
1	1,800.0	1,400.0	1,000.0	500.0	10.0

Initial Supporting table - P0606_Last Seed Timeout f(Loop Time)

Description: The max time for the Last Seed Timeout as a function of operating loop time sequence.

P0606_Last Seed Timeout f(Loop Time) - Part 1

y/x	CePISR_e_2p5msSeq	CePISR_e_3p125msSeq	CePISR_e_5msSeq	CePISR_e_6p25msSeq	CePISR_e_10msSeq	CePISR_e_12p5msSeq	CePISR_e_20msSeq	CePISR_e_25msSeq
1	200.000	200.000	200.000	200.000	200.000	200.000	200.000	200.000

P0606_Last Seed Timeout f(Loop Time) - Part 2

y/x	CePISR_e_40msSeq	CePISR_e_50msSeq	CePISR_e_80msSeq	CePISR_e_100msSeq	CePISR_e_250msSeq	CePISR_e_EventA_Seq	CePISR_e_EventB_Seq	CePISR_e_EventC_Seq
1	200.000	200.000	200.000	500.000	1,000.000	8,191.875	8,191.875	8,191.875

Initial Supporting table - P0606_PSW Sequence Fail f(Loop Time)

Description: Fail threshold for PSW per operating loop.

P0606_PSW Sequence Fail f(Loop Time) - Part 1

y/x	CePISR_e_2p5msSeq	CePISR_e_3p125msSeq	CePISR_e_5msSeq	CePISR_e_6p25msSeq	CePISR_e_10msSeq	CePISR_e_12p5msSeq	CePISR_e_20msSeq	CePISR_e_25msSeq
1	2	2	2	2	2	2	2	2

P0606_PSW Sequence Fail f(Loop Time) - Part 2

y/x	CePISR_e_40msSeq	CePISR_e_50msSeq	CePISR_e_80msSeq	CePISR_e_100msSeq	CePISR_e_250msSeq	CePISR_e_EventA_Seq	CePISR_e_EventB_Seq	CePISR_e_EventC_Seq
1	2	1	1	1	1	2	2	2

Initial Supporting table - P0606_PSW Sequence Sample f(Loop Time)

Description: Sample threshold for PSW per operating loop.

P0606_PSW Sequence Sample f(Loop Time) - Part 1

y/x	CePISR_e_2p5msSeq	CePISR_e_3p125msSeq	CePISR_e_5msSeq	CePISR_e_6p25msSeq	CePISR_e_10msSeq	CePISR_e_12p5msSeq	CePISR_e_20msSeq	CePISR_e_25msSeq
1	4	4	4	4	4	4	4	4

P0606_PSW Sequence Sample f(Loop Time) - Part 2

y/x	CePISR_e_40msSeq	CePISR_e_50msSeq	CePISR_e_80msSeq	CePISR_e_100msSeq	CePISR_e_250msSeq	CePISR_e_EventA_Seq	CePISR_e_EventB_Seq	CePISR_e_EventC_Seq
1	4	2	2	2	2	3	3	3

Initial Supporting table - 10 speed transmission clutch definition and gear state to clutch map

Description: indicates clutch definition and gear state verses applied and released clutches for 10 speed transmission

Value Units: applied or released
X Unit: clutch
Y Units: gear index Y axis, actual gear column 1

y/x	1	2	3	4	5	6	7	8
1		C1 = C123456R	C2 = C1289-10R	C3 = C234579-10	C4 = C234678-10R	C5 = C1356789	C6 = C456789-10R	C7 = OWC12
2	1st gear braking	applied	applied	released	released	applied	released	applied
3	1st gear free wheel	applied	applied	released	released	applied	released	released
4	2nd gear braking	applied	applied	applied	applied	released	released	applied
5	2nd gear free wheel	applied	applied	applied	applied	released	released	released
6	3rd gear	applied	released	applied	applied	applied	released	released
7	4th gear	applied	released	applied	applied	released	applied	released
8	5th gear	applied	released	applied	released	applied	applied	released
9	6th gear	applied	released	released	released	applied	applied	released
10	7th gear	released	released	applied	applied	applied	applied	released
11	8th gear	released	applied	released	applied	applied	applied	released
12	9th gear	released	applied	applied	released	applied	applied	released
13	10th gear	released	applied	applied	applied	released	applied	released
14	reverse gear	applied	applied	released	applied	released	released	released

Initial Supporting table - 9 speed transmission clutch definition and gear state to clutch map

Description: indicates clutch definition and gear state verses applied and released clutches for 9 speed transmission

Value Units: applied or released
X Unit: clutch
Y Units: gear index Y axis, actual gear column 1

y/x	1	2	3	4	5	6	7	8
1		C1 = CB123456	C2 = C6789	C3 = CB1R	C4 = CB29	C5 = CB38	C6 = C4	C7 = C57R
2	1st gear braking	applied	released	applied	released	released	released	released
3	1st gear free wheel	applied	released	released	released	released	released	released
4	2nd gear	applied	released	released	applied	released	released	released
5	3rd gear	applied	released	released	released	applied	released	released
6	4th gear	applied	released	released	released	released	applied	released
7	5th gear	applied	released	released	released	released	released	applied
8	6th gear	applied	applied	released	released	released	released	released
9	7th gear	released	applied	released	released	released	released	applied
10	8th gear	released	applied	released	released	applied	released	released
11	9th gear	released	applied	released	applied	released	released	released
12	reverse gear	released	released	applied	released	released	released	applied

Initial Supporting table - engine speed time for transmission hydraulic pressure available

Description: time needed for engine speed to trigger "transmission hydraulic pressure available"

Value Units: seconds
X Unit: transmission fluid temperature °C

y/x	-40.00	-30.00	-20.00	0.00	40.00
1	1.525	1.500	0.981	0.938	0.800

Initial Supporting table - engine speed time for transmission hydraulic pressure available

Description: time needed for engine speed to trigger "transmission hydraulic pressure available"

Value Units: seconds
X Unit: °C

y/x	-40.00	-30.00	-20.00	0.00	40.00
1	1.525	1.500	0.981	0.938	0.800

Initial Supporting table - intermediate speed sensor 1 or 2 predicted direction

Description: intermediate speed sensor 1 or 2 predicted direction

Value Units: predicted direction: forward, reverse, unknown
X Unit: attained gear
Y Units: intermediate speed sensor 1 or 2

intermediate speed sensor 1 or 2 predicted direction - Part 1

y/x	CeCGSR_e_CR_NullForSched	CeCGSR_e_CR_Neutral	CeCGSR_e_CR_Park
CeTSRR_e_C2C_ClchSpdSnsr1	CeTNSR_e_DirectionUnknown	CeTNSR_e_DirectionUnknown	CeTNSR_e_DirectionUnknown
CeTSRR_e_C2C_ClchSpdSnsr2	CeTNSR_e_DirectionUnknown	CeTNSR_e_DirectionUnknown	CeTNSR_e_DirectionUnknown

intermediate speed sensor 1 or 2 predicted direction - Part 2

y/x	CeCGSR_e_CR_Reverse	CeCGSR_e_CR_First	CeCGSR_e_CR_Second
CeTSRR_e_C2C_ClchSpdSnsr1	CeTNSR_e_DirectionUnknown	CeTNSR_e_DirectionUnknown	CeTNSR_e_DirectionUnknown
CeTSRR_e_C2C_ClchSpdSnsr2	CeTNSR_e_DirectionUnknown	CeTNSR_e_DirectionUnknown	CeTNSR_e_DirectionUnknown

intermediate speed sensor 1 or 2 predicted direction - Part 3

y/x	CeCGSR_e_CR_Third	CeCGSR_e_CR_Fourth	CeCGSR_e_CR_Fifth
CeTSRR_e_C2C_ClchSpdSnsr1	CeTNSR_e_DirectionUnknown	CeTNSR_e_DirectionUnknown	CeTNSR_e_DirectionUnknown
CeTSRR_e_C2C_ClchSpdSnsr2	CeTNSR_e_DirectionForward	CeTNSR_e_DirectionForward	CeTNSR_e_DirectionForward

intermediate speed sensor 1 or 2 predicted direction - Part 4

y/x	CeCGSR_e_CR_Sixth	CeCGSR_e_CR_Seventh	CeCGSR_e_CR_Eighth
CeTSRR_e_C2C_ClchSpdSnsr1	CeTNSR_e_DirectionUnknown	CeTNSR_e_DirectionForward	CeTNSR_e_DirectionForward
CeTSRR_e_C2C_ClchSpdSnsr2	CeTNSR_e_DirectionForward	CeTNSR_e_DirectionForward	CeTNSR_e_DirectionForward

intermediate speed sensor 1 or 2 predicted direction - Part 5

y/x	CeCGSR_e_CR_Ninth	CeCGSR_e_CR_Tenth	
CeTSRR_e_C2C_ClchSpdSnsr1	CeTNSR_e_DirectionForward	CeTNSR_e_DirectionForward	
CeTSRR_e_C2C_ClchSpdSnsr2	CeTNSR_e_DirectionForward	CeTNSR_e_DirectionForward	

Initial Supporting table - NumClchTieUp

Description: NumClchTieUp

Value Units: minimum # of clutches
X Unit: command gear or attained gear
Y Units: not applicable, no units, single row table f(gear)

NumClchTieUp - Part 1

y/x	CeCGSR_e_NullForSched	CeCGSR_e_NeutralNoClutch	CeCGSR_e_NeutralC1	CeCGSR_e_NeutralC2	CeCGSR_e_NeutralC3	CeCGSR_e_NeutralC4	CeCGSR_e_NeutralC5
1	5	5	4	4	4	4	4

NumClchTieUp - Part 2

y/x	CeCGSR_e_NeutralC6	CeCGSR_e_NeutralC7	CeCGSR_e_NeutralC1C2	CeCGSR_e_NeutralC1C3	CeCGSR_e_NeutralC1C4	CeCGSR_e_NeutralC1C5	CeCGSR_e_NeutralC2C3
1	4	4	3	3	3	3	3

NumClchTieUp - Part 3

y/x	CeCGSR_e_NeutralC2C4	CeCGSR_e_NeutralC2C5	CeCGSR_e_NeutralC2C6	CeCGSR_e_NeutralC3C4	CeCGSR_e_NeutralC3C5	CeCGSR_e_NeutralC3C6	CeCGSR_e_NeutralC4C5
1	3	3	3	3	3	3	3

NumClchTieUp - Part 4

y/x	CeCGSR_e_NeutralC4C6	CeCGSR_e_NeutralC1C2C3C6	CeCGSR_e_Park_wNC	CeCGSR_e_Park_wNC1	CeCGSR_e_Park_wNC2	CeCGSR_e_Park_wNC3	CeCGSR_e_Park_wNC4
1	3	1	5	4	4	4	4

NumClchTieUp - Part 5

y/x	CeCGSR_e_Park_wNC5	CeCGSR_e_Park_wNC6	CeCGSR_e_Park_wNC7	CeCGSR_e_Park_wNC1C2	CeCGSR_e_Park_wNC2C3	CeCGSR_e_Park_wNC2C4	CeCGSR_e_Park_wNC2C5
1	4	4	4	3	3	3	3

NumClchTieUp - Part 6

y/x	CeCGSR_e_Park_wNC2C6	CeCGSR_e_Park_wNC3C4	CeCGSR_e_Park_wNC3C5	CeCGSR_e_Park_wNC3C6	CeCGSR_e_Park_wNC4C5	CeCGSR_e_Park_wNC4C6	CeCGSR_e_Park_wNC1C2C3C6
1	3	3	3	3	3	3	1

NumClchTieUp - Part 7

y/x	CeCGSR_e_Reverse	CeCGSR_e_FirstLckd	CeCGSR_e_FirstFW	CeCGSR_e_SecondLckd	CeCGSR_e_SecondFW	CeCGSR_e_Third	CeCGSR_e_Fourth
1	1	1	2	1	2	1	1

NumClchTieUp - Part 8

y/x	CeCGSR_e_Fifth	CeCGSR_e_Sixth	CeCGSR_e_Seventh	CeCGSR_e_Eighth	CeCGSR_e_Ninth	CeCGSR_e_Tenth	

Initial Supporting table - NumClchTieUp

1	1	1	1	1	1	1	

Initial Supporting table - P0722 OSS Direction Change Delay

Description:

Value Units: seconds
X Unit: DegC

y/x	-40	-20	20
1	5	3	1

Initial Supporting table - P0723 transmission engaged state time threshold

Description: time necessary after transmission engaged state indicates transmsision engaged to allow P0723 enable

Value Units: seconds
X Unit: transmission fluid temperature °C

y/x	-40.000	-20.000	20.000
1	5.000	3.000	1.000

Initial Supporting table - P176B delay to allow transmission input, intermediate and output speeds to stablize for fail evaluation

Description: delay to allow transmission input, intermediate and output speeds to stablize for fail evaluation

Value Units: seconds
X Unit: intermediate speed sensor select

y/x	CeTSRR_e_C2C_ClchSpdSnsr1	CeTSRR_e_C2C_ClchSpdSnsr2
1	0.500	0.500

Initial Supporting table - P176B holding clutch states

Description: inditaces when the clutch states allow transmission intermediate speed sensor evaluation, when rotating components can trigger speed sesnor, holding clutches will not allow evaluation while clutches not holding will allow evaluation

Value Units: TRUE or FALSE
X Unit: intermediate speed sensor select
Y Units: commanded gear

y/x	CeTSRR_e_C2C_ClchSpdSnsr1	CeTSRR_e_C2C_ClchSpdSnsr2
CeCGSR_e_CR_NullForSched	1	1
CeCGSR_e_CR_Neutral	1	1
CeCGSR_e_CR_Park	1	1
CeCGSR_e_CR_Reverse	1	1
CeCGSR_e_CR_First	1	1
CeCGSR_e_CR_Second	1	1
CeCGSR_e_CR_Third	1	0
CeCGSR_e_CR_Fourth	1	0
CeCGSR_e_CR_Fifth	1	0
CeCGSR_e_CR_Sixth	1	0
CeCGSR_e_CR_Seventh	0	0
CeCGSR_e_CR_Eighth	0	0
CeCGSR_e_CR_Ninth	0	0
CeCGSR_e_CR_Tenth	0	0

Initial Supporting table - P176B intermediate speed sensor fail count threshold

Description: P176B intermediate speed sensor fail count threshold

Value Units: fail counts
X Unit: intermediate speed sensor select

y/x	CeTSRR_e_C2C_ClchSpdSnsr1	CeTSRR_e_C2C_ClchSpdSnsr2
1	3	3

Initial Supporting table - P176B intermediate speed sensor fail time threshold

Description: P176B intermediate speed sensor fail time threshold

Value Units: seconds
X Unit: intermediate speed sensor select

y/x	CeTSRR_e_C2C_ClchSpdSnsr1	CeTSRR_e_C2C_ClchSpdSnsr2
1	1.500	1.500

Initial Supporting table - P176B minimum estimated transmission intermediate speed to enable fail evaluation

Description: minimum estimated transmission intermediate speed to enable fail evaluation, where estimate is based on transmission input speed / ratio calibration, where ratio calibration is either P176B ratio calibration when REVERSE or P176B ratio calibration when not REVERSE

Value Units: estimated transmission intermediate speed RPM
X Unit: intermediate speed sensor select

y/x	CeTSRR_e_C2C_ClchSpdSnsr1	CeTSRR_e_C2C_ClchSpdSnsr2
1	192.0	192.0

Initial Supporting table - P176B minimum transmission input speed to enable fail evaluation

Description: minimum transmission input speed to enable fail evaluation

Value Units: transmission input speed RPM
X Unit: intermediate speed sensor select

y/x	CeTSRR_e_C2C_ClchSpdSnsr1	CeTSRR_e_C2C_ClchSpdSnsr2
1	192.0	192.0

Initial Supporting table - P176B ratio calibration when not REVERSE

Description: used to estimate transmission input speed based on transmission intermediate speed when range is not REVERSE

Value Units: ratio
X Unit: commanded gear
Y Units: intermediate speed sensor select

y/x	CeTGRR_e_Gear1	CeTGRR_e_Gear2	CeTGRR_e_Gear3	CeTGRR_e_Gear4	CeTGRR_e_Gear5	CeTGRR_e_Gear6	CeTGRR_e_Gear7	CeTGRR_e_Gear8	CeTGRR_e_Gear9	CeTGRR_e_Gear10
CeTSRR_e_C2C_ClchSpdSnsr1	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.5596	0.4342	0.4342
CeTSRR_e_C2C_ClchSpdSnsr2	1.0000	1.0000	3.1250	1.7699	1.7699	1.3774	1.0000	0.8224	0.6382	0.6382

Initial Supporting table - P176B ratio calibration when REVERSE

Description: used to estimate transmission input speed based on transmission intermediate speed when range is REVERSE

Value Units: ratio
X Unit: intermediate speed sensor select

y/x	CeTSRR_e_C2C_ClchSpdSnsr1	CeTSRR_e_C2C_ClchSpdSnsr2
1	1.0000	1.0000

Initial Supporting table - P176C Enable Boolean

Description:

Value Units: Boolean

y/x	0	1
1	1	1

Initial Supporting table - P176C Fail Count Threshold

Description:

Value Units: Count

y/x	0	1
1	40	40

Initial Supporting table - P176C Fail Timer

Description:

Value Units: seconds
X Unit: intermediate speed sensor index

y/x	0	1
1	0	0

Initial Supporting table - P176D Boolean Enable

Description:

Value Units: Boolean
X Unit: Speed Sensor Index

y/x	0	1
1	1	1

Initial Supporting table - P176D Fail Count Threshold

Description:

Value Units: Count
X Unit: Speed Sensor Index

y/x	0	1
1	40	40

Initial Supporting table - P176D Fail Time Threshold

Description:

Value Units: seconds
X Unit: Speed Sensor Index

y/x	0	1
1	0	0

Initial Supporting table - P176D Voltage Fail Threshold

Description:

Value Units: Volts
X Unit: Speed Sensor Index

y/x	0	1
1	5	5

Initial Supporting table - P17C5 P17D3 intermediate speed sensor RPM

Description: P17C5 P17D3 intermediate speed sensor RPM at signal period transtion to enable fail time update

Value Units: intermediate speed sensor RPM
X Unit: intermediate speed sensor 1 or 2

y/x	0	1
1	350	225

Initial Supporting table - P17D6 delay to allow transmission input, intermediate and output speeds to stablize for fail evaluation

Description: delay to allow transmission input, intermediate and output speeds to stablize for fail evaluation

Value Units: seconds
X Unit: intermediate speed sensor select

y/x	CeTSRR_e_C2C_ClchSpdSnsr1	CeTSRR_e_C2C_ClchSpdSnsr2
1	0.500	0.500

Initial Supporting table - P17D6 holding clutch states

Description: inditaces when the clutch states allow transmission intermediate speed sensor evaluation, when rotating components can trigger speed sesnor, holding clutches will not allow evaluation while clutches not holding will allow evaluation

Value Units: TRUE or FALSE
X Unit: commanded gear
Y Units: intermediate speed sensor select

y/x	CeTSRR_e_C2C_ClchSpdSnsr1	CeTSRR_e_C2C_ClchSpdSnsr2
CeCGSR_e_CR_NullForSched	1	1
CeCGSR_e_CR_Neutral	1	1
CeCGSR_e_CR_Park	1	1
CeCGSR_e_CR_Reverse	1	1
CeCGSR_e_CR_First	1	1
CeCGSR_e_CR_Second	1	1
CeCGSR_e_CR_Third	1	0
CeCGSR_e_CR_Fourth	1	0
CeCGSR_e_CR_Fifth	1	0
CeCGSR_e_CR_Sixth	1	0
CeCGSR_e_CR_Seventh	0	0
CeCGSR_e_CR_Eighth	0	0
CeCGSR_e_CR_Ninth	0	0
CeCGSR_e_CR_Tenth	0	0

Initial Supporting table - P17D6 intermediate speed sensor fail count threshold

Description: P176B intermediate speed sensor fail count threshold

Value Units: fail counts
X Unit: intermediate speed sensor select

y/x	CeTSRR_e_C2C_ClchSpdSnsr1	CeTSRR_e_C2C_ClchSpdSnsr2
1	3	3

Initial Supporting table - P17D6 intermediate speed sensor fail RPM threshold

Description: P17D6 intermediate speed sensor fail RPM speed threshold

Value Units: RPM
X Unit: intermediate speed sensor select

y/x	CeTSRR_e_C2C_ClchSpdSnsr1	CeTSRR_e_C2C_ClchSpdSnsr2
1	100	100

Initial Supporting table - P17D6 intermediate speed sensor fail time threshold

Description: P17D6 intermediate speed sensor fail time threshold

Value Units: seconds
X Unit: intermediate speed sensor select

y/x	CeTSRR_e_C2C_ClchSpdSnsr1	CeTSRR_e_C2C_ClchSpdSnsr2
1	1.500	1.500

Initial Supporting table - P17D6 minimum estimated transmission intermediate speed to enable fail evaluation

Description: minimum estimated transmission intermediate speed to enable fail evaluation, where estimate is based on transmission input speed / ratio calibration, where ratio calibration is either P17D6 ratio calibration when REVERSE or P17D6 ratio calibration when not REVERSE

Value Units: estimated transmission intermediate speed RPM
X Unit: intermediate speed sensor select

y/x	CeTSRR_e_C2C_ClchSpdSnsr1	CeTSRR_e_C2C_ClchSpdSnsr2
1	192	192

Initial Supporting table - P17D6 minimum transmission input speed to enable fail evaluation

Description: minimum transmission input speed to enable fail evaluation

Value Units: transmission input speed RPM
X Unit: intermediate speed sensor select

y/x	CeTSRR_e_C2C_ClchSpdSnsr1	CeTSRR_e_C2C_ClchSpdSnsr2
1	192	192

Initial Supporting table - P17D6 ratio calibration when not REVERSE

Description: used to estimate transmission input speed based on transmission intermediate speed when range is not REVERSE

Value Units: ratio
X Unit: commanded gear
Y Units: intermediate speed sensor select

y/x	CeTGRR_e_Gear1	CeTGRR_e_Gear2	CeTGRR_e_Gear3	CeTGRR_e_Gear4	CeTGRR_e_Gear5	CeTGRR_e_Gear6	CeTGRR_e_Gear7	CeTGRR_e_Gear8	CeTGRR_e_Gear9	CeTGRR_e_Gear10
CeTSRR_e_C2C_ClchSpdSnsr1	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.5596	0.4342	0.4342
CeTSRR_e_C2C_ClchSpdSnsr2	1.0000	1.0000	3.1250	1.7699	1.7699	1.3774	1.0000	0.8224	0.6382	0.6382

Initial Supporting table - P17D6 ratio calibration when REVERSE

Description: used to estimate transmission input speed based on transmission intermediate speed when range is REVERSE

Value Units: ratio

y/x	CeTSRR_e_C2C_ClchSpdSnsr1	CeTSRR_e_C2C_ClchSpdSnsr2
1	1.0000	1.0000

Initial Supporting table - P2797 hydraulic pressure delay

Description: Time to delay the initial x of y counter due to hydraulic transients. Thresholds are a function of transmission fluid temperature. Horizontal axis is transmission fluid temperature (DegC) and table output is delay time (seconds).

Value Units: delay time seconds
X Unit: transmission fluid temperature DegC

y/x	-40	0	20	30	40	50	60
1	0.090	0.090	0.080	0.050	0.050	0.050	0.050

Initial Supporting table - P2797 predicted turbine speed error

Description: Predicted turbine speed vs actual turbine speed error. Thresholds are a function of engine speed and transmission fliud temperature. Diagnostic is considered failing above these values. Table vertical axis is engine speed (RPM), horizontal axis is transmission fluid temperature (DegC) and table output is predicted turbine speed error (RPM).

Value Units: turbine speed RPM error
X Unit: transmission fluid temperature DegC
Y Units: engine speed RPM

y/x	-40	0	10	20	40
0	300	300	300	300	300
500	300	300	300	300	300
1,100	300	300	300	300	300
1,500	300	300	300	300	300
2,500	300	300	300	300	300

Initial Supporting table - P2817 TCC stuck off fail TCC slip speed

Description: TCC stuck off slip speed fail threshold when TCC is in ON mode (controlled slip mode)

Value Units: RPM
X Unit: engine torque Nm

y/x	0.00	64.00	128.00	192.00	256.00	320.00	384.00	448.00	512.00
1	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0

Initial Supporting table - P2D2 Cltch Slip Sum

Description:

Value Units: rate of change of output rpm (dn) per 25 milliseconds
X Unit: % brake pedal position
Y Units: not applicable, no units, single row table f(brake pedal position)

y/x	0	15	20	30	35	50	75	88	100
1	-4	-4	-4	-4	-4	-4	-4	-4	-4

Initial Supporting table - P2D2 Decel Pressure - C1

Description: clutch 1 command pressure threshold below which clutch 1 is considered released, such that, clutch 1 cannot carry enough clutch torque that would induce a vehicle deceleration above the design safety metric

Value Units: kPa
X Unit: command gear
Y Units: not applicable, no units, single row table f(command gear)

P2D2 Decel Pressure - C1 - Part 1

y/x	CeCGSR_e_NullForSched	CeCGSR_e_NeutralNoClutch	CeCGSR_e_NeutralC1	CeCGSR_e_NeutralC2	CeCGSR_e_NeutralC3
1	446.5	446.5	99,999.0	294.6	446.5

P2D2 Decel Pressure - C1 - Part 2

y/x	CeCGSR_e_NeutralC4	CeCGSR_e_NeutralC5	CeCGSR_e_NeutralC6	CeCGSR_e_NeutralC7	CeCGSR_e_NeutralC1C2
1	446.5	446.5	446.5	99,999.0	99,999.0

P2D2 Decel Pressure - C1 - Part 3

y/x	CeCGSR_e_NeutralC1C3	CeCGSR_e_NeutralC1C4	CeCGSR_e_NeutralC1C5	CeCGSR_e_NeutralC2C3	CeCGSR_e_NeutralC2C4
1	99,999.0	99,999.0	99,999.0	294.6	294.6

P2D2 Decel Pressure - C1 - Part 4

y/x	CeCGSR_e_NeutralC2C5	CeCGSR_e_NeutralC2C6	CeCGSR_e_NeutralC3C4	CeCGSR_e_NeutralC3C5	CeCGSR_e_NeutralC3C6
1	287.1	294.6	446.5	446.5	446.5

P2D2 Decel Pressure - C1 - Part 5

y/x	CeCGSR_e_NeutralC4C5	CeCGSR_e_NeutralC4C6	CeCGSR_e_NeutralC1C2C3C6	CeCGSR_e_Park_wNC	CeCGSR_e_Park_wNC1
1	446.5	446.5	446.5	446.5	99,999.0

P2D2 Decel Pressure - C1 - Part 6

y/x	CeCGSR_e_Park_wNC2	CeCGSR_e_Park_wNC3	CeCGSR_e_Park_wNC4	CeCGSR_e_Park_wNC5	CeCGSR_e_Park_wNC6
1	294.6	446.5	446.5	446.5	446.5

P2D2 Decel Pressure - C1 - Part 7

y/x	CeCGSR_e_Park_wNC7	CeCGSR_e_Park_wNC1C2	CeCGSR_e_Park_wNC2C3	CeCGSR_e_Park_wNC2C4	CeCGSR_e_Park_wNC2C5
1	99,999.0	99,999.0	294.6	294.6	287.1

P2D2 Decel Pressure - C1 - Part 8

y/x	CeCGSR_e_Park_wNC2C6	CeCGSR_e_Park_wNC3C4	CeCGSR_e_Park_wNC3C5	CeCGSR_e_Park_wNC3C6	CeCGSR_e_Park_wNC4C5
1	294.6	446.5	446.5	446.5	446.5

P2D2 Decel Pressure - C1 - Part 9

y/x	CeCGSR_e_Park_wNC4C6	CeCGSR_e_Park_wNC1C2C3C6	CeCGSR_e_Reverse	CeCGSR_e_FirstLckd	CeCGSR_e_FirstFW

Initial Supporting table - P2D2 Decel Pressure - C1

1	446.5	446.5	99,999.0	99,999.0	99,999.0

P2D2 Decel Pressure - C1 - Part 10

y/x	CeCGSR_e_SecondLckd	CeCGSR_e_SecondFW	CeCGSR_e_Third	CeCGSR_e_Fourth	CeCGSR_e_Fifth
1	99,999.0	99,999.0	99,999.0	99,999.0	99,999.0

P2D2 Decel Pressure - C1 - Part 11

y/x	CeCGSR_e_Sixth	CeCGSR_e_Seventh	CeCGSR_e_Eighth	CeCGSR_e_Ninth	CeCGSR_e_Tenth
1	99,999.0	446.5	287.1	273.6	294.6

P2D2 Decel Pressure - C1 - Part 12

y/x					
1					

Initial Supporting table - P2D2 Decel Pressure - C2

Description: clutch 2 command pressure threshold below which clutch 2 is considered released, such that, clutch 2 cannot carry enough clutch torque that would induce a vehicle deceleration above the design safety metric

Value Units: kPa
X Unit: command gear
Y Units: not applicable, no units, single row table f(command gear)

P2D2 Decel Pressure - C2 - Part 1

y/x	CeCGSR_e_NullForSched	CeCGSR_e_NeutralNoClutch	CeCGSR_e_NeutralC1	CeCGSR_e_NeutralC2	CeCGSR_e_NeutralC3
1	662	662	352	99,999	662

P2D2 Decel Pressure - C2 - Part 2

y/x	CeCGSR_e_NeutralC4	CeCGSR_e_NeutralC5	CeCGSR_e_NeutralC6	CeCGSR_e_NeutralC7	CeCGSR_e_NeutralC1C2
1	662	662	662	99,999	99,999

P2D2 Decel Pressure - C2 - Part 3

y/x	CeCGSR_e_NeutralC1C3	CeCGSR_e_NeutralC1C4	CeCGSR_e_NeutralC1C5	CeCGSR_e_NeutralC2C3	CeCGSR_e_NeutralC2C4
1	352	352	352	99,999	99,999

P2D2 Decel Pressure - C2 - Part 4

y/x	CeCGSR_e_NeutralC2C5	CeCGSR_e_NeutralC2C6	CeCGSR_e_NeutralC3C4	CeCGSR_e_NeutralC3C5	CeCGSR_e_NeutralC3C6
1	99,999	99,999	662	662	662

P2D2 Decel Pressure - C2 - Part 5

y/x	CeCGSR_e_NeutralC4C5	CeCGSR_e_NeutralC4C6	CeCGSR_e_NeutralC1C2C3C6	CeCGSR_e_Park_wNC	CeCGSR_e_Park_wNC1
1	662	662	99,999	662	352

P2D2 Decel Pressure - C2 - Part 6

y/x	CeCGSR_e_Park_wNC2	CeCGSR_e_Park_wNC3	CeCGSR_e_Park_wNC4	CeCGSR_e_Park_wNC5	CeCGSR_e_Park_wNC6
1	99,999	662	662	662	662

P2D2 Decel Pressure - C2 - Part 7

y/x	CeCGSR_e_Park_wNC7	CeCGSR_e_Park_wNC1C2	CeCGSR_e_Park_wNC2C3	CeCGSR_e_Park_wNC2C4	CeCGSR_e_Park_wNC2C5
1	99,999	99,999	99,999	99,999	99,999

P2D2 Decel Pressure - C2 - Part 8

y/x	CeCGSR_e_Park_wNC2C6	CeCGSR_e_Park_wNC3C4	CeCGSR_e_Park_wNC3C5	CeCGSR_e_Park_wNC3C6	CeCGSR_e_Park_wNC4C5
1	99,999	662	662	662	662

P2D2 Decel Pressure - C2 - Part 9

y/x	CeCGSR_e_Park_wNC4C6	CeCGSR_e_Park_wNC1C2C3C6	CeCGSR_e_Reverse	CeCGSR_e_FirstLckd	CeCGSR_e_FirstFW

Initial Supporting table - P2D2 Decel Pressure - C2

1	662	99,999	99,999	99,999	99,999
P2D2 Decel Pressure - C2 - Part 10					
y/x	CeCGSR_e_SecondLckd	CeCGSR_e_SecondFW	CeCGSR_e_Third	CeCGSR_e_Fourth	CeCGSR_e_Fifth
1	99,999	99,999	352	228	252
P2D2 Decel Pressure - C2 - Part 11					
y/x	CeCGSR_e_Sixth	CeCGSR_e_Seventh	CeCGSR_e_Eighth	CeCGSR_e_Ninth	CeCGSR_e_Tenth
1	231	662	99,999	99,999	99,999
P2D2 Decel Pressure - C2 - Part 12					
y/x					
1					

Initial Supporting table - P2D2 Decel Pressure - C3

Description: clutch 3 command pressure threshold below which clutch 3 is considered released, such that, clutch 3 cannot carry enough clutch torque that would induce a vehicle deceleration above the design safety metric

Value Units: kPa
X Unit: command gear
Y Units: not applicable, no units, single row table f(command gear)

P2D2 Decel Pressure - C3 - Part 1

y/x	CeCGSR_e_NullForSched	CeCGSR_e_NeutralNoClutch	CeCGSR_e_NeutralC1	CeCGSR_e_NeutralC2	CeCGSR_e_NeutralC3
1	99,999	99,999	99,999	99,999	99,999

P2D2 Decel Pressure - C3 - Part 2

y/x	CeCGSR_e_NeutralC4	CeCGSR_e_NeutralC5	CeCGSR_e_NeutralC6	CeCGSR_e_NeutralC7	CeCGSR_e_NeutralC1C2
1	99,999	99,999	1,652	99,999	99,999

P2D2 Decel Pressure - C3 - Part 3

y/x	CeCGSR_e_NeutralC1C3	CeCGSR_e_NeutralC1C4	CeCGSR_e_NeutralC1C5	CeCGSR_e_NeutralC2C3	CeCGSR_e_NeutralC2C4
1	99,999	99,999	99,999	99,999	99,999

P2D2 Decel Pressure - C3 - Part 4

y/x	CeCGSR_e_NeutralC2C5	CeCGSR_e_NeutralC2C6	CeCGSR_e_NeutralC3C4	CeCGSR_e_NeutralC3C5	CeCGSR_e_NeutralC3C6
1	99,999	1,652	99,999	99,999	99,999

P2D2 Decel Pressure - C3 - Part 5

y/x	CeCGSR_e_NeutralC4C5	CeCGSR_e_NeutralC4C6	CeCGSR_e_NeutralC1C2C3C6	CeCGSR_e_Park_wNC	CeCGSR_e_Park_wNC1
1	99,999	1,652	99,999	99,999	99,999

P2D2 Decel Pressure - C3 - Part 6

y/x	CeCGSR_e_Park_wNC2	CeCGSR_e_Park_wNC3	CeCGSR_e_Park_wNC4	CeCGSR_e_Park_wNC5	CeCGSR_e_Park_wNC6
1	99,999	99,999	99,999	99,999	1,652

P2D2 Decel Pressure - C3 - Part 7

y/x	CeCGSR_e_Park_wNC7	CeCGSR_e_Park_wNC1C2	CeCGSR_e_Park_wNC2C3	CeCGSR_e_Park_wNC2C4	CeCGSR_e_Park_wNC2C5
1	99,999	1,652	99,999	99,999	99,999

P2D2 Decel Pressure - C3 - Part 8

y/x	CeCGSR_e_Park_wNC2C6	CeCGSR_e_Park_wNC3C4	CeCGSR_e_Park_wNC3C5	CeCGSR_e_Park_wNC3C6	CeCGSR_e_Park_wNC4C5
1	1,652	99,999	99,999	99,999	1,652

P2D2 Decel Pressure - C3 - Part 9

y/x	CeCGSR_e_Park_wNC4C6	CeCGSR_e_Park_wNC1C2C3C6	CeCGSR_e_Reverse	CeCGSR_e_FirstLckd	CeCGSR_e_FirstFW

Initial Supporting table - P2D2 Decel Pressure - C3

1	1,652	99,999	193	99,999	99,999

P2D2 Decel Pressure - C3 - Part 10

y/x	CeCGSR_e_SecondLckd	CeCGSR_e_SecondFW	CeCGSR_e_Third	CeCGSR_e_Fourth	CeCGSR_e_Fifth
1	99,999	99,999	99,999	99,999	99,999

P2D2 Decel Pressure - C3 - Part 11

y/x	CeCGSR_e_Sixth	CeCGSR_e_Seventh	CeCGSR_e_Eighth	CeCGSR_e_Ninth	CeCGSR_e_Tenth
1	896	99,999	1,652	99,999	99,999

P2D2 Decel Pressure - C3 - Part 12

y/x					
1					

Initial Supporting table - P2D2 Decel Pressure - C4

Description: clutch 4 command pressure threshold below which clutch 4 is considered released, such that, clutch 4 cannot carry enough clutch torque that would induce a vehicle deceleration above the design safety metric

Value Units: kPa
X Unit: command gear
Y Units: not applicable, no units, single row table f(command gear)

P2D2 Decel Pressure - C4 - Part 1

y/x	CeCGSR_e_NullForSched	CeCGSR_e_NeutralNoClutch	CeCGSR_e_NeutralC1	CeCGSR_e_NeutralC2	CeCGSR_e_NeutralC3
1	2,706	2,706	2,706	1,994	2,706

P2D2 Decel Pressure - C4 - Part 2

y/x	CeCGSR_e_NeutralC4	CeCGSR_e_NeutralC5	CeCGSR_e_NeutralC6	CeCGSR_e_NeutralC7	CeCGSR_e_NeutralC1C2
1	99,999	2,706	2,706	99,999	368

P2D2 Decel Pressure - C4 - Part 3

y/x	CeCGSR_e_NeutralC1C3	CeCGSR_e_NeutralC1C4	CeCGSR_e_NeutralC1C5	CeCGSR_e_NeutralC2C3	CeCGSR_e_NeutralC2C4
1	2,706	99,999	99,999	1,994	99,999

P2D2 Decel Pressure - C4 - Part 4

y/x	CeCGSR_e_NeutralC2C5	CeCGSR_e_NeutralC2C6	CeCGSR_e_NeutralC3C4	CeCGSR_e_NeutralC3C5	CeCGSR_e_NeutralC3C6
1	1,994	1,994	99,999	2,706	2,706

P2D2 Decel Pressure - C4 - Part 5

y/x	CeCGSR_e_NeutralC4C5	CeCGSR_e_NeutralC4C6	CeCGSR_e_NeutralC1C2C3C6	CeCGSR_e_Park_wNC	CeCGSR_e_Park_wNC1
1	99,999	99,999	99,999	2,706	2,706

P2D2 Decel Pressure - C4 - Part 6

y/x	CeCGSR_e_Park_wNC2	CeCGSR_e_Park_wNC3	CeCGSR_e_Park_wNC4	CeCGSR_e_Park_wNC5	CeCGSR_e_Park_wNC6
1	1,994	2,706	99,999	2,706	2,706

P2D2 Decel Pressure - C4 - Part 7

y/x	CeCGSR_e_Park_wNC7	CeCGSR_e_Park_wNC1C2	CeCGSR_e_Park_wNC2C3	CeCGSR_e_Park_wNC2C4	CeCGSR_e_Park_wNC2C5
1	99,999	368	1,994	99,999	1,994

P2D2 Decel Pressure - C4 - Part 8

y/x	CeCGSR_e_Park_wNC2C6	CeCGSR_e_Park_wNC3C4	CeCGSR_e_Park_wNC3C5	CeCGSR_e_Park_wNC3C6	CeCGSR_e_Park_wNC4C5
1	1,994	99,999	2,706	2,706	99,999

P2D2 Decel Pressure - C4 - Part 9

y/x	CeCGSR_e_Park_wNC4C6	CeCGSR_e_Park_wNC1C2C3C6	CeCGSR_e_Reverse	CeCGSR_e_FirstLckd	CeCGSR_e_FirstFW

Initial Supporting table - P2D2 Decel Pressure - C4

1	99,999	99,999	99,999	368	368
P2D2 Decel Pressure - C4 - Part 10					
y/x	CeCGSR_e_SecondLckd	CeCGSR_e_SecondFW	CeCGSR_e_Third	CeCGSR_e_Fourth	CeCGSR_e_Fifth
1	99,999	99,999	99,999	99,999	2,706
P2D2 Decel Pressure - C4 - Part 11					
y/x	CeCGSR_e_Sixth	CeCGSR_e_Seventh	CeCGSR_e_Eighth	CeCGSR_e_Ninth	CeCGSR_e_Tenth
1	99,999	99,999	99,999	1,994	99,999
P2D2 Decel Pressure - C4 - Part 12					
y/x					
1					

Initial Supporting table - P2D2 Decel Pressure - C5

Description: clutch 5 command pressure threshold below which clutch 5 is considered released, such that, clutch 5 cannot carry enough clutch torque that would induce a vehicle deceleration above the design safety metric

Value Units: kPa
X Unit: command gear
Y Units: not applicable, no units, single row table f(command gear)

P2D2 Decel Pressure - C5 - Part 1

y/x	CeCGSR_e_NullForSched	CeCGSR_e_NeutralNoClutch	CeCGSR_e_NeutralC1	CeCGSR_e_NeutralC2	CeCGSR_e_NeutralC3
1	2,302	2,302	1,183	2,302	2,302

P2D2 Decel Pressure - C5 - Part 2

y/x	CeCGSR_e_NeutralC4	CeCGSR_e_NeutralC5	CeCGSR_e_NeutralC6	CeCGSR_e_NeutralC7	CeCGSR_e_NeutralC1C2
1	1,183	99,999	1,183	99,999	750

P2D2 Decel Pressure - C5 - Part 3

y/x	CeCGSR_e_NeutralC1C3	CeCGSR_e_NeutralC1C4	CeCGSR_e_NeutralC1C5	CeCGSR_e_NeutralC2C3	CeCGSR_e_NeutralC2C4
1	1,183	1,183	99,999	2,302	2,302

P2D2 Decel Pressure - C5 - Part 4

y/x	CeCGSR_e_NeutralC2C5	CeCGSR_e_NeutralC2C6	CeCGSR_e_NeutralC3C4	CeCGSR_e_NeutralC3C5	CeCGSR_e_NeutralC3C6
1	99,999	2,302	2,302	99,999	2,302

P2D2 Decel Pressure - C5 - Part 5

y/x	CeCGSR_e_NeutralC4C5	CeCGSR_e_NeutralC4C6	CeCGSR_e_NeutralC1C2C3C6	CeCGSR_e_Park_wNC	CeCGSR_e_Park_wNC1
1	99,999	2,302	99,999	2,302	1,183

P2D2 Decel Pressure - C5 - Part 6

y/x	CeCGSR_e_Park_wNC2	CeCGSR_e_Park_wNC3	CeCGSR_e_Park_wNC4	CeCGSR_e_Park_wNC5	CeCGSR_e_Park_wNC6
1	2,302	2,302	1,183	99,999	1,183

P2D2 Decel Pressure - C5 - Part 7

y/x	CeCGSR_e_Park_wNC7	CeCGSR_e_Park_wNC1C2	CeCGSR_e_Park_wNC2C3	CeCGSR_e_Park_wNC2C4	CeCGSR_e_Park_wNC2C5
1	99,999	750	2,302	2,302	99,999

P2D2 Decel Pressure - C5 - Part 8

y/x	CeCGSR_e_Park_wNC2C6	CeCGSR_e_Park_wNC3C4	CeCGSR_e_Park_wNC3C5	CeCGSR_e_Park_wNC3C6	CeCGSR_e_Park_wNC4C5
1	2,302	2,302	99,999	2,302	99,999

P2D2 Decel Pressure - C5 - Part 9

y/x	CeCGSR_e_Park_wNC4C6	CeCGSR_e_Park_wNC1C2C3C6	CeCGSR_e_Reverse	CeCGSR_e_FirstLckd	CeCGSR_e_FirstFW

Initial Supporting table - P2D2 Decel Pressure - C5

1	2,302	99,999	196	99,999	99,999

P2D2 Decel Pressure - C5 - Part 10

y/x	CeCGSR_e_SecondLckd	CeCGSR_e_SecondFW	CeCGSR_e_Third	CeCGSR_e_Fourth	CeCGSR_e_Fifth
1	750	750	99,999	1,183	99,999

P2D2 Decel Pressure - C5 - Part 11

y/x	CeCGSR_e_Sixth	CeCGSR_e_Seventh	CeCGSR_e_Eighth	CeCGSR_e_Ninth	CeCGSR_e_Tenth
1	99,999	99,999	99,999	99,999	2,302

P2D2 Decel Pressure - C5 - Part 12

y/x					
1					

Initial Supporting table - P2D2 Decel Pressure - C6

Description: clutch 6 command pressure threshold below which clutch 6 is considered released, such that, clutch 6 cannot carry enough clutch torque that would induce a vehicle deceleration above the design safety metric

Value Units: kPa
X Unit: command gear
Y Units: not applicable, no units, single row table f(command gear)

P2D2 Decel Pressure - C6 - Part 1

y/x	CeCGSR_e_NullForSched	CeCGSR_e_NeutralNoClutch	CeCGSR_e_NeutralC1	CeCGSR_e_NeutralC2	CeCGSR_e_NeutralC3
1	666	666	666	248	666

P2D2 Decel Pressure - C6 - Part 2

y/x	CeCGSR_e_NeutralC4	CeCGSR_e_NeutralC5	CeCGSR_e_NeutralC6	CeCGSR_e_NeutralC7	CeCGSR_e_NeutralC1C2
1	666	666	99,999	99,999	248

P2D2 Decel Pressure - C6 - Part 3

y/x	CeCGSR_e_NeutralC1C3	CeCGSR_e_NeutralC1C4	CeCGSR_e_NeutralC1C5	CeCGSR_e_NeutralC2C3	CeCGSR_e_NeutralC2C4
1	666	666	666	248	248

P2D2 Decel Pressure - C6 - Part 4

y/x	CeCGSR_e_NeutralC2C5	CeCGSR_e_NeutralC2C6	CeCGSR_e_NeutralC3C4	CeCGSR_e_NeutralC3C5	CeCGSR_e_NeutralC3C6
1	142	99,999	666	666	99,999

P2D2 Decel Pressure - C6 - Part 5

y/x	CeCGSR_e_NeutralC4C5	CeCGSR_e_NeutralC4C6	CeCGSR_e_NeutralC1C2C3C6	CeCGSR_e_Park_wNC	CeCGSR_e_Park_wNC1
1	666	99,999	666	666	666

P2D2 Decel Pressure - C6 - Part 6

y/x	CeCGSR_e_Park_wNC2	CeCGSR_e_Park_wNC3	CeCGSR_e_Park_wNC4	CeCGSR_e_Park_wNC5	CeCGSR_e_Park_wNC6
1	248	666	666	666	99,999

P2D2 Decel Pressure - C6 - Part 7

y/x	CeCGSR_e_Park_wNC7	CeCGSR_e_Park_wNC1C2	CeCGSR_e_Park_wNC2C3	CeCGSR_e_Park_wNC2C4	CeCGSR_e_Park_wNC2C5
1	99,999	248	248	248	142

P2D2 Decel Pressure - C6 - Part 8

y/x	CeCGSR_e_Park_wNC2C6	CeCGSR_e_Park_wNC3C4	CeCGSR_e_Park_wNC3C5	CeCGSR_e_Park_wNC3C6	CeCGSR_e_Park_wNC4C5
1	99,999	666	666	99,999	666

P2D2 Decel Pressure - C6 - Part 9

y/x	CeCGSR_e_Park_wNC4C6	CeCGSR_e_Park_wNC1C2C3C6	CeCGSR_e_Reverse	CeCGSR_e_FirstLckd	CeCGSR_e_FirstFW

Initial Supporting table - P2D2 Decel Pressure - C6

1	99,999	666	99,999	142	142
P2D2 Decel Pressure - C6 - Part 10					
y/x	CeCGSR_e_SecondLckd	CeCGSR_e_SecondFW	CeCGSR_e_Third	CeCGSR_e_Fourth	CeCGSR_e_Fifth
1	248	248	666	99,999	99,999
P2D2 Decel Pressure - C6 - Part 11					
y/x	CeCGSR_e_Sixth	CeCGSR_e_Seventh	CeCGSR_e_Eighth	CeCGSR_e_Ninth	CeCGSR_e_Tenth
1	99,999	99,999	99,999	99,999	99,999
P2D2 Decel Pressure - C6 - Part 12					
y/x					
1					

Initial Supporting table - P2D2 Decel Pressure - C7

Description: clutch 7 command pressure threshold below which clutch 7 is considered released, such that, clutch 7 cannot carry enough clutch torque that would induce a vehicle deceleration above the design safety metric

Value Units: kPa
X Unit: command gear
Y Units: not applicable, no units, single row table f(command gear)

P2D2 Decel Pressure - C7 - Part 1

y/x	CeCGSR_e_NullForSched	CeCGSR_e_NeutralNoClutch	CeCGSR_e_NeutralC1	CeCGSR_e_NeutralC2	CeCGSR_e_NeutralC3
1	99,999	99,999	99,999	99,999	99,999

P2D2 Decel Pressure - C7 - Part 2

y/x	CeCGSR_e_NeutralC4	CeCGSR_e_NeutralC5	CeCGSR_e_NeutralC6	CeCGSR_e_NeutralC7	CeCGSR_e_NeutralC1C2
1	99,999	99,999	99,999	99,999	99,999

P2D2 Decel Pressure - C7 - Part 3

y/x	CeCGSR_e_NeutralC1C3	CeCGSR_e_NeutralC1C4	CeCGSR_e_NeutralC1C5	CeCGSR_e_NeutralC2C3	CeCGSR_e_NeutralC2C4
1	99,999	99,999	99,999	99,999	99,999

P2D2 Decel Pressure - C7 - Part 4

y/x	CeCGSR_e_NeutralC2C5	CeCGSR_e_NeutralC2C6	CeCGSR_e_NeutralC3C4	CeCGSR_e_NeutralC3C5	CeCGSR_e_NeutralC3C6
1	99,999	99,999	99,999	99,999	99,999

P2D2 Decel Pressure - C7 - Part 5

y/x	CeCGSR_e_NeutralC4C5	CeCGSR_e_NeutralC4C6	CeCGSR_e_NeutralC1C2C3C6	CeCGSR_e_Park_wNC	CeCGSR_e_Park_wNC1
1	99,999	99,999	99,999	99,999	99,999

P2D2 Decel Pressure - C7 - Part 6

y/x	CeCGSR_e_Park_wNC2	CeCGSR_e_Park_wNC3	CeCGSR_e_Park_wNC4	CeCGSR_e_Park_wNC5	CeCGSR_e_Park_wNC6
1	99,999	99,999	99,999	99,999	99,999

P2D2 Decel Pressure - C7 - Part 7

y/x	CeCGSR_e_Park_wNC7	CeCGSR_e_Park_wNC1C2	CeCGSR_e_Park_wNC2C3	CeCGSR_e_Park_wNC2C4	CeCGSR_e_Park_wNC2C5
1	99,999	99,999	99,999	99,999	99,999

P2D2 Decel Pressure - C7 - Part 8

y/x	CeCGSR_e_Park_wNC2C6	CeCGSR_e_Park_wNC3C4	CeCGSR_e_Park_wNC3C5	CeCGSR_e_Park_wNC3C6	CeCGSR_e_Park_wNC4C5
1	99,999	99,999	99,999	99,999	99,999

P2D2 Decel Pressure - C7 - Part 9

y/x	CeCGSR_e_Park_wNC4C6	CeCGSR_e_Park_wNC1C2C3C6	CeCGSR_e_Reverse	CeCGSR_e_FirstLckd	CeCGSR_e_FirstFW

Initial Supporting table - P2D2 Decel Pressure - C7

1	99,999	99,999	99,999	99,999	99,999

P2D2 Decel Pressure - C7 - Part 10

y/x	CeCGSR_e_SecondLckd	CeCGSR_e_SecondFW	CeCGSR_e_Third	CeCGSR_e_Fourth	CeCGSR_e_Fifth
1	99,999	99,999	99,999	99,999	99,999

P2D2 Decel Pressure - C7 - Part 11

y/x	CeCGSR_e_Sixth	CeCGSR_e_Seventh	CeCGSR_e_Eighth	CeCGSR_e_Ninth	CeCGSR_e_Tenth
1	99,999	99,999	99,999	99,999	99,999

P2D2 Decel Pressure - C7 - Part 12

y/x					
1					

Initial Supporting table - speed sensor directional rationality enable calibration

Description: speed sensor directional rationality enable calibration

Value Units: Boolean
X Unit: direction commanded
Y Units: unitless

y/x	CeCGSR_FwdCmded	CeCGSR_NeutCmded	CeCGSR_RvrsCmded	CeCGSR_ParkCmded
1	1	1	1	1

Initial Supporting table - transmission fluid temperature warm up time

Description:

Value Units: transmission fluid temperature normal warn up time, seconds
X Unit: transmission fluid temperature at controller power up, °C

y/x	-40.00	-30.00	-20.00	0.00	20.00
1	1,800.0	1,400.0	1,000.0	500.0	10.0

Initial Supporting table - 10 speed transmission clutch definition and gear state to clutch map

Description: indicates clutch definition and gear state verses applied and released clutches for 10 speed transmission

Value Units: applied or released
X Unit: clutch
Y Units: gear index Y axis, actual gear column 1

y/x	1	2	3	4	5	6	7	8
1		C1 = C123456R	C2 = C1289-10R	C3 = C234579-10	C4 = C234678-10R	C5 = C1356789	C6 = C456789-10R	C7 = OWC12
2	1st gear braking	applied	applied	released	released	applied	released	applied
3	1st gear free wheel	applied	applied	released	released	applied	released	released
4	2nd gear braking	applied	applied	applied	applied	released	released	applied
5	2nd gear free wheel	applied	applied	applied	applied	released	released	released
6	3rd gear	applied	released	applied	applied	applied	released	released
7	4th gear	applied	released	applied	applied	released	applied	released
8	5th gear	applied	released	applied	released	applied	applied	released
9	6th gear	applied	released	released	released	applied	applied	released
10	7th gear	released	released	applied	applied	applied	applied	released
11	8th gear	released	applied	released	applied	applied	applied	released
12	9th gear	released	applied	applied	released	applied	applied	released
13	10th gear	released	applied	applied	applied	released	applied	released
14	reverse gear	applied	applied	released	applied	released	released	released

Initial Supporting table - 9 speed transmission clutch definition and gear state to clutch map

Description: indicates clutch definition and gear state verses applied and released clutches for 9 speed transmission

Value Units: applied or released
X Unit: clutch
Y Units: gear index Y axis, actual gear column 1

y/x	1	2	3	4	5	6	7	8
1		C1 = CB123456	C2 = C6789	C3 = CB1R	C4 = CB29	C5 = CB38	C6 = C4	C7 = C57R
2	1st gear braking	applied	released	applied	released	released	released	released
3	1st gear free wheel	applied	released	released	released	released	released	released
4	2nd gear	applied	released	released	applied	released	released	released
5	3rd gear	applied	released	released	released	applied	released	released
6	4th gear	applied	released	released	released	released	applied	released
7	5th gear	applied	released	released	released	released	released	applied
8	6th gear	applied	applied	released	released	released	released	released
9	7th gear	released	applied	released	released	released	released	applied
10	8th gear	released	applied	released	released	applied	released	released
11	9th gear	released	applied	released	applied	released	released	released
12	reverse gear	released	released	applied	released	released	released	applied

Initial Supporting table - engine speed time for transmission hydraulic pressure available

Description: time needed for engine speed to trigger "transmission hydraulic pressure available"

Value Units: seconds
X Unit: °C

y/x	-40.00	-30.00	-20.00	0.00	40.00
1	1.525	1.500	0.981	0.938	0.800

Initial Supporting table - NumClchTieUp

Description: NumClchTieUp

Value Units: minimum # of clutches
X Unit: command gear or attained gear
Y Units: not applicable, no units, single row table f(gear)

NumClchTieUp - Part 1

y/x	CeCGSR_e_NullForSched	CeCGSR_e_NeutralNoClutch	CeCGSR_e_NeutralC1	CeCGSR_e_NeutralC2	CeCGSR_e_NeutralC3	CeCGSR_e_NeutralC4	CeCGSR_e_NeutralC5
1	5	5	4	4	4	4	4

NumClchTieUp - Part 2

y/x	CeCGSR_e_NeutralC6	CeCGSR_e_NeutralC7	CeCGSR_e_NeutralC1C2	CeCGSR_e_NeutralC1C3	CeCGSR_e_NeutralC1C4	CeCGSR_e_NeutralC1C5	CeCGSR_e_NeutralC2C3
1	4	4	3	3	3	3	3

NumClchTieUp - Part 3

y/x	CeCGSR_e_NeutralC2C4	CeCGSR_e_NeutralC2C5	CeCGSR_e_NeutralC2C6	CeCGSR_e_NeutralC3C4	CeCGSR_e_NeutralC3C5	CeCGSR_e_NeutralC3C6	CeCGSR_e_NeutralC4C5
1	3	3	3	3	3	3	3

NumClchTieUp - Part 4

y/x	CeCGSR_e_NeutralC4C6	CeCGSR_e_NeutralC1C2C3C6	CeCGSR_e_Park_wNC	CeCGSR_e_Park_wNC1	CeCGSR_e_Park_wNC2	CeCGSR_e_Park_wNC3	CeCGSR_e_Park_wNC4
1	3	1	5	4	4	4	4

NumClchTieUp - Part 5

y/x	CeCGSR_e_Park_wNC5	CeCGSR_e_Park_wNC6	CeCGSR_e_Park_wNC7	CeCGSR_e_Park_wNC1C2	CeCGSR_e_Park_wNC2C3	CeCGSR_e_Park_wNC2C4	CeCGSR_e_Park_wNC2C5
1	4	4	4	3	3	3	3

NumClchTieUp - Part 6

y/x	CeCGSR_e_Park_wNC2C6	CeCGSR_e_Park_wNC3C4	CeCGSR_e_Park_wNC3C5	CeCGSR_e_Park_wNC3C6	CeCGSR_e_Park_wNC4C5	CeCGSR_e_Park_wNC4C6	CeCGSR_e_Park_wNC1C2C3C6
1	3	3	3	3	3	3	1

NumClchTieUp - Part 7

y/x	CeCGSR_e_Reverse	CeCGSR_e_FirstLckd	CeCGSR_e_FirstFW	CeCGSR_e_SecondLckd	CeCGSR_e_SecondFW	CeCGSR_e_Third	CeCGSR_e_Fourth
1	1	1	2	1	2	1	1

NumClchTieUp - Part 8

y/x	CeCGSR_e_Fifth	CeCGSR_e_Sixth	CeCGSR_e_Seventh	CeCGSR_e_Eighth	CeCGSR_e_Ninth	CeCGSR_e_Tenth	

Initial Supporting table - NumClchTieUp

1	1	1	1	1	1	1	

Initial Supporting table - P2817 TCC stuck off fail TCC slip speed

Description: TCC stuck off slip speed fail threshold when TCC is in ON mode (controlled slip mode)

Value Units: RPM
X Unit: engine torque Nm

y/x	0.00	64.00	128.00	192.00	256.00	320.00	384.00	448.00	512.00
1	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0

Initial Supporting table - P2D2 Cltch Slip Sum

Description:

Value Units: rate of change of output rpm (dn) per 25 milliseconds
X Unit: % brake pedal position
Y Units: not applicable, no units, single row table f(brake pedal position)

y/x	0	15	20	30	35	50	75	88	100
1	-4	-4	-4	-4	-4	-4	-4	-4	-4

Initial Supporting table - P2D2 Decel Pressure - C1

Description: clutch 1 command pressure threshold below which clutch 1 is considered released, such that, clutch 1 cannot carry enough clutch torque that would induce a vehicle deceleration above the design safety metric

Value Units: kPa
X Unit: command gear
Y Units: not applicable, no units, single row table f(command gear)

P2D2 Decel Pressure - C1 - Part 1

y/x	CeCGSR_e_NullForSched	CeCGSR_e_NeutralNoClutch	CeCGSR_e_NeutralC1	CeCGSR_e_NeutralC2	CeCGSR_e_NeutralC3
1	446.5	446.5	99,999.0	294.6	446.5

P2D2 Decel Pressure - C1 - Part 2

y/x	CeCGSR_e_NeutralC4	CeCGSR_e_NeutralC5	CeCGSR_e_NeutralC6	CeCGSR_e_NeutralC7	CeCGSR_e_NeutralC1C2
1	446.5	446.5	446.5	99,999.0	99,999.0

P2D2 Decel Pressure - C1 - Part 3

y/x	CeCGSR_e_NeutralC1C3	CeCGSR_e_NeutralC1C4	CeCGSR_e_NeutralC1C5	CeCGSR_e_NeutralC2C3	CeCGSR_e_NeutralC2C4
1	99,999.0	99,999.0	99,999.0	294.6	294.6

P2D2 Decel Pressure - C1 - Part 4

y/x	CeCGSR_e_NeutralC2C5	CeCGSR_e_NeutralC2C6	CeCGSR_e_NeutralC3C4	CeCGSR_e_NeutralC3C5	CeCGSR_e_NeutralC3C6
1	287.1	294.6	446.5	446.5	446.5

P2D2 Decel Pressure - C1 - Part 5

y/x	CeCGSR_e_NeutralC4C5	CeCGSR_e_NeutralC4C6	CeCGSR_e_NeutralC1C2C3C6	CeCGSR_e_Park_wNC	CeCGSR_e_Park_wNC1
1	446.5	446.5	446.5	446.5	99,999.0

P2D2 Decel Pressure - C1 - Part 6

y/x	CeCGSR_e_Park_wNC2	CeCGSR_e_Park_wNC3	CeCGSR_e_Park_wNC4	CeCGSR_e_Park_wNC5	CeCGSR_e_Park_wNC6
1	294.6	446.5	446.5	446.5	446.5

P2D2 Decel Pressure - C1 - Part 7

y/x	CeCGSR_e_Park_wNC7	CeCGSR_e_Park_wNC1C2	CeCGSR_e_Park_wNC2C3	CeCGSR_e_Park_wNC2C4	CeCGSR_e_Park_wNC2C5
1	99,999.0	99,999.0	294.6	294.6	287.1

P2D2 Decel Pressure - C1 - Part 8

y/x	CeCGSR_e_Park_wNC2C6	CeCGSR_e_Park_wNC3C4	CeCGSR_e_Park_wNC3C5	CeCGSR_e_Park_wNC3C6	CeCGSR_e_Park_wNC4C5
1	294.6	446.5	446.5	446.5	446.5

P2D2 Decel Pressure - C1 - Part 9

y/x	CeCGSR_e_Park_wNC4C6	CeCGSR_e_Park_wNC1C2C3C6	CeCGSR_e_Reverse	CeCGSR_e_FirstLckd	CeCGSR_e_FirstFW

Initial Supporting table - P2D2 Decel Pressure - C1

1	446.5	446.5	99,999.0	99,999.0	99,999.0
P2D2 Decel Pressure - C1 - Part 10					
y/x	CeCGSR_e_SecondLckd	CeCGSR_e_SecondFW	CeCGSR_e_Third	CeCGSR_e_Fourth	CeCGSR_e_Fifth
1	99,999.0	99,999.0	99,999.0	99,999.0	99,999.0
P2D2 Decel Pressure - C1 - Part 11					
y/x	CeCGSR_e_Sixth	CeCGSR_e_Seventh	CeCGSR_e_Eighth	CeCGSR_e_Ninth	CeCGSR_e_Tenth
1	99,999.0	446.5	287.1	273.6	294.6
P2D2 Decel Pressure - C1 - Part 12					
y/x					
1					

Initial Supporting table - P2D2 Decel Pressure - C2

Description: clutch 2 command pressure threshold below which clutch 2 is considered released, such that, clutch 2 cannot carry enough clutch torque that would induce a vehicle deceleration above the design safety metric

Value Units: kPa
X Unit: command gear
Y Units: not applicable, no units, single row table f(command gear)

P2D2 Decel Pressure - C2 - Part 1

y/x	CeCGSR_e_NullForSched	CeCGSR_e_NeutralNoClutch	CeCGSR_e_NeutralC1	CeCGSR_e_NeutralC2	CeCGSR_e_NeutralC3
1	662	662	352	99,999	662

P2D2 Decel Pressure - C2 - Part 2

y/x	CeCGSR_e_NeutralC4	CeCGSR_e_NeutralC5	CeCGSR_e_NeutralC6	CeCGSR_e_NeutralC7	CeCGSR_e_NeutralC1C2
1	662	662	662	99,999	99,999

P2D2 Decel Pressure - C2 - Part 3

y/x	CeCGSR_e_NeutralC1C3	CeCGSR_e_NeutralC1C4	CeCGSR_e_NeutralC1C5	CeCGSR_e_NeutralC2C3	CeCGSR_e_NeutralC2C4
1	352	352	352	99,999	99,999

P2D2 Decel Pressure - C2 - Part 4

y/x	CeCGSR_e_NeutralC2C5	CeCGSR_e_NeutralC2C6	CeCGSR_e_NeutralC3C4	CeCGSR_e_NeutralC3C5	CeCGSR_e_NeutralC3C6
1	99,999	99,999	662	662	662

P2D2 Decel Pressure - C2 - Part 5

y/x	CeCGSR_e_NeutralC4C5	CeCGSR_e_NeutralC4C6	CeCGSR_e_NeutralC1C2C3C6	CeCGSR_e_Park_wNC	CeCGSR_e_Park_wNC1
1	662	662	99,999	662	352

P2D2 Decel Pressure - C2 - Part 6

y/x	CeCGSR_e_Park_wNC2	CeCGSR_e_Park_wNC3	CeCGSR_e_Park_wNC4	CeCGSR_e_Park_wNC5	CeCGSR_e_Park_wNC6
1	99,999	662	662	662	662

P2D2 Decel Pressure - C2 - Part 7

y/x	CeCGSR_e_Park_wNC7	CeCGSR_e_Park_wNC1C2	CeCGSR_e_Park_wNC2C3	CeCGSR_e_Park_wNC2C4	CeCGSR_e_Park_wNC2C5
1	99,999	99,999	99,999	99,999	99,999

P2D2 Decel Pressure - C2 - Part 8

y/x	CeCGSR_e_Park_wNC2C6	CeCGSR_e_Park_wNC3C4	CeCGSR_e_Park_wNC3C5	CeCGSR_e_Park_wNC3C6	CeCGSR_e_Park_wNC4C5
1	99,999	662	662	662	662

P2D2 Decel Pressure - C2 - Part 9

y/x	CeCGSR_e_Park_wNC4C6	CeCGSR_e_Park_wNC1C2C3C6	CeCGSR_e_Reverse	CeCGSR_e_FirstLckd	CeCGSR_e_FirstFW

Initial Supporting table - P2D2 Decel Pressure - C2

1	662	99,999	99,999	99,999	99,999

P2D2 Decel Pressure - C2 - Part 10

y/x	CeCGSR_e_SecondLckd	CeCGSR_e_SecondFW	CeCGSR_e_Third	CeCGSR_e_Fourth	CeCGSR_e_Fifth
1	99,999	99,999	352	228	252

P2D2 Decel Pressure - C2 - Part 11

y/x	CeCGSR_e_Sixth	CeCGSR_e_Seventh	CeCGSR_e_Eighth	CeCGSR_e_Ninth	CeCGSR_e_Tenth
1	231	662	99,999	99,999	99,999

P2D2 Decel Pressure - C2 - Part 12

y/x					
1					

Initial Supporting table - P2D2 Decel Pressure - C3

Description: clutch 3 command pressure threshold below which clutch 3 is considered released, such that, clutch 3 cannot carry enough clutch torque that would induce a vehicle deceleration above the design safety metric

Value Units: kPa
X Unit: command gear
Y Units: not applicable, no units, single row table f(command gear)

P2D2 Decel Pressure - C3 - Part 1

y/x	CeCGSR_e_NullForSched	CeCGSR_e_NeutralNoClutch	CeCGSR_e_NeutralC1	CeCGSR_e_NeutralC2	CeCGSR_e_NeutralC3
1	99,999	99,999	99,999	99,999	99,999

P2D2 Decel Pressure - C3 - Part 2

y/x	CeCGSR_e_NeutralC4	CeCGSR_e_NeutralC5	CeCGSR_e_NeutralC6	CeCGSR_e_NeutralC7	CeCGSR_e_NeutralC1C2
1	99,999	99,999	1,652	99,999	99,999

P2D2 Decel Pressure - C3 - Part 3

y/x	CeCGSR_e_NeutralC1C3	CeCGSR_e_NeutralC1C4	CeCGSR_e_NeutralC1C5	CeCGSR_e_NeutralC2C3	CeCGSR_e_NeutralC2C4
1	99,999	99,999	99,999	99,999	99,999

P2D2 Decel Pressure - C3 - Part 4

y/x	CeCGSR_e_NeutralC2C5	CeCGSR_e_NeutralC2C6	CeCGSR_e_NeutralC3C4	CeCGSR_e_NeutralC3C5	CeCGSR_e_NeutralC3C6
1	99,999	1,652	99,999	99,999	99,999

P2D2 Decel Pressure - C3 - Part 5

y/x	CeCGSR_e_NeutralC4C5	CeCGSR_e_NeutralC4C6	CeCGSR_e_NeutralC1C2C3C6	CeCGSR_e_Park_wNC	CeCGSR_e_Park_wNC1
1	99,999	1,652	99,999	99,999	99,999

P2D2 Decel Pressure - C3 - Part 6

y/x	CeCGSR_e_Park_wNC2	CeCGSR_e_Park_wNC3	CeCGSR_e_Park_wNC4	CeCGSR_e_Park_wNC5	CeCGSR_e_Park_wNC6
1	99,999	99,999	99,999	99,999	1,652

P2D2 Decel Pressure - C3 - Part 7

y/x	CeCGSR_e_Park_wNC7	CeCGSR_e_Park_wNC1C2	CeCGSR_e_Park_wNC2C3	CeCGSR_e_Park_wNC2C4	CeCGSR_e_Park_wNC2C5
1	99,999	1,652	99,999	99,999	99,999

P2D2 Decel Pressure - C3 - Part 8

y/x	CeCGSR_e_Park_wNC2C6	CeCGSR_e_Park_wNC3C4	CeCGSR_e_Park_wNC3C5	CeCGSR_e_Park_wNC3C6	CeCGSR_e_Park_wNC4C5
1	1,652	99,999	99,999	99,999	1,652

P2D2 Decel Pressure - C3 - Part 9

y/x	CeCGSR_e_Park_wNC4C6	CeCGSR_e_Park_wNC1C2C3C6	CeCGSR_e_Reverse	CeCGSR_e_FirstLckd	CeCGSR_e_FirstFW

Initial Supporting table - P2D2 Decel Pressure - C3

1	1,652	99,999	193	99,999	99,999
P2D2 Decel Pressure - C3 - Part 10					
y/x	CeCGSR_e_SecondLckd	CeCGSR_e_SecondFW	CeCGSR_e_Third	CeCGSR_e_Fourth	CeCGSR_e_Fifth
1	99,999	99,999	99,999	99,999	99,999
P2D2 Decel Pressure - C3 - Part 11					
y/x	CeCGSR_e_Sixth	CeCGSR_e_Seventh	CeCGSR_e_Eighth	CeCGSR_e_Ninth	CeCGSR_e_Tenth
1	896	99,999	1,652	99,999	99,999
P2D2 Decel Pressure - C3 - Part 12					
y/x					
1					

Initial Supporting table - P2D2 Decel Pressure - C4

Description: clutch 4 command pressure threshold below which clutch 4 is considered released, such that, clutch 4 cannot carry enough clutch torque that would induce a vehicle deceleration above the design safety metric

Value Units: kPa
X Unit: command gear
Y Units: not applicable, no units, single row table f(command gear)

P2D2 Decel Pressure - C4 - Part 1

y/x	CeCGSR_e_NullForSched	CeCGSR_e_NeutralNoClutch	CeCGSR_e_NeutralC1	CeCGSR_e_NeutralC2	CeCGSR_e_NeutralC3
1	2,706	2,706	2,706	1,994	2,706

P2D2 Decel Pressure - C4 - Part 2

y/x	CeCGSR_e_NeutralC4	CeCGSR_e_NeutralC5	CeCGSR_e_NeutralC6	CeCGSR_e_NeutralC7	CeCGSR_e_NeutralC1C2
1	99,999	2,706	2,706	99,999	368

P2D2 Decel Pressure - C4 - Part 3

y/x	CeCGSR_e_NeutralC1C3	CeCGSR_e_NeutralC1C4	CeCGSR_e_NeutralC1C5	CeCGSR_e_NeutralC2C3	CeCGSR_e_NeutralC2C4
1	2,706	99,999	99,999	1,994	99,999

P2D2 Decel Pressure - C4 - Part 4

y/x	CeCGSR_e_NeutralC2C5	CeCGSR_e_NeutralC2C6	CeCGSR_e_NeutralC3C4	CeCGSR_e_NeutralC3C5	CeCGSR_e_NeutralC3C6
1	1,994	1,994	99,999	2,706	2,706

P2D2 Decel Pressure - C4 - Part 5

y/x	CeCGSR_e_NeutralC4C5	CeCGSR_e_NeutralC4C6	CeCGSR_e_NeutralC1C2C3C6	CeCGSR_e_Park_wNC	CeCGSR_e_Park_wNC1
1	99,999	99,999	99,999	2,706	2,706

P2D2 Decel Pressure - C4 - Part 6

y/x	CeCGSR_e_Park_wNC2	CeCGSR_e_Park_wNC3	CeCGSR_e_Park_wNC4	CeCGSR_e_Park_wNC5	CeCGSR_e_Park_wNC6
1	1,994	2,706	99,999	2,706	2,706

P2D2 Decel Pressure - C4 - Part 7

y/x	CeCGSR_e_Park_wNC7	CeCGSR_e_Park_wNC1C2	CeCGSR_e_Park_wNC2C3	CeCGSR_e_Park_wNC2C4	CeCGSR_e_Park_wNC2C5
1	99,999	368	1,994	99,999	1,994

P2D2 Decel Pressure - C4 - Part 8

y/x	CeCGSR_e_Park_wNC2C6	CeCGSR_e_Park_wNC3C4	CeCGSR_e_Park_wNC3C5	CeCGSR_e_Park_wNC3C6	CeCGSR_e_Park_wNC4C5
1	1,994	99,999	2,706	2,706	99,999

P2D2 Decel Pressure - C4 - Part 9

y/x	CeCGSR_e_Park_wNC4C6	CeCGSR_e_Park_wNC1C2C3C6	CeCGSR_e_Reverse	CeCGSR_e_FirstLckd	CeCGSR_e_FirstFW

Initial Supporting table - P2D2 Decel Pressure - C4

1	99,999	99,999	99,999	368	368

P2D2 Decel Pressure - C4 - Part 10

y/x	CeCGSR_e_SecondLckd	CeCGSR_e_SecondFW	CeCGSR_e_Third	CeCGSR_e_Fourth	CeCGSR_e_Fifth
1	99,999	99,999	99,999	99,999	2,706

P2D2 Decel Pressure - C4 - Part 11

y/x	CeCGSR_e_Sixth	CeCGSR_e_Seventh	CeCGSR_e_Eighth	CeCGSR_e_Ninth	CeCGSR_e_Tenth
1	99,999	99,999	99,999	1,994	99,999

P2D2 Decel Pressure - C4 - Part 12

y/x					
1					

Initial Supporting table - P2D2 Decel Pressure - C5

Description: clutch 5 command pressure threshold below which clutch 5 is considered released, such that, clutch 5 cannot carry enough clutch torque that would induce a vehicle deceleration above the design safety metric

Value Units: kPa
X Unit: command gear
Y Units: not applicable, no units, single row table f(command gear)

P2D2 Decel Pressure - C5 - Part 1

y/x	CeCGSR_e_NullForSched	CeCGSR_e_NeutralNoClutch	CeCGSR_e_NeutralC1	CeCGSR_e_NeutralC2	CeCGSR_e_NeutralC3
1	2,302	2,302	1,183	2,302	2,302

P2D2 Decel Pressure - C5 - Part 2

y/x	CeCGSR_e_NeutralC4	CeCGSR_e_NeutralC5	CeCGSR_e_NeutralC6	CeCGSR_e_NeutralC7	CeCGSR_e_NeutralC1C2
1	1,183	99,999	1,183	99,999	750

P2D2 Decel Pressure - C5 - Part 3

y/x	CeCGSR_e_NeutralC1C3	CeCGSR_e_NeutralC1C4	CeCGSR_e_NeutralC1C5	CeCGSR_e_NeutralC2C3	CeCGSR_e_NeutralC2C4
1	1,183	1,183	99,999	2,302	2,302

P2D2 Decel Pressure - C5 - Part 4

y/x	CeCGSR_e_NeutralC2C5	CeCGSR_e_NeutralC2C6	CeCGSR_e_NeutralC3C4	CeCGSR_e_NeutralC3C5	CeCGSR_e_NeutralC3C6
1	99,999	2,302	2,302	99,999	2,302

P2D2 Decel Pressure - C5 - Part 5

y/x	CeCGSR_e_NeutralC4C5	CeCGSR_e_NeutralC4C6	CeCGSR_e_NeutralC1C2C3C6	CeCGSR_e_Park_wNC	CeCGSR_e_Park_wNC1
1	99,999	2,302	99,999	2,302	1,183

P2D2 Decel Pressure - C5 - Part 6

y/x	CeCGSR_e_Park_wNC2	CeCGSR_e_Park_wNC3	CeCGSR_e_Park_wNC4	CeCGSR_e_Park_wNC5	CeCGSR_e_Park_wNC6
1	2,302	2,302	1,183	99,999	1,183

P2D2 Decel Pressure - C5 - Part 7

y/x	CeCGSR_e_Park_wNC7	CeCGSR_e_Park_wNC1C2	CeCGSR_e_Park_wNC2C3	CeCGSR_e_Park_wNC2C4	CeCGSR_e_Park_wNC2C5
1	99,999	750	2,302	2,302	99,999

P2D2 Decel Pressure - C5 - Part 8

y/x	CeCGSR_e_Park_wNC2C6	CeCGSR_e_Park_wNC3C4	CeCGSR_e_Park_wNC3C5	CeCGSR_e_Park_wNC3C6	CeCGSR_e_Park_wNC4C5
1	2,302	2,302	99,999	2,302	99,999

P2D2 Decel Pressure - C5 - Part 9

y/x	CeCGSR_e_Park_wNC4C6	CeCGSR_e_Park_wNC1C2C3C6	CeCGSR_e_Reverse	CeCGSR_e_FirstLckd	CeCGSR_e_FirstFW

Initial Supporting table - P2D2 Decel Pressure - C5

1	2,302	99,999	196	99,999	99,999

P2D2 Decel Pressure - C5 - Part 10

y/x	CeCGSR_e_SecondLckd	CeCGSR_e_SecondFW	CeCGSR_e_Third	CeCGSR_e_Fourth	CeCGSR_e_Fifth
1	750	750	99,999	1,183	99,999

P2D2 Decel Pressure - C5 - Part 11

y/x	CeCGSR_e_Sixth	CeCGSR_e_Seventh	CeCGSR_e_Eighth	CeCGSR_e_Ninth	CeCGSR_e_Tenth
1	99,999	99,999	99,999	99,999	2,302

P2D2 Decel Pressure - C5 - Part 12

y/x					
1					

Initial Supporting table - P2D2 Decel Pressure - C6

Description: clutch 6 command pressure threshold below which clutch 6 is considered released, such that, clutch 6 cannot carry enough clutch torque that would induce a vehicle deceleration above the design safety metric

Value Units: kPa
X Unit: command gear
Y Units: not applicable, no units, single row table f(command gear)

P2D2 Decel Pressure - C6 - Part 1

y/x	CeCGSR_e_NullForSched	CeCGSR_e_NeutralNoClutch	CeCGSR_e_NeutralC1	CeCGSR_e_NeutralC2	CeCGSR_e_NeutralC3
1	666	666	666	248	666

P2D2 Decel Pressure - C6 - Part 2

y/x	CeCGSR_e_NeutralC4	CeCGSR_e_NeutralC5	CeCGSR_e_NeutralC6	CeCGSR_e_NeutralC7	CeCGSR_e_NeutralC1C2
1	666	666	99,999	99,999	248

P2D2 Decel Pressure - C6 - Part 3

y/x	CeCGSR_e_NeutralC1C3	CeCGSR_e_NeutralC1C4	CeCGSR_e_NeutralC1C5	CeCGSR_e_NeutralC2C3	CeCGSR_e_NeutralC2C4
1	666	666	666	248	248

P2D2 Decel Pressure - C6 - Part 4

y/x	CeCGSR_e_NeutralC2C5	CeCGSR_e_NeutralC2C6	CeCGSR_e_NeutralC3C4	CeCGSR_e_NeutralC3C5	CeCGSR_e_NeutralC3C6
1	142	99,999	666	666	99,999

P2D2 Decel Pressure - C6 - Part 5

y/x	CeCGSR_e_NeutralC4C5	CeCGSR_e_NeutralC4C6	CeCGSR_e_NeutralC1C2C3C6	CeCGSR_e_Park_wNC	CeCGSR_e_Park_wNC1
1	666	99,999	666	666	666

P2D2 Decel Pressure - C6 - Part 6

y/x	CeCGSR_e_Park_wNC2	CeCGSR_e_Park_wNC3	CeCGSR_e_Park_wNC4	CeCGSR_e_Park_wNC5	CeCGSR_e_Park_wNC6
1	248	666	666	666	99,999

P2D2 Decel Pressure - C6 - Part 7

y/x	CeCGSR_e_Park_wNC7	CeCGSR_e_Park_wNC1C2	CeCGSR_e_Park_wNC2C3	CeCGSR_e_Park_wNC2C4	CeCGSR_e_Park_wNC2C5
1	99,999	248	248	248	142

P2D2 Decel Pressure - C6 - Part 8

y/x	CeCGSR_e_Park_wNC2C6	CeCGSR_e_Park_wNC3C4	CeCGSR_e_Park_wNC3C5	CeCGSR_e_Park_wNC3C6	CeCGSR_e_Park_wNC4C5
1	99,999	666	666	99,999	666

P2D2 Decel Pressure - C6 - Part 9

y/x	CeCGSR_e_Park_wNC4C6	CeCGSR_e_Park_wNC1C2C3C6	CeCGSR_e_Reverse	CeCGSR_e_FirstLckd	CeCGSR_e_FirstFW

Initial Supporting table - P2D2 Decel Pressure - C6

1	99,999	666	99,999	142	142

P2D2 Decel Pressure - C6 - Part 10

y/x	CeCGSR_e_SecondLckd	CeCGSR_e_SecondFW	CeCGSR_e_Third	CeCGSR_e_Fourth	CeCGSR_e_Fifth
1	248	248	666	99,999	99,999

P2D2 Decel Pressure - C6 - Part 11

y/x	CeCGSR_e_Sixth	CeCGSR_e_Seventh	CeCGSR_e_Eighth	CeCGSR_e_Ninth	CeCGSR_e_Tenth
1	99,999	99,999	99,999	99,999	99,999

P2D2 Decel Pressure - C6 - Part 12

y/x					
1					

Initial Supporting table - P2D2 Decel Pressure - C7

Description: clutch 7 command pressure threshold below which clutch 7 is considered released, such that, clutch 7 cannot carry enough clutch torque that would induce a vehicle deceleration above the design safety metric

Value Units: kPa
X Unit: command gear
Y Units: not applicable, no units, single row table f(command gear)

P2D2 Decel Pressure - C7 - Part 1

y/x	CeCGSR_e_NullForSched	CeCGSR_e_NeutralNoClutch	CeCGSR_e_NeutralC1	CeCGSR_e_NeutralC2	CeCGSR_e_NeutralC3
1	99,999	99,999	99,999	99,999	99,999

P2D2 Decel Pressure - C7 - Part 2

y/x	CeCGSR_e_NeutralC4	CeCGSR_e_NeutralC5	CeCGSR_e_NeutralC6	CeCGSR_e_NeutralC7	CeCGSR_e_NeutralC1C2
1	99,999	99,999	99,999	99,999	99,999

P2D2 Decel Pressure - C7 - Part 3

y/x	CeCGSR_e_NeutralC1C3	CeCGSR_e_NeutralC1C4	CeCGSR_e_NeutralC1C5	CeCGSR_e_NeutralC2C3	CeCGSR_e_NeutralC2C4
1	99,999	99,999	99,999	99,999	99,999

P2D2 Decel Pressure - C7 - Part 4

y/x	CeCGSR_e_NeutralC2C5	CeCGSR_e_NeutralC2C6	CeCGSR_e_NeutralC3C4	CeCGSR_e_NeutralC3C5	CeCGSR_e_NeutralC3C6
1	99,999	99,999	99,999	99,999	99,999

P2D2 Decel Pressure - C7 - Part 5

y/x	CeCGSR_e_NeutralC4C5	CeCGSR_e_NeutralC4C6	CeCGSR_e_NeutralC1C2C3C6	CeCGSR_e_Park_wNC	CeCGSR_e_Park_wNC1
1	99,999	99,999	99,999	99,999	99,999

P2D2 Decel Pressure - C7 - Part 6

y/x	CeCGSR_e_Park_wNC2	CeCGSR_e_Park_wNC3	CeCGSR_e_Park_wNC4	CeCGSR_e_Park_wNC5	CeCGSR_e_Park_wNC6
1	99,999	99,999	99,999	99,999	99,999

P2D2 Decel Pressure - C7 - Part 7

y/x	CeCGSR_e_Park_wNC7	CeCGSR_e_Park_wNC1C2	CeCGSR_e_Park_wNC2C3	CeCGSR_e_Park_wNC2C4	CeCGSR_e_Park_wNC2C5
1	99,999	99,999	99,999	99,999	99,999

P2D2 Decel Pressure - C7 - Part 8

y/x	CeCGSR_e_Park_wNC2C6	CeCGSR_e_Park_wNC3C4	CeCGSR_e_Park_wNC3C5	CeCGSR_e_Park_wNC3C6	CeCGSR_e_Park_wNC4C5
1	99,999	99,999	99,999	99,999	99,999

P2D2 Decel Pressure - C7 - Part 9

y/x	CeCGSR_e_Park_wNC4C6	CeCGSR_e_Park_wNC1C2C3C6	CeCGSR_e_Reverse	CeCGSR_e_FirstLckd	CeCGSR_e_FirstFW

Initial Supporting table - P2D2 Decel Pressure - C7

1	99,999	99,999	99,999	99,999	99,999

P2D2 Decel Pressure - C7 - Part 10

y/x	CeCGSR_e_SecondLckd	CeCGSR_e_SecondFW	CeCGSR_e_Third	CeCGSR_e_Fourth	CeCGSR_e_Fifth
1	99,999	99,999	99,999	99,999	99,999

P2D2 Decel Pressure - C7 - Part 11

y/x	CeCGSR_e_Sixth	CeCGSR_e_Seventh	CeCGSR_e_Eighth	CeCGSR_e_Ninth	CeCGSR_e_Tenth
1	99,999	99,999	99,999	99,999	99,999

P2D2 Decel Pressure - C7 - Part 12

y/x					
1					

Initial Supporting table - transmission fluid temperature warm up time

Description:

Value Units: transmission fluid temperature normal warn up time, seconds
X Unit: transmission fluid temperature at controller power up, °C

y/x	-40.00	-30.00	-20.00	0.00	20.00
1	1,800.0	1,400.0	1,000.0	500.0	10.0

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required		MIL Illum.
Transmission Range Selector X-Axis Position Sensor 1	P082C	Monitoring of Gear Lever X position sensor 1 for Out of Range Check- High	Raw PWM signal value from the shifter 1 of Gear Lever X Position Sensor	>=	95.0147	%	(				0.5	sec	2 Trips
							System Power Mode	=	Run crank active calibration	-			
							OR						
							System Power Mode	=	Accessory On calibration	-			
							)			-			
							for time	>=	0.4	sec			
							No pending or confirmed DTCs	=	see sheet inhibit tables	-			
							Basic enabling conditions are met	=	see sheet enable tables	-			
	P082B	Monitoring of Gear Lever X position sensor 1 for Out of Range Check- Low	Raw PWM signal value from the shifter 1 of Gear Lever X Position Sensor	<=	4.9853	%	(				0.5	sec	2 Trips
							System Power Mode	=	Run crank active calibration	-			
							OR						
							System Power Mode	=	Accessory On calibration	-			
							)			-			
							for time	>=	0.4	sec			
							No pending or confirmed DTCs	=	see sheet inhibit tables	-			
							Basic enabling conditions are met	=	see sheet enable tables	-			
	P082A	**Path 1:** CAN Communication signaL for Shift Lever Diagnosis of Primary Gear Lever X Position Sensor 1	CAN Communication signaL for Shift Lever Diagnosis of Primary Gear Lever X Position Sensor 1	=	TRUE	-	(				0.5	sec	2 Trips
			OR				System Power Mode	=	Run crank active calibration	-			
			CAN Communication signaL for Shift Lever Diagnosis of Secondary Gear Lever X Position Sensor 1	=	TRUE	-	OR						
							System Power Mode	=	Accessory On calibration	-			
							)			-			
							for time	>=	0.4	sec			
							ETRS Linear Shifter Alpha 1 Sample Circuit Error is not set	=	TRUE	-			
							No pending or confirmed DTCs	=	see sheet inhibit tables	-			
							Basic enabling conditions are met	=	see sheet enable tables	-			

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
		Path 2: ETRS LInear Shifter Both Combinations Using Alpha 1 Outside of Field Of Play Flag	ETRS LInear Shifter Both Combinations Using Alpha 1 Outside of Field Of Play Flag	= TRUE -	(		0.5 sec	2 Trips
					System Power Mode	= Run crank active calibration -		
					OR			
					System Power Mode	= Accessory On calibration -		
					)	-		
					for time	>= 0.4 sec		
					((			
					ETRS Linear Shifter X Signal From Alpha 1 Beta 1 Combination	> 0.1131 -		
					OR			
					ETRS Linear Shifter X Signal From Alpha 1 Beta 1 Combination	< -0.099 -		
					OR			
					ETRS Linear Shifter Y Signal From Alpha 1 Beta 1 Combination	> 0.5091 -		
					OR			
					ETRS Linear Shifter Y Signal From Alpha 1 Beta 1 Combination	< -0.5374 -		
					)			
					(			
					ETRS Linear Shifter X Signal From Alpha 1 Beta 1 Combination	> 0.1131 -		
					OR			
					ETRS Linear Shifter X Signal From Alpha 1 Beta 1 Combination	< -0.099 -		
					OR			
					ETRS Linear Shifter Y Signal From Alpha 1 Beta 1 Combination	> 0.5091 -		
					OR			
					ETRS Linear Shifter Y Signal From Alpha 1 Beta 1 Combination	< -0.5374 -		
					)			
					(			
					ETRS Linear Shifter X Signal From Alpha 1 Beta 1 Combination	> 0.1131 -		
					OR			
					ETRS Linear Shifter X Signal From Alpha 1 Beta 1 Combination	< -0.099 -		
					OR			
					ETRS Linear Shifter Y Signal From Alpha 1 Beta 1 Combination	> 0.5091 -		
					OR			
					ETRS Linear Shifter Y Signal From Alpha 1 Beta 1 Combination	< -0.5374 -		
					))			
					((			
					ETRS Linear Shifter X Signal From Alpha 1 Beta 2 Combination	> 0.1131 -		
					OR			
					ETRS Linear Shifter X Signal From Alpha 1 Beta 2 Combination	< -0.099 -		
					OR			
					ETRS Linear Shifter Y Signal From Alpha 1 Beta 2 Combination	> 0.5091 -		
					OR			
					ETRS Linear Shifter Y Signal From Alpha 1 Beta 2 Combination	< -0.5374 -		
					)			
					(			

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required		MIL Illum.
							ETRS Linear Shifter X Signal From Alpha 1 Beta 2 Combination	>	0.1131	-			
							OR						
							ETRS Linear Shifter X Signal From Alpha 1 Beta 2 Combination	<	-0.099	-			
							OR						
							ETRS Linear Shifter Y Signal From Alpha 1 Beta 2 Combination	>	0.5091	-			
							OR						
							ETRS Linear Shifter Y Signal From Alpha 1 Beta 2 Combination	<	-0.5374	-			
							)						
							(						
							ETRS Linear Shifter X Signal From Alpha 1 Beta 2 Combination	>	0.1131	-			
							OR						
							ETRS Linear Shifter X Signal From Alpha 1 Beta 2 Combination	<	-0.099	-			
							OR						
							ETRS Linear Shifter Y Signal From Alpha 1 Beta 2 Combination	>	0.5091	-			
							OR						
							ETRS Linear Shifter Y Signal From Alpha 1 Beta 2 Combination	<	-0.5374	-			
							))						
							for time	>=	0.4	sec			
							No pending or confirmed DTCs	=	see sheet inhibit tables	-			
							Basic enabling conditions are met	=	see sheet enable tables	-			
		Path 3: Monitoring signal variation between Shifter 1 and Shifter 2 and checking the validity of the combinations of Linear Shifters.	Absolute value of difference between Raw PWM signal from Shifter Alpha 1 and Adjusted signal from Shifter Alpha 2	>=	12.0235	%	(				0.5	sec	2 Trips
			ETRS Linear Shifter Both Combinations Using Alpha 2 Outside of Field Of Play Flag	=	FALSE	-	System Power Mode	=	Run crank active calibration	-			
							OR						
							System Power Mode	=	Accessory On calibration	-			
							)			-			
							for time	>=	0.4	sec			
							((						
							ETRS Linear Shifter X Signal From Alpha 2 Beta 1 Combination	<=	0.1131	-			
							ETRS Linear Shifter X Signal From Alpha 2 Beta 1 Combination	>=	-0.099	-			
							ETRS Linear Shifter Y Signal From Alpha 2 Beta 1 Combination	<=	0.5091	-			
							ETRS Linear Shifter Y Signal From Alpha 2 Beta 1 Combination	>=	-0.5374	-			
							)						
							OR						
							(						
							ETRS Linear Shifter X Signal From Alpha 2 Beta 1 Combination	<=	0.1131	-			
							ETRS Linear Shifter X Signal From Alpha 2 Beta 1 Combination	>=	-0.099	-			
							ETRS Linear Shifter Y Signal From Alpha 2 Beta 1 Combination	<=	0.5091	-			
							ETRS Linear Shifter Y Signal From Alpha 2 Beta 1 Combination	>=	-0.5374	-			
							)						
							OR						

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required		MIL Illum.
							(						
							ETRS Linear Shifter X Signal From Alpha 2 Beta 1 Combination	<=	0.1131	-			
							ETRS Linear Shifter X Signal From Alpha 2 Beta 1 Combination	>=	-0.099	-			
							ETRS Linear Shifter Y Signal From Alpha 2 Beta 1 Combination	<=	0.5091	-			
							ETRS Linear Shifter Y Signal From Alpha 2 Beta 1 Combination	>=	-0.5374	-			
							))						
							((						
							ETRS Linear Shifter X Signal From Alpha 2 Beta 2 Combination	<=	0.1131	-			
							ETRS Linear Shifter X Signal From Alpha 2 Beta 2 Combination	>=	-0.099	-			
							ETRS Linear Shifter Y Signal From Alpha 2 Beta 2 Combination	<=	0.5091	-			
							ETRS Linear Shifter Y Signal From Alpha 2 Beta 2 Combination	>=	-0.5374	-			
							)						
							OR						
							(						
							ETRS Linear Shifter X Signal From Alpha 2 Beta 2 Combination	<=	0.1131	-			
							ETRS Linear Shifter X Signal From Alpha 2 Beta 2 Combination	>=	-0.099	-			
							ETRS Linear Shifter Y Signal From Alpha 2 Beta 2 Combination	<=	0.5091	-			
							ETRS Linear Shifter Y Signal From Alpha 2 Beta 2 Combination	>=	-0.5374	-			
							)						
							OR						
							(						
							ETRS Linear Shifter X Signal From Alpha 2 Beta 2 Combination	<=	0.1131	-			
							ETRS Linear Shifter X Signal From Alpha 2 Beta 2 Combination	>=	-0.099	-			
							ETRS Linear Shifter Y Signal From Alpha 2 Beta 2 Combination	<=	0.5091	-			
							ETRS Linear Shifter Y Signal From Alpha 2 Beta 2 Combination	>=	-0.5374	-			
							))						
							No pending or confirmed DTCs	=	see sheet inhibit tables	-			
							Basic enabling conditions are met	=	see sheet enable tables	-			
		Path 4: Monitoring signal variation between Shifter 1 and Shifter 2	Absolute value of difference between Raw PWM signal from Shifter Alpha 1 and Adjusted signal from Shifter Alpha 2	>=	12.0235	%	(				0.5	sec	2 Trips
							System Power Mode	=	Run crank active calibration	-			
							OR						
							System Power Mode	=	Accessory On calibration	-			
							)			-			
							for time	>=	0.4	sec			
							No pending or confirmed DTCs	=	see sheet inhibit tables	-			
							Basic enabling conditions are met	=	see sheet enable tables	-			

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
		Path 5: Advanced performance diagnosis and monitoring signal variation between Shifter 1 and Shifter 2	Absolute value of difference between Raw PWM signal from Shifter Alpha 1 and Adjusted signal from Shifter Alpha 2	>= 12.0235 %	(		0.5 sec	2 Trips
					System Power Mode	= Run crank active calibration -		
					OR			
					System Power Mode	= Accessory On calibration -		
					)	-		
					for time	>= 0.4 sec		
					((			
					ETRS Linear Shifter X Signal From Alpha 2 Beta 1 Combination	<= 0.1131 -		
					ETRS Linear Shifter X Signal From Alpha 2 Beta 1 Combination	>= -0.099 -		
					ETRS Linear Shifter Y Signal From Alpha 2 Beta 1 Combination	<= 0.5091 -		
					ETRS Linear Shifter Y Signal From Alpha 2 Beta 1 Combination	>= -0.5374 -		
					)			
					OR			
					(			
					ETRS Linear Shifter X Signal From Alpha 2 Beta 1 Combination	<= 0.1131 -		
					ETRS Linear Shifter X Signal From Alpha 2 Beta 1 Combination	>= -0.099 -		
					ETRS Linear Shifter Y Signal From Alpha 2 Beta 1 Combination	<= 0.5091 -		
					ETRS Linear Shifter Y Signal From Alpha 2 Beta 1 Combination	>= -0.5374 -		
					)			
					OR			
					(			
					ETRS Linear Shifter X Signal From Alpha 2 Beta 1 Combination	<= 0.1131 -		
					ETRS Linear Shifter X Signal From Alpha 2 Beta 1 Combination	>= -0.099 -		
					ETRS Linear Shifter Y Signal From Alpha 2 Beta 1 Combination	<= 0.5091 -		
					ETRS Linear Shifter Y Signal From Alpha 2 Beta 1 Combination	>= -0.5374 -		
					))			
					((			
					ETRS Linear Shifter X Signal From Alpha 2 Beta 2 Combination	<= 0.1131 -		
					ETRS Linear Shifter X Signal From Alpha 2 Beta 2 Combination	>= -0.099 -		
					ETRS Linear Shifter Y Signal From Alpha 2 Beta 2 Combination	<= 0.5091 -		
					ETRS Linear Shifter Y Signal From Alpha 2 Beta 2 Combination	>= -0.5374 -		
					)			
					OR			

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					(			
					ETRS Linear Shifter X Signal From Alpha 2 Beta 2 Combination	<= 0.1131 -		
					ETRS Linear Shifter X Signal From Alpha 2 Beta 2 Combination	>= -0.099 -		
					ETRS Linear Shifter Y Signal From Alpha 2 Beta 2 Combination	<= 0.5091 -		
					ETRS Linear Shifter Y Signal From Alpha 2 Beta 2 Combination	>= -0.5374 -		
					)			
					OR			
					(			
					ETRS Linear Shifter X Signal From Alpha 2 Beta 2 Combination	<= 0.1131 -		
					ETRS Linear Shifter X Signal From Alpha 2 Beta 2 Combination	>= -0.099 -		
					ETRS Linear Shifter Y Signal From Alpha 2 Beta 2 Combination	<= 0.5091 -		
					ETRS Linear Shifter Y Signal From Alpha 2 Beta 2 Combination	>= -0.5374 -		
					))			
					ETRS Diagnotics - Advanced performance diagnostics enabled	= TRUE -		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enabling conditions are met	= see sheet enable tables -		
	P1789	ETRS TRCR Diagnostics - Current Transmission Range Unknown	Filtered gear lever current range is undefined	= TRUE _	ETRS TRCR Diagnostics - Current Range Diagnostics Enable Flag is set	= TRUE _	0 sec	2 Trips
			for time	>= 0.5 sec	System is not in PARK mode and system power is used by accessories or system wakeup	= TRUE _		
					Ignition ON	= TRUE		
					(			
					Current range of gear lever is in PARK position	= FALSE _		
					Initialization of gear selection in progress is active	= FALSE _		
					)			
					OR			
					(			
					Current range command is in parking range	= FALSE		
					Current range command is in power mode OFF range	= FALSE _		
					)			
					Engine Transmission Range Selection brake command is in deny driver override command	= FALSE _		
					Engine Transmission Range Selection brake command is in allow driver override command	= FALSE _		
					Manufacturer Enable Counter used to automatically arm Seed & Key	= 0 _		
					Basic enabling conditions are met	= see sheet enable tables -		

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Transmission Range Selector X-Axis Position Sensor 2	P089D	Monitoring of Gear Lever X position sensor 2 for Out of Range Check- High	Raw PWM signal value from the shifter 2 of Gear Lever X Position Sensor	>= 95.0147 %	(System Power Mode OR System Power Mode) for time No pending or confirmed DTCs Basic enabling conditions are met	 = Run crank active calibration - = Accessory On calibration - - >= 0.4 sec = see sheet inhibit tables - = see sheet enable tables -	0.5 sec	2 Trips
	P089C	Monitoring of Gear Lever X position sensor 2 for Out of Range Check- Low	Raw PWM signal value from the shifter 2 of Gear Lever X Position Sensor	<= 4.9853 %	(System Power Mode OR System Power Mode) for time No pending or confirmed DTCs Basic enabling conditions are met	 = Run crank active calibration - = Accessory On calibration - - >= 0.4 sec = see sheet inhibit tables - = see sheet enable tables -	0.5 sec	2 Trips
	P089B	**Path 1:** CAN Communication signaL for Shift Lever Diagnosis of Primary Gear Lever X Position Sensor 2	CAN Communication signaL for Shift Lever Diagnosis of Primary Gear Lever X Position Sensor 2 OR CAN Communication signaL for Shift Lever Diagnosis of Secondary Gear Lever X Position Sensor 2	= TRUE - = TRUE -	(System Power Mode OR System Power Mode) for time ETRS Linear Shifter Alpha 2 Sample Circuit Error is not set No pending or confirmed DTCs Basic enabling conditions are met	 = Run crank active calibration - = Accessory On calibration - - >= 0.4 sec = TRUE - = see sheet inhibit tables - = see sheet enable tables -	0.5 sec	2 Trips

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
		Path 2: ETRS LInear Shifter Both Combinations Using Alpha 2 Outside of Field Of Play Flag	ETRS LInear Shifter Both Combinations Using Alpha 2 Outside of Field Of Play Flag	= TRUE -	(		0.5 sec	2 Trips
					System Power Mode	= Run crank active calibration -		
					OR			
					System Power Mode	= Accessory On calibration -		
					)	-		
					for time	>= 0.4 sec		
					((			
					ETRS Linear Shifter X Signal From Alpha 2 Beta 1 Combination	> 0.1131 -		
					OR			
					ETRS Linear Shifter X Signal From Alpha 2 Beta 1 Combination	< -0.099 -		
					OR			
					ETRS Linear Shifter Y Signal From Alpha 2 Beta 1 Combination	> 0.5091 -		
					OR			
					ETRS Linear Shifter Y Signal From Alpha 2 Beta 1 Combination	< -0.5374 -		
					)			
					(			
					ETRS Linear Shifter X Signal From Alpha 2 Beta 1 Combination	> 0.1131 -		
					OR			
					ETRS Linear Shifter X Signal From Alpha 2 Beta 1 Combination	< -0.099 -		
					OR			
					ETRS Linear Shifter Y Signal From Alpha 2 Beta 1 Combination	> 0.5091 -		
					OR			
					ETRS Linear Shifter Y Signal From Alpha 2 Beta 1 Combination	< -0.5374 -		
					)			
					(			
					ETRS Linear Shifter X Signal From Alpha 2 Beta 1 Combination	> 0.1131 -		
					OR			
					ETRS Linear Shifter X Signal From Alpha 2 Beta 1 Combination	< -0.099 -		
					OR			
					ETRS Linear Shifter Y Signal From Alpha 2 Beta 1 Combination	> 0.5091 -		
					OR			
					ETRS Linear Shifter Y Signal From Alpha 2 Beta 1 Combination	< -0.5374 -		
					))			
					(			
					ETRS Linear Shifter X Signal From Alpha 2 Beta 2 Combination	> 0.1131 -		
					OR			
					ETRS Linear Shifter X Signal From Alpha 2 Beta 2 Combination	< -0.099 -		
					OR			
					ETRS Linear Shifter Y Signal From Alpha 2 Beta 2 Combination	> 0.5091 -		
					OR			
					ETRS Linear Shifter Y Signal From Alpha 2 Beta 2 Combination	< -0.5374 -		
					)			

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required		MIL Illum.
							(						
							ETRS Linear Shifter X Signal From Alpha 2 Beta 2 Combination	>	0.1131	-			
							OR						
							ETRS Linear Shifter X Signal From Alpha 2 Beta 2 Combination	<	-0.099	-			
							OR						
							ETRS Linear Shifter Y Signal From Alpha 2 Beta 2 Combination	>	0.5091	-			
							OR						
							ETRS Linear Shifter Y Signal From Alpha 2 Beta 2 Combination	<	-0.5374	-			
							)						
							(						
							ETRS Linear Shifter X Signal From Alpha 2 Beta 2 Combination	>	0.1131	-			
							OR						
							ETRS Linear Shifter X Signal From Alpha 2 Beta 2 Combination	<	-0.099	-			
							OR						
							ETRS Linear Shifter Y Signal From Alpha 2 Beta 2 Combination	>	0.5091	-			
							OR						
							ETRS Linear Shifter Y Signal From Alpha 2 Beta 2 Combination	<	-0.5374	-			
							))						
							No pending or confirmed DTCs	=	see sheet inhibit tables	-			
							Basic enabling conditions are met	=	see sheet enable tables	-			
		Path 3: Monitoring signal variation between Shifter 1 and Shifter 2 and checking the validity of the combinations of Linear Shifters.	Absolute value of difference between Raw PWM signal from Shifter Alpha 1 and Adjusted signal from Shifter Alpha 2	>=	12.0235	%	(				0.5	sec	2 Trips
			ETRS Linear Shifter Both Combinations Using Alpha 2 Outside of Field Of Play Flag	=	FALSE	-	System Power Mode	=	Run crank active calibration	-			
							OR						
							System Power Mode	=	Accessory On calibration	-			
							)			-			
							for time	>=	0.4	sec			
							((						
							ETRS Linear Shifter X Signal From Alpha 1 Beta 1 Combination	<=	0.1131	-			
							ETRS Linear Shifter X Signal From Alpha 1 Beta 1 Combination	>=	-0.099	-			
							ETRS Linear Shifter Y Signal From Alpha 1 Beta 1 Combination	<=	0.5091	-			
							ETRS Linear Shifter Y Signal From Alpha 1 Beta 1 Combination	>=	-0.5374	-			
							)						
							OR						
							(						
							ETRS Linear Shifter X Signal From Alpha 1 Beta 1 Combination	<=	0.1131	-			
							ETRS Linear Shifter X Signal From Alpha 1 Beta 1 Combination	>=	-0.099	-			
							ETRS Linear Shifter Y Signal From Alpha 1 Beta 1 Combination	<=	0.5091	-			
							ETRS Linear Shifter Y Signal From Alpha 1 Beta 1 Combination	>=	-0.5374	-			
							)						
							OR						

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required		MIL Illum.
							(						
							ETRS Linear Shifter X Signal From Alpha 1 Beta 1 Combination	<=	0.1131	-			
							ETRS Linear Shifter X Signal From Alpha 1 Beta 1 Combination	>=	-0.099	-			
							ETRS Linear Shifter Y Signal From Alpha 1 Beta 1 Combination	<=	0.5091	-			
							ETRS Linear Shifter Y Signal From Alpha 1 Beta 1 Combination	>=	-0.5374	-			
							))						
							((						
							ETRS Linear Shifter X Signal From Alpha 1 Beta 2 Combination	<=	0.1131	-			
							ETRS Linear Shifter X Signal From Alpha 1 Beta 2 Combination	>=	-0.099	-			
							ETRS Linear Shifter Y Signal From Alpha 1 Beta 2 Combination	<=	0.5091	-			
							ETRS Linear Shifter Y Signal From Alpha 1 Beta 2 Combination	>=	-0.5374	-			
							)						
							OR						
							(						
							ETRS Linear Shifter X Signal From Alpha 1 Beta 2 Combination	<=	0.1131	-			
							ETRS Linear Shifter X Signal From Alpha 1 Beta 2 Combination	>=	-0.099	-			
							ETRS Linear Shifter Y Signal From Alpha 1 Beta 2 Combination	<=	0.5091	-			
							ETRS Linear Shifter Y Signal From Alpha 1 Beta 2 Combination	>=	-0.5374	-			
							)						
							OR						
							(						
							ETRS Linear Shifter X Signal From Alpha 1 Beta 2 Combination	<=	0.1131	-			
							ETRS Linear Shifter X Signal From Alpha 1 Beta 2 Combination	>=	-0.099	-			
							ETRS Linear Shifter Y Signal From Alpha 1 Beta 2 Combination	<=	0.5091	-			
							ETRS Linear Shifter Y Signal From Alpha 1 Beta 2 Combination	>=	-0.5374	-			
							))						
							No pending or confirmed DTCs	=	see sheet inhibit tables	-			
							Basic enabling conditions are met	=	see sheet enable tables	-			
		Path 4: Monitoring signal variation between Shifter 1 and Shifter 2	Absolute value of difference between Raw PWM signal from Shifter Alpha 1 and Adjusted signal from Shifter Alpha 2	>=	12.0235	%	(				0.5	sec	2 Trips
							System Power Mode	=	Run crank active calibration	-			
							OR						
							System Power Mode	=	Accessory On calibration	-			
							)			-			
							for time	>=	0.4	sec			
							No pending or confirmed DTCs	=	see sheet inhibit tables	-			
							Basic enabling conditions are met	=	see sheet enable tables	-			

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
		Path 5: Advanced performance diagnosis and monitoring signal variation between Shifter 1 and Shifter 2	Absolute value of difference between Raw PWM signal from Shifter Alpha 1 and Adjusted signal from Shifter Alpha 2	>= 12.0235 %	(		0.5 sec	2 Trips
					System Power Mode	= Run crank active calibration -		
					OR			
					System Power Mode	= Accessory On calibration -		
					)	-		
					for time	>= 0.4 sec		
					((			
					ETRS Linear Shifter X Signal From Alpha 1 Beta 1 Combination	<= 0.1131 -		
					ETRS Linear Shifter X Signal From Alpha 1 Beta 1 Combination	>= -0.099 -		
					ETRS Linear Shifter Y Signal From Alpha 1 Beta 1 Combination	<= 0.5091 -		
					ETRS Linear Shifter Y Signal From Alpha 1 Beta 1 Combination	>= -0.5374 -		
					)			
					OR			
					(			
					ETRS Linear Shifter X Signal From Alpha 1 Beta 1 Combination	<= 0.1131 -		
					ETRS Linear Shifter X Signal From Alpha 1 Beta 1 Combination	>= -0.099 -		
					ETRS Linear Shifter Y Signal From Alpha 1 Beta 1 Combination	<= 0.5091 -		
					ETRS Linear Shifter Y Signal From Alpha 1 Beta 1 Combination	>= -0.5374 -		
					)			
					OR			
					(			
					ETRS Linear Shifter X Signal From Alpha 1 Beta 1 Combination	<= 0.1131 -		
					ETRS Linear Shifter X Signal From Alpha 1 Beta 1 Combination	>= -0.099 -		
					ETRS Linear Shifter Y Signal From Alpha 1 Beta 1 Combination	<= 0.5091 -		
					ETRS Linear Shifter Y Signal From Alpha 1 Beta 1 Combination	>= -0.5374 -		
					))			
					((			
					ETRS Linear Shifter X Signal From Alpha 1 Beta 2 Combination	<= 0.1131 -		
					ETRS Linear Shifter X Signal From Alpha 1 Beta 2 Combination	>= -0.099 -		
					ETRS Linear Shifter Y Signal From Alpha 1 Beta 2 Combination	<= 0.5091 -		
					ETRS Linear Shifter Y Signal From Alpha 1 Beta 2 Combination	>= -0.5374 -		
					)			
					OR			
					(			
					ETRS Linear Shifter X Signal From Alpha 1 Beta 2 Combination	<= 0.1131 -		
					ETRS Linear Shifter X Signal From Alpha 1 Beta 2 Combination	>= -0.099 -		
					ETRS Linear Shifter Y Signal From Alpha 1 Beta 2 Combination	<= 0.5091 -		
					ETRS Linear Shifter Y Signal From Alpha 1 Beta 2 Combination	>= -0.5374 -		
					)			

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					OR (			
					ETRS Linear Shifter X Signal From Alpha 1 Beta 2 Combination	<= 0.1131 -		
					ETRS Linear Shifter X Signal From Alpha 1 Beta 2 Combination	>= -0.099 -		
					ETRS Linear Shifter Y Signal From Alpha 1 Beta 2 Combination	<= 0.5091 -		
					ETRS Linear Shifter Y Signal From Alpha 1 Beta 2 Combination))	>= -0.5374 -		
					ETRS Diagnotics - Advanced performance diagnostics enabled	= TRUE -		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enabling conditions are met	= see sheet enable tables -		
Transmission Range Selector Y-Axis Position Sensor 1	P082F	Monitoring of Gear Lever Y position sensor 1 for Out of Range Check- High	Raw PWM signal value from the shifter 1 of Gear Lever Y Position Sensor	>= 95.0147 %	(		0.5 sec	2 Trips
					System Power Mode	= Run crank active calibration -		
					OR System Power Mode	= Accessory On calibration -		
					)	-		
					for time	>= 0.4 sec		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enabling conditions are met	= see sheet enable tables -		
	P082E	Monitoring of Gear Lever Y position sensor 1 for Out of Range Check- Low	Raw PWM signal value from the shifter 1 of Gear Lever Y Position Sensor	<= 4.9853 %	(		0.5 sec	2 Trips
					System Power Mode	= Run crank active calibration -		
					OR System Power Mode	= Accessory On calibration -		
					)	-		
					for time	>= 0.4 sec		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enabling conditions are met	= see sheet enable tables -		
	P082D	**Path 1:** CAN Communication signaL for Shift Lever Diagnosis of Primary Gear Lever Y Position Sensor 1	CAN Communication signaL for Shift Lever Diagnosis of Primary Gear Lever Y Position Sensor 1 OR	= TRUE -	(		0.5 sec	2 Trips
					System Power Mode	= Run crank active calibration -		
			CAN Communication signaL for Shift Lever Diagnosis of Secondary Gear Lever Y Position Sensor 1	= TRUE -	OR			
					System Power Mode	= Accessory On calibration -		
					)	-		
					for time	>= 0.4 sec		
					ETRS Linear Shifter Beta 1 Sample Circuit Error is not set	= TRUE -		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enabling conditions are met	= see sheet enable tables -		

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
		Path 2: ETRS LInear Shifter Both Combinations Using Beta 1 Outside of Field Of Play Flag	ETRS LInear Shifter Both Combinations Using Beta 1 Outside of Field Of Play Flag	= TRUE -	(		0.5 sec	2 Trips
					System Power Mode	= Run crank active calibration -		
					OR			
					System Power Mode	= Accessory On calibration -		
					)	-		
					for time	>= 0.4 sec		
					((			
					ETRS Linear Shifter X Signal From Alpha 1 Beta 1 Combination	> 0.1131 -		
					OR			
					ETRS Linear Shifter X Signal From Alpha 1 Beta 1 Combination	< -0.099 -		
					OR			
					ETRS Linear Shifter Y Signal From Alpha 1 Beta 1 Combination	> 0.5091 -		
					OR			
					ETRS Linear Shifter Y Signal From Alpha 1 Beta 1 Combination	< -0.5374 -		
					)			
					(			
					ETRS Linear Shifter X Signal From Alpha 1 Beta 1 Combination	> 0.1131 -		
					OR			
					ETRS Linear Shifter X Signal From Alpha 1 Beta 1 Combination	< -0.099 -		
					OR			
					ETRS Linear Shifter Y Signal From Alpha 1 Beta 1 Combination	> 0.5091 -		
					OR			
					ETRS Linear Shifter Y Signal From Alpha 1 Beta 1 Combination	< -0.5374 -		
					)			
					(			
					ETRS Linear Shifter X Signal From Alpha 1 Beta 1 Combination	> 0.1131 -		
					OR			
					ETRS Linear Shifter X Signal From Alpha 1 Beta 1 Combination	< -0.099 -		
					OR			
					ETRS Linear Shifter Y Signal From Alpha 1 Beta 1 Combination	> 0.5091 -		
					OR			
					ETRS Linear Shifter Y Signal From Alpha 1 Beta 1 Combination	< -0.5374 -		
					))			
					((			
					ETRS Linear Shifter X Signal From Alpha 2 Beta 1 Combination	> 0.1131 -		
					OR			
					ETRS Linear Shifter X Signal From Alpha 2 Beta 1 Combination	< -0.099 -		
					OR			
					ETRS Linear Shifter Y Signal From Alpha 2 Beta 1 Combination	> 0.5091 -		
					OR			
					ETRS Linear Shifter Y Signal From Alpha 2 Beta 1 Combination	< -0.5374 -		
					)			

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					(			
					ETRS Linear Shifter X Signal From Alpha 2 Beta 1 Combination	> 0.1131 -		
					OR			
					ETRS Linear Shifter X Signal From Alpha 2 Beta 1 Combination	< -0.099 -		
					OR			
					ETRS Linear Shifter Y Signal From Alpha 2 Beta 1 Combination	> 0.5091 -		
					OR			
					ETRS Linear Shifter Y Signal From Alpha 2 Beta 1 Combination	< -0.5374 -		
					)			
					(			
					ETRS Linear Shifter X Signal From Alpha 2 Beta 1 Combination	> 0.1131 -		
					OR			
					ETRS Linear Shifter X Signal From Alpha 2 Beta 1 Combination	< -0.099 -		
					OR			
					ETRS Linear Shifter Y Signal From Alpha 2 Beta 1 Combination	> 0.5091 -		
					OR			
					ETRS Linear Shifter Y Signal From Alpha 2 Beta 1 Combination	< -0.5374 -		
					))			
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enabling conditions are met	= see sheet enable tables -		
		Path 3: Monitoring signal variation between Shifter 1 and Shifter 2 and checking the validity of the combinations of Linear Shifters.	Absolute value of difference between Raw PWM signal from Shifter Beta 1 and Adjusted signal from Shifter Beta 2	>= 12.0235 %	(		0.5 sec	2 Trips
			ETRS Linear Shifter Both Combinations Using Beta 2 Outside of Field Of Play Flag	= FALSE -	System Power Mode	= Run crank active calibration -		
					OR			
					System Power Mode	= Accessory On calibration -		
					)	-		
					for time	>= 0.4 sec		
					ETRS Linear Shifter X Signal From Alpha 1 Beta 2 Combination	<= 0.1131 -		
					ETRS Linear Shifter X Signal From Alpha 1 Beta 2 Combination	>= -0.099 -		
					ETRS Linear Shifter Y Signal From Alpha 1 Beta 2 Combination	<= 0.5091 -		
					ETRS Linear Shifter Y Signal From Alpha 1 Beta 2 Combination	>= -0.5374 -		
					)			
					OR			
					(			
					ETRS Linear Shifter X Signal From Alpha 1 Beta 2 Combination	<= 0.1131 -		
					ETRS Linear Shifter X Signal From Alpha 1 Beta 2 Combination	>= -0.099 -		
					ETRS Linear Shifter Y Signal From Alpha 1 Beta 2 Combination	<= 0.5091 -		
					ETRS Linear Shifter Y Signal From Alpha 1 Beta 2 Combination	>= -0.5374 -		
					)			
					OR			

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					(			
					ETRS Linear Shifter X Signal From Alpha 1 Beta 2 Combination	<= 0.1131 -		
					ETRS Linear Shifter X Signal From Alpha 1 Beta 2 Combination	>= -0.099 -		
					ETRS Linear Shifter Y Signal From Alpha 1 Beta 2 Combination	<= 0.5091 -		
					ETRS Linear Shifter Y Signal From Alpha 1 Beta 2 Combination	>= -0.5374 -		
					))			
					((			
					ETRS Linear Shifter X Signal From Alpha 2 Beta 2 Combination	<= 0.1131 -		
					ETRS Linear Shifter X Signal From Alpha 2 Beta 2 Combination	>= -0.099 -		
					ETRS Linear Shifter Y Signal From Alpha 2 Beta 2 Combination	<= 0.5091 -		
					ETRS Linear Shifter Y Signal From Alpha 2 Beta 2 Combination	>= -0.5374 -		
					)			
					OR			
					(			
					ETRS Linear Shifter X Signal From Alpha 2 Beta 2 Combination	<= 0.1131 -		
					ETRS Linear Shifter X Signal From Alpha 2 Beta 2 Combination	>= -0.099 -		
					ETRS Linear Shifter Y Signal From Alpha 2 Beta 2 Combination	<= 0.5091 -		
					ETRS Linear Shifter Y Signal From Alpha 2 Beta 2 Combination	>= -0.5374 -		
					)			
					OR			
					(			
					ETRS Linear Shifter X Signal From Alpha 2 Beta 2 Combination	<= 0.1131 -		
					ETRS Linear Shifter X Signal From Alpha 2 Beta 2 Combination	>= -0.099 -		
					ETRS Linear Shifter Y Signal From Alpha 2 Beta 2 Combination	<= 0.5091 -		
					ETRS Linear Shifter Y Signal From Alpha 2 Beta 2 Combination	>= -0.5374 -		
					))			
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enabling conditions are met	= see sheet enable tables -		
		Path 4: Monitoring signal variation between Shifter 1 and Shifter 2	Absolute value of difference between Raw PWM signal from Shifter Beta 1 and Adjusted signal from Shifter Beta 2	>= 12.0235 %	(		0.5 sec	2 Trips
					System Power Mode	= Run crank active calibration -		
					OR			
					System Power Mode	= Accessory On calibration -		
					)	-		
					for time	>= 0.4 sec		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enabling conditions are met	= see sheet enable tables -		

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
		Path 5: Advanced performance diagnosis and monitoring signal variation between Shifter 1 and Shifter 2	Absolute value of difference between Raw PWM signal from Shifter Beta 1 and Adjusted signal from Shifter Beta 2	>= 12.0235 %	(		0.5 sec	2 Trips
					System Power Mode	= Run crank active calibration -		
					OR			
					System Power Mode	= Accessory On calibration -		
					)	-		
					for time	>= 0.4 sec		
					((			
					ETRS Linear Shifter X Signal From Alpha 1 Beta 2 Combination	<= 0.1131 -		
					ETRS Linear Shifter X Signal From Alpha 1 Beta 2 Combination	>= -0.099 -		
					ETRS Linear Shifter Y Signal From Alpha 1 Beta 2 Combination	<= 0.5091 -		
					ETRS Linear Shifter Y Signal From Alpha 1 Beta 2 Combination	>= -0.5374 -		
					)			
					OR			
					(			
					ETRS Linear Shifter X Signal From Alpha 1 Beta 2 Combination	<= 0.1131 -		
					ETRS Linear Shifter X Signal From Alpha 1 Beta 2 Combination	>= -0.099 -		
					ETRS Linear Shifter Y Signal From Alpha 1 Beta 2 Combination	<= 0.5091 -		
					ETRS Linear Shifter Y Signal From Alpha 1 Beta 2 Combination	>= -0.5374 -		
					)			
					OR			
					(			
					ETRS Linear Shifter X Signal From Alpha 1 Beta 2 Combination	<= 0.1131 -		
					ETRS Linear Shifter X Signal From Alpha 1 Beta 2 Combination	>= -0.099 -		
					ETRS Linear Shifter Y Signal From Alpha 1 Beta 2 Combination	<= 0.5091 -		
					ETRS Linear Shifter Y Signal From Alpha 1 Beta 2 Combination	>= -0.5374 -		
					))			
					((			
					ETRS Linear Shifter X Signal From Alpha 2 Beta 2 Combination	<= 0.1131 -		
					ETRS Linear Shifter X Signal From Alpha 2 Beta 2 Combination	>= -0.099 -		
					ETRS Linear Shifter Y Signal From Alpha 2 Beta 2 Combination	<= 0.5091 -		
					ETRS Linear Shifter Y Signal From Alpha 2 Beta 2 Combination	>= -0.5374 -		
					)			
					OR			
					(			
					ETRS Linear Shifter X Signal From Alpha 2 Beta 2 Combination	<= 0.1131 -		
					ETRS Linear Shifter X Signal From Alpha 2 Beta 2 Combination	>= -0.099 -		
					ETRS Linear Shifter Y Signal From Alpha 2 Beta 2 Combination	<= 0.5091 -		
					ETRS Linear Shifter Y Signal From Alpha 2 Beta 2 Combination	>= -0.5374 -		
					)			
					OR			

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					(			
					ETRS Linear Shifter X Signal From Alpha 2 Beta 2 Combination	<= 0.1131 -		
					ETRS Linear Shifter X Signal From Alpha 2 Beta 2 Combination	>= -0.099 -		
					ETRS Linear Shifter Y Signal From Alpha 2 Beta 2 Combination	<= 0.5091 -		
					ETRS Linear Shifter Y Signal From Alpha 2 Beta 2 Combination	>= -0.5374 -		
					))			
					ETRS Diagnotics - Advanced performance diagnostics enabled	= TRUE -		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enabling conditions are met	= see sheet enable tables -		
Transmission Range Selector Y-Axis Position Sensor 2	P08A2	Monitoring of Gear Lever Y position sensor 2 for Out of Range Check- High	Raw PWM signal value from the shifter 2 of Gear Lever Y Position Sensor	>= 95.0147 %	(		0.5 sec	2 Trips
					System Power Mode	= Run crank active calibration -		
					OR			
					System Power Mode	= Accessory On calibration -		
					)	-		
					for time	>= 0.4 sec		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enabling conditions are met	= see sheet enable tables -		
	P08A1	Monitoring of Gear Lever Y position sensor 2 for Out of Range Check- Low	Raw PWM signal value from the shifter 2 of Gear Lever Y Position Sensor	<= 4.9853 %	(		0.5 sec	2 Trips
					System Power Mode	= Run crank active calibration -		
					OR			
					System Power Mode	= Accessory On calibration -		
					)	-		
					for time	>= 0.4 sec		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enabling conditions are met	= see sheet enable tables -		
	P08A0	**Path 1:** CAN Communication signaL for Shift Lever Diagnosis of Primary Gear Lever Y Position Sensor 2	CAN Communication signaL for Shift Lever Diagnosis of Primary Gear Lever Y Position Sensor 2 OR	= TRUE -	(		0.5 sec	2 Trips
					System Power Mode	= Run crank active calibration -		
			CAN Communication signaL for Shift Lever Diagnosis of Secondary Gear Lever Y Position Sensor 2	= TRUE -	OR			
					System Power Mode	= Accessory On calibration -		
					)	-		
					for time	>= 0.4 sec		
					ETRS Linear Shifter Beta 1 Sample Circuit Error is not set	= TRUE -		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enabling conditions are met	= see sheet enable tables -		

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required		MIL Illum.
		Path 2: ETRS LInear Shifter Both Combinations Using Beta 2 Outside of Field Of Play Flag	ETRS LInear Shifter Both Combinations Using Beta 2 Outside of Field Of Play Flag	=	TRUE	-	(				0.5	sec	2 Trips
							System Power Mode	=	Run crank active calibration	-			
							OR						
							System Power Mode	=	Accessory On calibration	-			
							)			-			
							for time	>=	0.4	sec			
							((						
							ETRS Linear Shifter X Signal From Alpha 1 Beta 2 Combination	>	0.1131	-			
							OR						
							ETRS Linear Shifter X Signal From Alpha 1 Beta 2 Combination	<	-0.099	-			
							OR						
							ETRS Linear Shifter Y Signal From Alpha 1 Beta 2 Combination	>	0.5091	-			
							OR						
							ETRS Linear Shifter Y Signal From Alpha 1 Beta 2 Combination	<	-0.5374	-			
							)						
							(						
							ETRS Linear Shifter X Signal From Alpha 1 Beta 2 Combination	>	0.1131	-			
							OR						
							ETRS Linear Shifter X Signal From Alpha 1 Beta 2 Combination	<	-0.099	-			
							OR						
							ETRS Linear Shifter Y Signal From Alpha 1 Beta 2 Combination	>	0.5091	-			
							OR						
							ETRS Linear Shifter Y Signal From Alpha 1 Beta 2 Combination	<	-0.5374	-			
							)						
							(						
							ETRS Linear Shifter X Signal From Alpha 1 Beta 2 Combination	>	0.1131	-			
							OR						
							ETRS Linear Shifter X Signal From Alpha 1 Beta 2 Combination	<	-0.099	-			
							OR						
							ETRS Linear Shifter Y Signal From Alpha 1 Beta 2 Combination	>	0.5091	-			
							OR						
							ETRS Linear Shifter Y Signal From Alpha 1 Beta 2 Combination	<	-0.5374	-			
							))						
							((						
							ETRS Linear Shifter X Signal From Alpha 2 Beta 2 Combination	>	0.1131	-			
							OR						
							ETRS Linear Shifter X Signal From Alpha 2 Beta 2 Combination	<	-0.099	-			
							OR						
							ETRS Linear Shifter Y Signal From Alpha 2 Beta 2 Combination	>	0.5091	-			
							OR						
							ETRS Linear Shifter Y Signal From Alpha 2 Beta 2 Combination	<	-0.5374	-			
							)						

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required		MIL Illum.
							(						
							ETRS Linear Shifter X Signal From Alpha 2 Beta 2 Combination	>	0.1131	-			
							OR						
							ETRS Linear Shifter X Signal From Alpha 2 Beta 2 Combination	<	-0.099	-			
							OR						
							ETRS Linear Shifter Y Signal From Alpha 2 Beta 2 Combination	>	0.5091	-			
							OR						
							ETRS Linear Shifter Y Signal From Alpha 2 Beta 2 Combination	<	-0.5374	-			
							)						
							(						
							ETRS Linear Shifter X Signal From Alpha 2 Beta 2 Combination	>	0.1131	-			
							OR						
							ETRS Linear Shifter X Signal From Alpha 2 Beta 2 Combination	<	-0.099	-			
							OR						
							ETRS Linear Shifter Y Signal From Alpha 2 Beta 2 Combination	>	0.5091	-			
							OR						
							ETRS Linear Shifter Y Signal From Alpha 2 Beta 2 Combination	<	-0.5374	-			
							))						
							No pending or confirmed DTCs	=	see sheet inhibit tables	-			
							Basic enabling conditions are met	=	see sheet enable tables	-			
		Path 3: Monitoring signal variation between Shifter 1 and Shifter 2 and checking the validity of the combinations of Linear Shifters.	Absolute value of difference between Raw PWM signal from Shifter Beta 2 and Adjusted signal from Shifter Beta 2	>=	12.0235	%	(				0.5	sec	2 Trips
			ETRS Linear Shifter Both Combinations Using Beta 2 Outside of Field Of Play Flag	=	FALSE	-	System Power Mode	=	Run crank active calibration	-			
							OR						
							System Power Mode	=	Accessory On calibration	-			
							)			-			
							for time	>=	0.4	sec			
							((						
							ETRS Linear Shifter X Signal From Alpha 1 Beta 1 Combination	<=	0.1131	-			
							ETRS Linear Shifter X Signal From Alpha 1 Beta 1 Combination	>=	-0.099	-			
							ETRS Linear Shifter Y Signal From Alpha 1 Beta 1 Combination	<=	0.5091	-			
							ETRS Linear Shifter Y Signal From Alpha 1 Beta 1 Combination	>=	-0.5374	-			
							)						
							OR						
							(						
							ETRS Linear Shifter X Signal From Alpha 1 Beta 1 Combination	<=	0.1131	-			
							ETRS Linear Shifter X Signal From Alpha 1 Beta 1 Combination	>=	-0.099	-			
							ETRS Linear Shifter Y Signal From Alpha 1 Beta 1 Combination	<=	0.5091	-			
							ETRS Linear Shifter Y Signal From Alpha 1 Beta 1 Combination	>=	-0.5374	-			
							)						
							OR						

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					(			
					ETRS Linear Shifter X Signal From Alpha 1 Beta 1 Combination	<= 0.1131 -		
					ETRS Linear Shifter X Signal From Alpha 1 Beta 1 Combination	>= -0.099 -		
					ETRS Linear Shifter Y Signal From Alpha 1 Beta 1 Combination	<= 0.5091 -		
					ETRS Linear Shifter Y Signal From Alpha 1 Beta 1 Combination	>= -0.5374 -		
					))			
					((			
					ETRS Linear Shifter X Signal From Alpha 1 Beta 1 Combination	<= 0.1131 -		
					ETRS Linear Shifter X Signal From Alpha 1 Beta 1 Combination	>= -0.099 -		
					ETRS Linear Shifter Y Signal From Alpha 2 Beta 1 Combination	<= 0.5091 -		
					ETRS Linear Shifter Y Signal From Alpha 2 Beta 1 Combination	>= -0.5374 -		
					)			
					OR			
					(			
					ETRS Linear Shifter X Signal From Alpha 1 Beta 1 Combination	<= 0.1131 -		
					ETRS Linear Shifter X Signal From Alpha 1 Beta 1 Combination	>= -0.099 -		
					ETRS Linear Shifter Y Signal From Alpha 2 Beta 1 Combination	<= 0.5091 -		
					ETRS Linear Shifter Y Signal From Alpha 2 Beta 1 Combination	>= -0.5374 -		
					)			
					OR			
					(			
					ETRS Linear Shifter X Signal From Alpha 1 Beta 1 Combination	<= 0.1131 -		
					ETRS Linear Shifter X Signal From Alpha 1 Beta 1 Combination	>= -0.099 -		
					ETRS Linear Shifter Y Signal From Alpha 2 Beta 1 Combination	<= 0.5091 -		
					ETRS Linear Shifter Y Signal From Alpha 2 Beta 1 Combination	>= -0.5374 -		
					))			
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enabling conditions are met	= see sheet enable tables -		
		Path 4: Monitoring signal variation between Shifter 1 and Shifter 2	Absolute value of difference between Raw PWM signal from Shifter Beta 1 and Adjusted signal from Shifter Beta 2	>= 12.0235 %	(		0.5 sec	2 Trips
					System Power Mode	= Run crank active calibration -		
					OR			
					System Power Mode	= Accessory On calibration -		
					)	-		
					for time	>= 0.4 sec		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enabling conditions are met	= see sheet enable tables -		

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
		Path 5: Advanced performance diagnosis and monitoring signal variation between Shifter 1 and Shifter 2	Absolute value of difference between Raw PWM signal from Shifter Beta 1 and Adjusted signal from Shifter Beta 2	>= 12.0235 %	(		0.5 sec	2 Trips
					System Power Mode	= Run crank active calibration -		
					OR			
					System Power Mode	= Accessory On calibration -		
					)	-		
					for time	>= 0.4 sec		
					((			
					ETRS Linear Shifter X Signal From Alpha 1 Beta 1 Combination	<= 0.1131 -		
					ETRS Linear Shifter X Signal From Alpha 1 Beta 1 Combination	>= -0.099 -		
					ETRS Linear Shifter Y Signal From Alpha 1 Beta 1 Combination	<= 0.5091 -		
					ETRS Linear Shifter Y Signal From Alpha 1 Beta 1 Combination	>= -0.5374 -		
					)			
					OR			
					(			
					ETRS Linear Shifter X Signal From Alpha 1 Beta 1 Combination	<= 0.1131 -		
					ETRS Linear Shifter X Signal From Alpha 1 Beta 1 Combination	>= -0.099 -		
					ETRS Linear Shifter Y Signal From Alpha 1 Beta 1 Combination	<= 0.5091 -		
					ETRS Linear Shifter Y Signal From Alpha 1 Beta 1 Combination	>= -0.5374 -		
					)			
					OR			
					(			
					ETRS Linear Shifter X Signal From Alpha 1 Beta 1 Combination	<= 0.1131 -		
					ETRS Linear Shifter X Signal From Alpha 1 Beta 1 Combination	>= -0.099 -		
					ETRS Linear Shifter Y Signal From Alpha 1 Beta 1 Combination	<= 0.5091 -		
					ETRS Linear Shifter Y Signal From Alpha 1 Beta 1 Combination	>= -0.5374 -		
					))			
					((			
					ETRS Linear Shifter X Signal From Alpha 2 Beta 1 Combination	<= 0.1131 -		
					ETRS Linear Shifter X Signal From Alpha 2 Beta 1 Combination	>= -0.099 -		
					ETRS Linear Shifter Y Signal From Alpha 2 Beta 1 Combination	<= 0.5091 -		
					ETRS Linear Shifter Y Signal From Alpha 2 Beta 1 Combination	>= -0.5374 -		
					)			
					OR			

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					(			
					ETRS Linear Shifter X Signal From Alpha 2 Beta 1 Combination	<= 0.1131 -		
					ETRS Linear Shifter X Signal From Alpha 2 Beta 1 Combination	>= -0.099 -		
					ETRS Linear Shifter Y Signal From Alpha 2 Beta 1 Combination	<= 0.5091 -		
					ETRS Linear Shifter Y Signal From Alpha 2 Beta 1 Combination	>= -0.5374 -		
					)			
					OR			
					(			
					ETRS Linear Shifter X Signal From Alpha 2 Beta 1 Combination	<= 0.1131 -		
					ETRS Linear Shifter X Signal From Alpha 2 Beta 1 Combination	>= -0.099 -		
					ETRS Linear Shifter Y Signal From Alpha 2 Beta 1 Combination	<= 0.5091 -		
					ETRS Linear Shifter Y Signal From Alpha 2 Beta 1 Combination	>= -0.5374 -		
					))			
					ETRS Diagnostics - Advanced performance diagnostics enabled	= TRUE -		
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enabling conditions are met	= see sheet enable tables -		
Transmission Range Selector Shift Interlock Switch 1	P17A4	Monitoring of transmission range selector enable switch A	PRNDL display status indicates Transmission Range Selector Enable Switch A Circuit High	= TRUE -	Transmission Range Selector Enable Switch A Circuit High message received successfully through CAN	= TRUE -		2 Trips
					Basic enable conditions met	= see sheet enable tables -		
	P17A3	Monitoring of transmission range selector enable switch A	PRNDL display status indicates Transmission Range Selector Enable Switch A Circuit Low	= TRUE -	Transmission Range Selector Enable Switch A Circuit Low message received successfully through CAN	= TRUE -		2 Trips
					Basic enable conditions met	= see sheet enable tables -		
	P17A5	Monitoring of transmission range selector enable switch A	PRNDL display status indicates Transmission Range Selector Enable Switch A Circuit Performance	= TRUE -	Transmission Range Selector Enable Switch A Circuit Performance message received successfully through CAN	= TRUE -		2 Trips
					Basic enable conditions met	= see sheet enable tables -		
	P17A6	Transmission Range Selector Enable Switch A or B Correlation	ESDR (ETRS Shifter Decoder Ring) Interlock 1 Position is not equal to ESDR Interlock 2 Position	= TRUE -	Shifter diagnostics is enabled, which is the following conditions for time	>= 0.4 sec	0.5 sec	no MIL
					((			
					System Power Mode	= Run crank active calibration -		
					OR			
					System Power Mode	= Accessory On calibration -		
					)	-		
					ETRS linear shifter interlock 1 fault is active	= FALSE -		
					ETRS linear shifter interlock 2 fault is active	= FALSE -		
					)			
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enabling conditions are met	= see sheet enable tables -		

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
	P17F4	Transmission Range Selector Enable Switch 1 or 2 Circuit Stuck On	ETRS linear shifter interlock 1 fault is active OR ETRS linear shifter interlock 2 fault is active OR ETRS linear shifter interlock 1 position is stuck OR ETRS linear shifter interlock 2 position is stuck	= TRUE - = TRUE - = TRUE - = TRUE -	(System Power Mode OR System Power Mode) for time No pending or confirmed DTCs Basic enabling conditions are met	= Run crank active calibration - = Accessory On calibration - - >= 0.4 sec = see sheet inhibit tables - = see sheet enable tables -	600 sec	no MIL
Transmission Range Selector Shift Interlock Switch 2	P17A8	Monitoring of transmission range selector enable switch B	PRNDL display status indicates Transmission Range Selector Enable Switch B Circuit High	= TRUE -	Transmission Range Selector Enable Switch B Circuit High message received successfully through CAN Basic enable conditions met	= TRUE - = see sheet enable tables -		2 Trips
	P17A7	Monitoring of transmission range selector enable switch B	PRNDL display status indicates Transmission Range Selector Enable Switch B Circuit Low	= TRUE -	Transmission Range Selector Enable Switch B Circuit Low message received successfully through CAN Basic enable conditions met	= TRUE - = see sheet enable tables -		2 Trips
	P17A9	Monitoring of transmission range selector enable switch B	PRNDL display status indicates Transmission Range Selector Enable Switch B Circuit Performance	= TRUE -	Transmission Range Selector Enable Switch B Circuit Performance message received successfully through CAN Basic enable conditions met	= TRUE - = see sheet enable tables -		2 Trips
Transmission Range Selector Park Position Switch 1	P07B4	Monitoring of transmission Park Position Sensor/Switch A	PRNDL display status indicates Transmission Park Position Sensor/Switch A Circuit High	= TRUE -	Transmission Park Position Sensor/Switch A Circuit High message received successfully through CAN Basic enable conditions met	= TRUE - = see sheet enable tables -		1 Trip
	P07B3	Monitoring of transmission Park Position Sensor/Switch A	PRNDL display status indicates Transmission Park Position Sensor/Switch A Circuit Low	= TRUE -	Transmission Park Position Sensor/Switch A Circuit Low message received successfully through CAN Basic enable conditions met	= TRUE - = see sheet enable tables -		1 Trip
	P07B5	Monitoring of transmission Park Position Sensor/Switch A	PRNDL display status indicates Transmission Park Position Sensor/Switch A Circuit Performance	= TRUE -	Transmission Park Position Sensor/Switch A Circuit Performance message received successfully through CAN Basic enable conditions met	= TRUE - = see sheet enable tables -		2 Trips

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required		MIL Illum.
	P17F3	Transmission Park Position Switch 1 or 2 Circuit Stuck On	ETRS(Engine Transmission System) linear shifter park input 1 primary fault active	=	TRUE	-	(				60	sec	no MIL
			OR				System Power Mode	=	Run crank active calibration	-			
			ETRS linear shifter park input 2 primary fault is active	=	TRUE	-	OR						
			OR				System Power Mode	=	Accessory On calibration	-			
			ETRS linear shifter park input 1 secondary fault is active	=	TRUE	-	)			-			
			OR				for time	>=	0.4	sec			
			ETRS linear shifter park input 2 secondary fault	=	TRUE	-	No pending or confirmed DTCs	=	see sheet inhibit	-			
							Basic enabling conditions are met	=	see sheet enable tables	-			
	P189D	Transmission Park Position Switch 1 or 2 Circuit Stuck Open	(The ratio between counts how many times the Switch 1 was open and counts how many times the park button has been pressed since the last evaluation of whether one switch is stuck open or not	>=	0.84375	-	Ignition is ON	=	TRUE	-	0.5	sec	2 Trips
			The ratio between counts how many times the Switch 1 was closed and counts how many times the park button has been pressed since the last evaluation of whether one switch is stuck open or not	<=	0.078125	-	Counts how many times the park button has been pressed since the last evaluation of whether one switch is stuck open or not	>=	8	-			
			The ratio between counts how many times the Switch 2 was closed and counts how many times the park button has been pressed since the last evaluation of whether one switch is stuck open or not	>=	0.84375	-	Park switch stuck open enable	=	TRUE	-			
			(The ratio between counts how many times the Switch 2 was open and counts how many times the park button has been pressed since the last evaluation of whether one switch is stuck open or not OR	<=	0.078125	-	Basic enable conditions met	=	see sheet enable tables	-			
			The ratio between counts how many times the Switch 2 was open and counts how many times the park button has been pressed since the last evaluation of whether one switch is stuck open or not)) OR	>=	0.84375	-							
			(The ratio between counts how many times the Switch 2 was open and counts how many times the park button has been pressed since the last evaluation of whether one switch is stuck open or not	>=	0.84375	-							
			The ratio between counts how many times the Switch 2 was closed and counts how many times the park button has been pressed since the last evaluation of whether one switch is stuck open or not	<=	0.078125	-							
			The ratio between counts how many times the Switch 1 was closed and counts how many times the park button has been pressed since the last evaluation of whether one switch is stuck open or not	>=	0.84375	-							
			(The ratio between counts how many times the Switch 1 was open and counts how many times the park button has been pressed since the last evaluation of whether one switch is stuck open or not OR	<=	0.078125	-							
			The ratio between counts how many times the Switch 1 was open and counts how many times the park button has been pressed since the last evaluation of whether one switch is stuck open or not))	>=	0.84375	-							

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required		MIL Illum.
	P07BE	Transmission Park Position Sensor Switch A B Correlation	ESDR Park 1 Position is not equal to ESDR Park 2 Position	=	TRUE	-	Ignition is ON	=	TRUE	-	37.5	sec	1 Trip
							ESDR Park 1 Position Fault Active Flag	=	FALSE	-			
							ESDR Park 2 Position Fault Active Flag	=	FALSE	-			
							ESDR General Diag Enable Flag	=	TRUE	-			
							Basic enable conditions met	=	see sheet enable tables	-			
Transmission Range Selector Park Position Switch 2	P07BA	Monitoring of transmission Park Position Sensor/Switch B	PRNDL display status indicates Transmission Park Position Sensor/Switch B Circuit High	=	TRUE	-	Transmission Park Position Sensor/Switch B Circuit High message received successfully through CAN	=	TRUE	-			1 Trip
							Basic enable conditions met	=	see sheet enable tables	-			
	P07B9	Monitoring of transmission Park Position Sensor/Switch B	PRNDL display status indicates Transmission Park Position Sensor/Switch B Circuit Low	=	TRUE	-	Transmission Park Position Sensor/Switch B Circuit Low message received successfully through CAN	=	TRUE	-			1 Trip
							Basic enable conditions met	=	see sheet enable tables	-			
	P07BB	Monitoring of transmission Park Position Sensor/Switch B	PRNDL display status indicates Transmission Park Position Sensor/Switch B Circuit Performance	=	TRUE	-	Transmission Park Position Sensor/Switch B Circuit Performance message received successfully through CAN	=	TRUE	-			2 Trips
							Basic enable conditions met	=	see sheet enable tables	-			
Transmission Range Selector Control Module Internal	P17D8	Monitoring of transmission range selector control module memory checksum error	PRNDL display status indicates transmission range selector control module memory checksum error	=	TRUE	-	Transmission range selector control module memory checksum error message received successfully through CAN	=	TRUE	-			1 Trip
							Basic enable conditions met	=	see sheet enable tables	-			
	P17D9	Monitoring of transmission range selector control module read only memory error	PRNDL display status indicates transmission range selector control module read only memory error	=	TRUE	-	Transmission range selector control module read only memory error message received successfully through CAN	=	TRUE	-			1 Trip
							Basic enable conditions met	=	see sheet enable tables	-			
	P17DA	Monitoring of transmission range selector control module internal random access memory error	PRNDL display status indicates transmission range selector control module internal random access memory error	=	TRUE	-	Transmission range selector control module internal random access memory error message received successfully through CAN	=	TRUE	-			1 Trip
							Basic enable conditions met	=	see sheet enable tables	-			

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required		MIL Illum.
	P17DB	**Path 1:** Monitoring of transmission range selector control module processor	PRNDL display status indicates transmission range selector control module processor error	=	TRUE	-	Transmission range selector control module processor message received successfully through CAN	=	TRUE	-			1 Trip
							Basic enable conditions met	=	see sheet enable tables	-			
		Path 2: Evaluation of the primary and secondary seed key pair (SKP) signal from the electronic transmission range select (ETRS) shifter for reversible errors.	Primary SKP error in function monitoring is set with the following conditions:	=	TRUE	-	Ignition is ON	=	TRUE	-	0.1	sec	1 Trip
			Received key match the expected key based on the received seed.	=	FALSE	-	Status of seed key pair primary communication is not equal to the value of primary SKP in previous calculation cycle in function monitoring	=	TRUE	-			
			for counts	>=	50	-	Status of seed key pair secondary communication is not equal to the value of secondary SKP in previous calculation cycle in function monitoring	=	TRUE	-			
			OR				Primary SKP signal communication error is set	=	FALSE	-			
			Secondary SKP error in function monitoring is set with the following conditions:	=	TRUE	-	Secondary SKP communication error is set	=	FALSE	-			
			Received key match the expected key based on the received seed.	=	FALSE	-	ECU is in state "drive"	=	TRUE	-			
			for counts	>=	50	-	Basic enable conditions are met	=	see sheet enable tables	-			
		Path 3: Monitoring the primary and secondary seed key pair (SKP) signal from the electronic transmission range select (ETRS) shifter for communication errors	Primary SKP signal communication error is set	=	TRUE	-	Ignition is ON	=	TRUE	-	0.1	sec	1 Trip
			for counts	>=	50	-	ECU is in state "drive"	=	TRUE	-			
							Basic enable conditions are met	=	see sheet enable tables	-			
			OR										
			Secondary SKP signal communication error is set	=	TRUE	-							
			for counts	>=	50	-							

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
		Path 4: Evaluation of the primary and secondary seed key pair (SKP) signal from the electronic transmission range select (ETRS) shifter for irreversible errors.	Primary SKP error in function monitoring is set, with the following conditions:	= TRUE -	Ignition is ON	= TRUE -	0.1 sec	1 Trip
			Received key match the expected key based on the received seed.	= FALSE -	Status of seed key pair primary communication is not equal to the value of primary SKP in previous calculation cycle in function monitoring	= TRUE -		
			for counts	>= A + B	Status of seed key pair secondary communication is not equal to the value of secondary SKP in previous calculation cycle in function monitoring	= TRUE -		
			(		Primary SKP signal communication error is set	= FALSE -		
			A: Threshold limit for primary SKP error counter based on current vehicle speed	= 100 -	Secondary SKP communication error is set	= FALSE -		
			B: Parameter for linear shifter seed key pair primary default value	= 50 -	ECU is in state "drive"	= TRUE -		
			)		Basic enable conditions are met	= see sheet enable tables -		
			OR					
			Secondary SKP error in function monitoring is set, with the following conditions:	= TRUE -				
			Received key match the expected key based on the received seed.	= FALSE -				
			for counts	>= A + B				
			(	=				
			A: Threshold limit for secondary SKP error counter based on current vehicle speed	= 100 -				
			B: Parameter for linear shifter seed key pair secondary default value	= 50 -				
			)					
	P17DC	Monitoring of transmission range selector control module keep alive memory performance	PRNDL display status indicates transmission range selector control module keep alive memory performance error	= TRUE -	Transmission range selector control module keep alive memory performance message received successfully through CAN	= TRUE -		1 Trip
					Basic enable conditions met	= see sheet enable tables -		
TCM Processor Integrity	P06AF	Detection of TCM processor reset due to TCM processor integrity failure	(		Ignition is on	= TRUE -	0.1 sec	1 Trip
			Detection of "Unhealthy" State of Health Pattern		Basic enable conditions met	= see sheet enable tables -		
			(					
			Received value of TCM CAN frame 0x3F5 Byte 5	= 11 -				
			OR					
			Received value of TCM CAN frame 0x3F5 Byte 5	= 15 -				
			OR					
			Received value of TCM CAN frame 0x3F5 Byte 5	= 3 -				
			OR					
			Received value of TCM CAN frame 0x3F5 Byte 5	= 12 -				
			OR					
			Received value of TCM CAN frame 0x3F5 Byte 5	= 14 -				
			OR					
			Received value of TCM CAN frame 0x3F5 Byte 5	= 7 -				
			OR					
			Received value of TCM CAN frame 0x3F5 Byte 5	= 13 -				
			)					
			OR					

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
			Detection of Missing "Healthy" State of Health Pattern - Unrecognizable Pattern (Received value of TCM CAN frame 0x3F5 Byte 5	<>	8	-				
			OR Received value of TCM CAN frame 0x3F5 Byte 5	<>	5	-				
			OR Received value of TCM CAN frame 0x3F5 Byte 5	<>	1	-				
			OR Received value of TCM CAN frame 0x3F5 Byte 5	<>	9	-				
			OR Received value of TCM CAN frame 0x3F5 Byte 5	<>	10	-				
			OR Received value of TCM CAN frame 0x3F5 Byte 5	<>	6	-				
			OR Received value of TCM CAN frame 0x3F5 Byte 5	<>	4	-				
			OR Received value of TCM CAN frame 0x3F5 Byte 5	<>	0	-				
			OR Received value of TCM CAN frame 0x3F5 Byte 5) OR	<>	2	-				
			Detection of Frozen State of Health Pattern Difference (a) - (b) (with (a) Received value of TCM CAN frame 0x3F5 Byte 5 and with (b) Previous received value of TCM CAN frame 0x3F5 Byte 5) AND	=	0	-				
			Above difference occuring on a total number of occassions (evaluated every 250 ms))	>	50	counts				
			AND **Presence of Communication DTCs** ECM has U0101 DTC stored for loss of communication with TCM	=	TRUE	-				
			AND **Commanded ETRS Range Not in a Forward Driven Range** (Commanded ETRS Range	<>	MANUAL	-				
			OR Commanded ETRS Range	<>	LOW	-				
			OR Commanded ETRS Range)	<>	DRIVE	-				

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Transmission Range Selector Control Module Supply Voltage	P17DE	Monitoring of transmission range selector control module system voltage high	PRNDL display status indicates transmission range selector control module system voltage high	= TRUE -	Transmission range selector control module system voltage high message received successfully through CAN Basic enable conditions met	= TRUE - = see sheet enable tables -		no MIL
	P17DD	Monitoring of transmission range selector control module system voltage low	PRNDL display status indicates transmission range selector control module system voltage low	= TRUE -	Transmission range selector control module system voltage low message received successfully through CAN Basic enable conditions met	= TRUE - = see sheet enable tables -		1 Trip
	P17DF	Monitoring of transmission range selector control module system voltage performance	PRNDL display status indicates transmission range selector control module system voltage performance error	= TRUE -	Transmission range selector control module system voltage performance message received successfully through CAN Basic enable conditions met	= TRUE - = see sheet enable tables -		no MIL
Transmission Range Selector Control Module Ignition On/Start Switch	P17E1	Monitoring of transmission range selector control module ignition ON/start switch circuit high	PRNDL display status indicates transmission range selector control module ignition ON/start switch circuit high	= TRUE -	Transmission range selector control module ignition ON/start switch circuit high message received successfully through CAN Basic enable conditions met	= TRUE - = see sheet enable tables -		2 Trips
	P17E0	Monitoring of transmission range selector control module ignition ON/start switch circuit low	PRNDL display status indicates transmission range selector control module ignition ON/start switch circuit low	= TRUE -	Transmission range selector control module ignition ON/start switch circuit low message received successfully through CAN Basic enable conditions met	= TRUE - = see sheet enable tables -		2 Trips
Transmission Range Selector Control Module Ignition Accessory Input	P17E2	Monitoring of transmission range selector control module ignition accessory circuit low	PRNDL display status indicates transmission range selector control module ignition accessory circuit low	= TRUE -	Transmission range selector control module ignition accessory circuit low message received successfully through CAN Basic enable conditions met	= TRUE - = see sheet enable tables -		no MIL
Powertrain Expansion CAN Bus	U137D	Monitoring of transmission range selection signal message counter	PRNDL display status indicates transmission range selection signal message counter is incorrect	= TRUE -	Transmission range selection signal message counter incorrect message received successfully through CAN Basic enable conditions met	= TRUE - = see sheet enable tables -		2 Trips
	U18C7	Monitoring of transmission range selector control module lost communication with ECM on powertrain expansion CAN bus	PRNDL display status indicates transmission range selector control module lost communication with ECM on powertrain expansion CAN bus	= TRUE -	Transmission range selector control module lost communication with ECM on powertrain expansion CAN bus message received successfully through CAN Basic enable conditions met	= TRUE - = see sheet enable tables -		2 Trips
	U240D	Monitoring of transmission range selector control module powertrain expansion CAN bus OFF	PRNDL display status indicates transmission range selector control module powertrain expansion CAN bus OFF	= TRUE -	Transmission range selector control module powertrain expansion CAN bus OFF message received successfully through CAN Basic enable conditions met	= TRUE - = see sheet enable tables -		2 Trips

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required		MIL Illum.
Powertrain Sensor CAN Bus	U18C6	Monitoring of transmission range selector control module lost communication with ECM on powertrain sensor CAN bus	PRNDL display status indicates transmission range selector control module lost communication with ECM on powertrain sensor CAN bus	=	TRUE	-	Transmission range selector control module lost communication with ECM on powertrain sensor CAN bus message received successfully through CAN	=	TRUE	-			2 Trips
							Basic enable conditions met	=	see sheet enable tables	-			
	U240E	Monitoring of transmission range selector control module sensor CAN bus OFF	PRNDL display status indicates transmission range selector control module sensor CAN bus OFF	=	TRUE	-	Transmission range selector control module sensor CAN bus OFF message received successfully through CAN	=	TRUE	-			2 Trips
							Basic enable conditions met	=	see sheet enable tables	-			
Transmission Range Selection	P16F4	**Park Exit Monitor** Monitor for Driver Range Request Ring (DRRR) commands to exit Park which do not follow a direct driver command for R, N. D or M via the shift lever	Currently Commanding PARK or Commanding UNDEFINED w/ Single Park Indication, which is the following conditions:	=	TRUE	_	Ignition is ON	=	TRUE	-	0.5	sec	1 Trip
			(				No pending or confirmed DTCs	=	see sheet inhibit tables	-			
			Range Command	=	PARK Range	-	Basic enabling conditions are met	=	see sheet enable tables	-			
			OR (										
			Range Command	=	UNDEFINED Range	-							
			Single park indication	=	TRUE	-							
			)) AND										
			Not commanded to leave PARK range, which is the following conditions and for time	>=	0.2	sec							
			(										
			Linear Shifter Current Position	=	PARK Range	-							
			OR										
			Linear Shifter Current Position	=	UNDEFINED Range	-							
			OR										
			Linear Shifter Current Position	=	NULL range	-							
			) AND [										
			Driver Range Request Ring (DRRR) commands a value OTHER than Park, Undefined or Null when it was previously commanding Park, Undefined or Null	=	TRUE	-							
			OR (										
			Driver Range Request Ring (DRRR) commands a value OTHER than PARK, UNDEFINED or NULL	=	TRUE	-							
			AND										
			Currently Commanding PARK or Commanding UNDEFINED w/ Single Park Indication	=	TRUE	-							
			)										
			for time	>=	2.05	sec							
			]										

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Parameters	Enable Conditions			Time Required		MIL Illum.
		Park Acknowledgement Monitor Monitor Transmission Range Command Ring (TRCR) to ensure the acknowledgement of a command for Park within a calibratable time period	Range Command	not equal	PARK Range	-							
			Vehicle request for a range shift	=	PARK Range	-							
			for time	=	0.2	sec							
		Neutral Acknowledgement Monitor Monitor for the timely acknowledgement of a command for Neutral, provided the transmission is presently out of Park	(										
			Transmission Range Command Ring (TRCR) commands REVERSE, LOW, MANUAL or DRIVE range	=	TRUE	-							
			Linear Shifter Current Position is in NEUTRAL range	=	NEUTRAL range	-							
			)										
			for time	>=	0.2	sec							
			Range Command	not equal	NEUTRAL range	-							
			Range Command	not equal	PARK Range	-							
		Transition to Drive Monitor Monitor for commands to Drive which do not follow a direct request from the driver via the shift lever	Linear Shifter Current Position is NOT in DRIVE, LOW or MANUAL range for time	>=	0.2	sec							
			Vehicle request for a range shift is in DRIVE, LOW or MANUAL range	=	TRUE	-							
		Transition to Reverse Monitor Monitor for commands to Reverse which do not follow a direct request from the Reverser via the shift lever	Linear Shifter Current Position is NOT in REVERSE range for time	>=	0.2	sec							
			Vehicle request for a range shift	=	REVERSE range	-							
	P07E5	ETRS TRCR Diagnostics - Unable to Engage in Drive	Target Range fail in Gear Lever detected for Drive range	=	TRUE	-	Range Achieve failure reported	=	TRUE	-	0.5	sec	2 Trips
							(						
							Critical forward range fault	=	FASLE	-			
							OR						
							Range availability error from Gear Lever Diagnostics	=	TRUE	-			
							)						
							Basic enabling conditions are met	=	see sheet enable tables	-			
	P073D	ETRS TRCR Diagnostics - Unable to Engage Neutral	Target Range fail in Gear Lever detected for Neutral range	=	TRUE	-	Range Achieve failure reported	=	TRUE	-	0.5	sec	2 Trips
							(						
							Critical neutral fault	=	FALSE	-			
							OR						
							Range availability error from Gear Lever Diagnostics	=	TRUE	-			
							)						
							No pending or confirmed DTCs	=	see sheet inhibit tables	-			
							Basic enabling conditions are met	=	see sheet enable tables	-			

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
	P07E4	ETRS TRCR Diagnostics - Unable to Engage Parking	Target Range fail in Gear Lever detected for Parking range	= TRUE -	Range Achieve failure reported	= TRUE -	0.5 sec	2 Trips
					(			
					CAN signal Park Range Diagnostic Critical Fault from TRCM	= FALSE -		
					OR			
					Range availability error from Gear Lever Diagnostics	= TRUE -		
					)			
					No pending or confirmed DTCs	= see sheet inhibit tables -		
					Basic enabling conditions are met	= see sheet enable tables -		
	P073E	ETRS TRCR Diagnostics - Unable to Engage Reverse	Target Range fail in Gear Lever detected for Reverse range	= TRUE -	Range Achieve failure reported	= TRUE -	0.5 sec	2 Trips
					(			
					Critical reverse fault	= FALSE -		
					OR			
					Range availability error from Gear Lever Diagnostics	= TRUE -		
					)			
					Basic enabling conditions are met	= see sheet enable tables -		

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
	P1787	ETRS TRCR Diagnostics - Unexpected Range Change Detected	Unexpected Range Change failure in Gear Lever reported	= TRUE -	Unexpected Range Change Fail Flag	= TRUE -	0.1 sec	2 Trips
					Supress Range Achievement is active	= FALSE -		
					OR			
					(			
					(			
					Translated Range Command is equal to Parking range	= FALSE -		
					OR			
					Last failed range is equal to Parking range	= FALSE -		
					OR			
					CAN signal indicating Park Range diagnostic critical fault from TRCM	= FALSE -		
					)			
					(			
					Translated Range Command is equal to Neutral Range	= FALSE -		
					OR			
					Last failed range is equal to Neutral range	= FALSE -		
					OR			
					Critical neutral fault	= FALSE -		
					)			
					(			
					Translated Range Command is equal to Reverse Range	= FALSE -		
					OR			
					Last failed range is equal to Reverse Range	= FALSE -		
					OR			
					Critical reverse fault	= FALSE -		
					)			
					(			
					Translated Range Command is equal to Drive Range	= FALSE -		
					OR			
					Last failed range is equal to Drive Range	= FALSE -		
					OR			
					Critical forward range fault	= FALSE -		
					)			
					)			
					Basic enabling conditions are met	= see sheet enable tables -		

End of Table

Component/System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
		Internal Electronic Failure	At EOL, software shall read the voltage on the IGN_MON pin 45 [P0_2/AN5]. This value is used to calculate voltage calibration value. If the IGN_MON voltage is outside of the allowed voltage limits, software shall set the VCC_CompensationEOL fault.	Acceptable upper and lower voltage thresholds are defined as IGN_MON at EOL +/- 7%.	Vehicle Power Mode: Supply Voltage C056D_ENABLE	= RUN = 9 – 16V ≠ disabled	0.001 s	Safety Non-MIL Emissions Neutral Diagnostic
			Software performs BIST test provided by RENESAS. This fault qualifies when BIST test will fail.	Fault Detected	Vehicle Power Mode: Supply Voltage C056D_ENABLE	= RUN = 9 – 16V ≠ disabled	0.001 s	Safety Non-MIL Emissions Neutral Diagnostic
			On runtime, software perform CAN registers test. During this test software write test byte to the register and check if it was properly set. If test will fail, software should set should set CAN_RegFreezeFail error.	Fault Detected	Vehicle Power Mode: Supply Voltage C056D_ENABLE	= RUN = 9 – 16V ≠ disabled	0.001 s	Safety Non-MIL Emissions Neutral Diagnostic
			This fault qualifies when EEPROM read is not ok (EEPROM failed to accept the job) and also when checksum read is wrong. This fault is set for both cases of EEPROM read from original address and Image address of the stored data.	Fault Detected	Vehicle Power Mode: Supply Voltage C056D_ENABLE	= RUN = 9 – 16V ≠ disabled	N/A	Safety Non-MIL Emissions Neutral Diagnostic
			This fault qualifies when runtime of specific functions will exceed allowed time..	Fault Detected	Vehicle Power Mode: Supply Voltage C056D_ENABLE	= RUN = 9 – 16V ≠ disabled	0.001 s	Safety Non-MIL Emissions Neutral Diagnostic
			When the external clock stops oscillating, the system should detect the failure and switch to high speed on-chip oscillator. 1. Disable CAN communication. 2. Log the fault condition to EEPROM. 3. Continue to service watch dog. 4. When the external clock re-oscillates after oscillation stop, switch the external clock to the clock source of the CPU clock by performing a system reset. 5. Upon reset, the system shall do oscillation stop detection fault.	Fault Detected	Vehicle Power Mode: Supply Voltage C056D_ENABLE	= RUN = 9 – 16V ≠ disabled	On Crystal Failure	Safety Non-MIL Emissions Neutral Diagnostic
			This fault qualifies when RAM check fails	Fault Detected	Vehicle Power Mode: Supply Voltage C056D_ENABLE	= RUN = 9 – 16V ≠ disabled	< 0.5 s (During Initialization)	Safety Non-MIL Emissions Neutral Diagnostic
			Software should set SPI_timeout error when SPI transmission will exceed allowed time.	Fault Detected	Vehicle Power Mode: Supply Voltage C056D_ENABLE	= RUN = 9 – 16V ≠ disabled	0.001 s	Safety Non-MIL Emissions Neutral Diagnostic
			This fault qualifies when configuration read from EEPROM is not ok.: - EEPROM failed to accept the job, - checksum read is wrong.	EEPROM read or checksum error	Vehicle Power Mode: Supply Voltage C056D_ENABLE	= RUN = 9 – 16V ≠ disabled	< 0.5 s (During Initialization)	Safety Non-MIL Emissions Neutral Diagnostic
			Software performs stack and istack usage analysis. This fault qualifies when stack or istack will overflow.	Fault Detected	Vehicle Power Mode: Supply Voltage C056D_ENABLE	= RUN = 9 – 16V ≠ disabled	0.001 s	Safety Non-MIL Emissions Neutral Diagnostic
			At EOL, software shall read the voltage on the IGN_MON pin 45 [P0_2/AN5]. This value is used to calculate voltage calibration value. If the IGN_MON voltage is outside of the allowed voltage limits, software shall set the VCC_CompensationEOL fault.	Acceptable upper and lower voltage thresholds are defined as IGN_MON at EOL +/- 7%.	Vehicle Power Mode: Supply Voltage C056D_ENABLE	= RUN = 9 – 16V ≠ disabled	0.001 s	Safety Non-MIL Emissions Neutral Diagnostic
			On Runtime, software shall read the voltage on the VDD_MON pin 36 [P0_7/AN0]. If the VDD_MON voltage is within the allowable VDD_MON voltage limits stored in EEPROM. If the VDD_MON voltage is outside of the allowed voltage limits, software shall set the VDD_MON_Error fault.	Fault Detected	Vehicle Power Mode: Supply Voltage C056D_ENABLE	= RUN = 9 – 16V ≠ disabled	0.001 s	Safety Non-MIL Emissions Neutral Diagnostic
			This fault qualifies when Watchdog reset will be detected.	Fault Detected	Vehicle Power Mode: Supply Voltage C056D_ENABLE	= RUN = 9 – 16V ≠ disabled	On Watchdog Reset	Safety Non-MIL Emissions Neutral Diagnostic
			This fault qualifies when Watchdog test fails	Fault Detected	Vehicle Power Mode: Supply Voltage C056D_ENABLE	= RUN = 9 – 16V ≠ disabled	< 0.5 s (During Initialization)	Safety Non-MIL Emissions Neutral Diagnostic
			At EOL, software should collect Lateral data from the Murata sensor. If software won't be able to collect 30 data samples during EOL test or avarage measured value is outside range stored in EEPROM, error flag shall be set.	30 data samples	Vehicle Power Mode: Supply Voltage C056D_ENABLE	= RUN = 9 – 16V ≠ disabled	0.001 s	Safety Non-MIL Emissions Neutral Diagnostic
			At EOL, software should collect Longitudinal data from the Murata sensor. If software won't be able to collect 30 data samples during EOL test or avarage measured value is outside range stored in EEPROM, error flag shall be set.	31 data samples	Vehicle Power Mode: Supply Voltage C056D_ENABLE	= RUN = 9 – 16V ≠ disabled	0.001 s	Safety Non-MIL Emissions Neutral Diagnostic

Component/System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
			Software should continuously monitor the PITCH_DIAG input pin of the microprocessor. If the gyro is performing correctly, the PITCH_DIAG will have a logic HIGH status. If a fault is detected within the gyro, the PITCH_DIAG will have a logic LOW status. During normal operation, when PITCH_DIAG has a logic LOW status for ten consecutive CAN cycles (0.1 s), the invalid Flag should be set. If the PITCH_DIAG pin transitions from LOW to HIGH, the error fault is to be dematured after 10.05 s.	Fault Detected	Vehicle Power Mode: Supply Voltage C056D_ENABLE	= RUN = 9 – 16V ≠ disabled	0.003 s	Safety Non-MIL Emissions Neutral Diagnostic
			At EOL, software should continuously monitor the PITCH_TEMP pin 38 [P0_5/AN2] input pin of the microprocessor. Software shall set error flag If average measured temperature value is outside range	1.788V to 4.029V.	Vehicle Power Mode: Supply Voltage C056D_ENABLE	= RUN = 9 – 16V ≠ disabled	0.001 s	Safety Non-MIL Emissions Neutral Diagnostic
			At EOL,Software should collect Pitch rate data on PITCH_RATE pin 24 [P1_3/~K13/AN11] input pin of the microprocessor. Software shall set error flag If average measured rate value is outside range	2.4V to 2.6V.	Vehicle Power Mode: Supply Voltage C056D_ENABLE	= RUN = 9 – 16V ≠ disabled	0.001 s	Safety Non-MIL Emissions Neutral Diagnostic
			Software is to monitor PITCH_RATE pin and PITCH_TEMP pin. If the value of PITCH_TEMP increases at least 171mV in less than 10ms and PITCH_RATE is below 1.5V for at least 0.05 s, it can be concluded that the rate sensor has an open ground pin and the validity bit for the rate sensor data should be set to invalid. The error flag should be dematured if PITCH_RATE increases above 1.5V for 0.1 s.	1.5V	Vehicle Power Mode: Supply Voltage C056D_ENABLE	= RUN = 9 – 16V ≠ disabled	0.009 s	Safety Non-MIL Emissions Neutral Diagnostic
			At EOL, software should collect PITCH_RATE data when PITCH_SELF_TEST pin have logic HIGH status. If avarage measured value is outside range, error flag shall be set.	3.011V to 3.887V	Vehicle Power Mode: Supply Voltage C056D_ENABLE	= RUN = 9 – 16V ≠ disabled	0.001 s	Safety Non-MIL Emissions Neutral Diagnostic
			Software should set PitchST_Error when Pitch Sensor failed three times during self test procedure. Pitch sensor will fail self test when: - during startup, if the PITCH_DIAG transitions from logic LOW to logic HIGH, - measured PITCH_RATE during self test procedure will be higher than 4V, - difference between measured PITCH_RATE during self test and PITCH_RATE value before self test is not in range. Thresholds are stored in the EEPROM.	>4V	Vehicle Power Mode: Supply Voltage C056D_ENABLE	= RUN = 9 – 16V ≠ disabled	0.001 s	Safety Non-MIL Emissions Neutral Diagnostic
			Software shall report a PitchTempRange invalid error whenever the voltage on PITCH_TEMP is outside the range of 1.225V to 3.835V for more than 0.1 s. The error flag shall be released when the PITCH_TEMP voltage is within the specified range for 0.05 s. PITCH_RATE data shall continue to be transmitted when the PITCH_TEMP out of range error flag is present.	1.225V to 3.835V	Vehicle Power Mode: Supply Voltage C056D_ENABLE	= RUN = 9 – 16V ≠ disabled	0.003 s	Safety Non-MIL Emissions Neutral Diagnostic
			Software shall report a Pitch_High_Error when the voltage on PITCH_RATE is above 4.845V (threshold is configurable in EEPROM) for a period of 0.05 sec, the error shall be released when the voltage is below 4.845V for a period of 0.05 sec. The sensitivity for the yaw sensor should be 16mV/°/sec.	>4.85V	Vehicle Power Mode: Supply Voltage C056D_ENABLE	= RUN = 9 – 16V ≠ disabled	0.003 s	Safety Non-MIL Emissions Neutral Diagnostic
			Software shall report a Pitch_Low_Error when the voltage on PITCH_RATE is below 0.155V (threshold is configurable in EEPROM) for a period of 0.05 sec, the error shall be released when the voltage is above 0.155V for a period of 0.05 sec. The sensitivity for the yaw sensor should be 16mV/°/sec.	<0.155V	Vehicle Power Mode: Supply Voltage C056D_ENABLE	= RUN = 9 – 16V ≠ disabled	0.003 s	Safety Non-MIL Emissions Neutral Diagnostic
			Software should continuously monitor the ROLL_DIAG input pin of the microprocessor. If the gyro is performing correctly, the ROLL_DIAG will have a logic HIGH status. If a fault is detected within the gyro, the ROLL_DIAG will have a logic LOW status. During normal operation, when ROLL_DIAG has a logic LOW status for ten consecutive CAN cycles (0.1 s), the invalid Flag should be set. If the ROLL_DIAG pin transitions from LOW to HIGH, the error fault is to be dematured after 10.05 s.		Vehicle Power Mode: Supply Voltage C056D_ENABLE	= RUN = 9 – 16V ≠ disabled	0.003 s	Safety Non-MIL Emissions Neutral Diagnostic
Electronic Control Unit Hardware	C056D		At EOL, software should continuously monitor the ROLL_TEMP pin 39 [P0_4/AN3] input pin of the microprocessor. Software shall set error flag If average measured temperature value is outside range	1.788V to 4.029V.	Vehicle Power Mode: Supply Voltage C056D_ENABLE	= RUN = 9 – 16V ≠ disabled	0.001 s	Safety Non-MIL Emissions Neutral Diagnostic
			At EOL,Software should collect Roll rate data on ROLL_RATE pin 28 [P1_2/~K12/AN10] input pin of the microprocessor. Software shall set error flag If average measured rate value is outside range.	2.4V to 2.6V.	Vehicle Power Mode: Supply Voltage C056D_ENABLE	= RUN = 9 – 16V ≠ disabled	0.001 s	Safety Non-MIL Emissions Neutral Diagnostic

Component/System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
		Internal Self Test Failed	Software is to monitor ROLL_RATE pin and ROLL_TEMP pin. If the value of ROLL_TEMP increases at least 171mV in less than 10ms and ROLL_RATE is below 1.5V for at least 0.05 s, it can be concluded that the rate sensor has an open ground pin and the validity bit for the rate sensor data should be set to invalid. The error flag should be dematured if ROLL_RATE increases above 1.5V for 0.1 s.	1.5V	Vehicle Power Mode: Supply Voltage C056D_ENABLE	= RUN = 9 – 16V ≠ disabled	0.009 s	Safety Non-MIL Emissions Neutral Diagnostic
			At EOL, software should collect ROLL_RATE data when ROLL_SELF_TEST pin have logic HIGH status. If avarage measured value is outside range, error flag shall be set.	3.011V to 3.887V	Vehicle Power Mode: Supply Voltage C056D_ENABLE	= RUN = 9 – 16V ≠ disabled	0.001 s	Safety Non-MIL Emissions Neutral Diagnostic
			Software should set RollST_Error when Roll Sensor failed three times during self test procedure. Roll sensor will fail self test when: - during startup, if the ROLL_DIAG transitions from logic LOW to logic HIGH, - measured ROLL_RATE during self test procedure will be higher than 4V, - difference between measured ROLL_RATE during self test and ROLL_RATE value before self test is not in range. Thresholds are stored in the EEPROM.	>4V	Vehicle Power Mode: Supply Voltage C056D_ENABLE	= RUN = 9 – 16V ≠ disabled	0.001 s	Safety Non-MIL Emissions Neutral Diagnostic
			Software shall report a RollTempRange invalid error whenever the voltage on ROLL_TEMP is outside the range of 1.225V to 3.835V for more than 0.1 s. The error flag shall be released when the ROLL_TEMP voltage is within the specified range for 0.05 s. ROLL_RATE data shall continue to be transmitted when the ROLL_TEMP out of range error flag is present.	1.225V to 3.835V	Vehicle Power Mode: Supply Voltage C056D_ENABLE	= RUN = 9 – 16V ≠ disabled	0.003 s	Safety Non-MIL Emissions Neutral Diagnostic
			Software shall report a Roll_High_Error when the voltage on ROLL_RATE is above 4.845V (threshold is configurable in EEPROM) for a period of 0.05 sec, the error shall be released when the voltage is below 4.845V for a period of 0.05 sec. The sensitivity for the yaw sensor should be 16mV/°/sec.	>4.85V	Vehicle Power Mode: Supply Voltage C056D_ENABLE	= RUN = 9 – 16V ≠ disabled	0.003 s	Safety Non-MIL Emissions Neutral Diagnostic
			Software shall report a Roll_Low_Error when the voltage on ROLL_RATE is below 0.155V (threshold is configurable in EEPROM) for a period of 0.05 sec, the error shall be released when the voltage is above 0.155V for a period of 0.05 sec. The sensitivity for the yaw sensor should be 16mV/°/sec.	<0.155V	Vehicle Power Mode: Supply Voltage C056D_ENABLE	= RUN = 9 – 16V ≠ disabled	0.003 s	Safety Non-MIL Emissions Neutral Diagnostic
			Software should set VTI_CommErr when SPI will be busy during communication with Murata sensor for 100 consecutive transmissions.		Vehicle Power Mode: Supply Voltage C056D_ENABLE	= RUN = 9 – 16V ≠ disabled	0.001 s	Safety Non-MIL Emissions Neutral Diagnostic
			Software should set SENS_VTI_INIT when Murata sensor failed three times during self test procedure. Murata sensor will fail self test when: - software won't be able to send SPI commands on startup to Murata sensor - received response will be faulted.		Vehicle Power Mode: Supply Voltage C056D_ENABLE	= RUN = 9 – 16V ≠ disabled	0.001 s	Safety Non-MIL Emissions Neutral Diagnostic
			Software shall report a Yaw_High_Error when the voltage on YAW_RATE is above 4.845V (threshold is configurable in EEPROM) for a period of 0.05 sec, the error shall be released when the voltage is below 4.845V for a period of 0.05 sec. The sensitivity for the yaw sensor should be 16mV/°/sec.	>4.85V	Vehicle Power Mode: Supply Voltage C056D_ENABLE	= RUN = 9 – 16V ≠ disabled	0.003 s	Safety Non-MIL Emissions Neutral Diagnostic
			Software should set VTI_ST_error when Murata sensor will return ST bit set in response message.	Fault Detected	Vehicle Power Mode: Supply Voltage C056D_ENABLE	= RUN = 9 – 16V ≠ disabled	0.003 s	Safety Non-MIL Emissions Neutral Diagnostic
			Software should set VTI_SAT_Fault when Murata sensor will return SAT bit set in response message.	Fault Detected	Vehicle Power Mode: Supply Voltage C056D_ENABLE	= RUN = 9 – 16V ≠ disabled	0.003 s	Safety Non-MIL Emissions Neutral Diagnostic
			Software should set VTI_FrameErr when Murata sensor will return FRME bit set in 10 consecutive messages.	Fault Detected	Vehicle Power Mode: Supply Voltage C056D_ENABLE	= RUN = 9 – 16V ≠ disabled	0.009 s	Safety Non-MIL Emissions Neutral Diagnostic
			Software should set VTI_PORST_Fault when Murata sensor will return PORST bit set in response message.	Fault Detected	Vehicle Power Mode: Supply Voltage C056D_ENABLE	= RUN = 9 – 16V ≠ disabled	0.003 s	Safety Non-MIL Emissions Neutral Diagnostic

Component/System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
			Software shall report a Yaw_Low_Error when the voltage on YAW_RATE is below 0.155V (threshold is configurable in EEPROM) for a period of 0.05 sec, the error shall be released when the voltage is above 0.155V for a period of 0.05 sec. The sensitivity for the yaw sensor should be 16mV/°/sec.	<0.155V	Vehicle Power Mode: Supply Voltage C056D_ENABLE	= RUN = 9 – 16V ≠ disabled	0.003 s	Safety Non-MIL Emissions Neutral Diagnostic
			Software should continuously monitor the YAW_DIAG input pin of the microprocessor. If the gyro is performing correctly, the YAW_DIAG will have a logic HIGH status. If a fault is detected within the gyro, the YAW_DIAG will have a logic LOW status. During normal operation, when YAW_DIAG has a logic LOW status for ten consecutive CAN cycles (0.1 s), the invalid Flag should be set. If the YAW_DIAG pin transitions from LOW to HIGH, the error fault is to be dematured after 10.05 s.	Fault Detected	Vehicle Power Mode: Supply Voltage C056D_ENABLE	= RUN = 9 – 16V ≠ disabled	0.003 s	Safety Non-MIL Emissions Neutral Diagnostic
			At EOL, software should continuously monitor the YAW_TEMP pin 37 [P0_6/AN1] input pin of the microprocessor. Software shall set error flag If average measured temperature value is outside range.	1.788V to 4.029V.	Vehicle Power Mode: Supply Voltage C056D_ENABLE	= RUN = 9 – 16V ≠ disabled	0.001 s	Safety Non-MIL Emissions Neutral Diagnostic
			At EOL,Software should collect Yaw rate data on YAW_RATE pin 30 [P1_0/~K10/AN8] input pin of the microprocessor. Software shall set error flag If average measured rate value is outside range.	2.4V to 2.6V.	Vehicle Power Mode: Supply Voltage C056D_ENABLE	= RUN = 9 – 16V ≠ disabled	0.001 s	Safety Non-MIL Emissions Neutral Diagnostic
			Software is to monitor YAW_RATE pin and YAW_TEMP pin. If the value of YAW_TEMP increases at least 171mV in less than 10ms and YAW_RATE is below 1.5V for at least 0.05 s, it can be concluded that the rate sensor has an open ground pin and the validity bit for the rate sensor data should be set to invalid. The error flag should be dematured if YAW_RATE increases above 1.5V for 0.1 s.	1.5V	Vehicle Power Mode: Supply Voltage C056D_ENABLE	= RUN = 9 – 16V ≠ disabled	0.009 s	Safety Non-MIL Emissions Neutral Diagnostic
			At EOL, software should collect YAW_RATE data when YAW_SELF_TEST pin have logic HIGH status. If avarage measured value is outside range, error flag shall be set.	3.011V to 3.887V	Vehicle Power Mode: Supply Voltage C056D_ENABLE	= RUN = 9 – 16V ≠ disabled	0.001 s	Safety Non-MIL Emissions Neutral Diagnostic
			Software should set YAWST_Error when YAW Sensor failed three times during self test procedure. Yaw sensor will fail self test when: - during startup, if the YAW_DIAG transitions from logic LOW to logic HIGH, - measured YAW_RATE during self test procedure will be higher than 4V, - difference between measured YAW_RATE during self test and YAW_RATE value before self test is not in range. Thresholds are stored in the EEPROM.	>4V	Vehicle Power Mode: Supply Voltage C056D_ENABLE	= RUN = 9 – 16V ≠ disabled	0.001 s	Safety Non-MIL Emissions Neutral Diagnostic
			Software shall report a YawTempRange invalid error whenever the voltage on YAW_TEMP is outside the range of 1.225V to 3.835V for more than 0.1 s. The error flag shall be released when the YAW_TEMP voltage is within the specified range for 0.05 s. YAW_RATE data shall continue to be transmitted when the YAW_TEMP out of range error flag is present.	1.225V to 3.835V	Vehicle Power Mode: Supply Voltage C056D_ENABLE	= RUN = 9 – 16V ≠ disabled	0.003 s	Safety Non-MIL Emissions Neutral Diagnostic
			At EOL, software should collect Vertical data from the Murata sensor. If software won't be able to collect 30 data samples during EOL test or avarage measured value is outside range stored in EEPROM, error flag shall be set.	Fault Detected	Vehicle Power Mode: Supply Voltage C056D_ENABLE	= RUN = 9 – 16V ≠ disabled	0.001 s	Safety Non-MIL Emissions Neutral Diagnostic
Electronic Control Unit Software	C056E	Vehicle Configuration Not Programmed	Calibration for vehicle not provided	Fault Detected	Vehicle Power Mode: Supply Voltage C056E_ENABLE	= RUN = 9 – 16V ≠ disabled	< 0.5 s (During Initialization)	Safety Non-MIL Emissions Neutral Diagnostic
		Checksum Error	This fault qualifies when EEPROM read of Peripheral Data section is not accepted or failed.	Fault Detected	EEPROM read or checksum error	when EEPROM read of Peripheral Data section is not accepted or failed	< 0.5 s (During Initialization)	Safety Non-MIL Emissions Neutral Diagnostic
			This fault qualifies when EEPROM read of System Parameters section is not accepted or failed.	Fault Detected	EEPROM read or checksum error	when EEPROM read of System Parameters section is not accepted or failed.	< 0.5 s (During Initialization)	Safety Non-MIL Emissions Neutral Diagnostic
			This fault qualifies when ROM check fails	Fault Detected	ROM	When ROM check fails	< 0.5 s (During Initialization)	Safety Non-MIL Emissions Neutral Diagnostic
IMU Communications	U0077	Chassis Expansion CAN Bus Off -	This fault qualifies when CAN Bus Off will be detected	Fault Detected	Vehicle Power Mode: Supply Voltage U0077_ENABLE	= RUN = 9 – 16V ≠ disabled	0.001 s	Safety Non-MIL Emissions Neutral Diagnostic

Component/System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
IMU Communications	U023A	Lost Communication with Active Safety Control Module	Software should set CAN_OverSync when IMU will get sync message faster than 4msec rate (i.e 0.001 s-0.003 s). Normally IMU will get sync message for every 10ms Note: The above mentioned criteria is valid only after 0.5 s from startup	Fault Detected	Vehicle Power Mode: Supply Voltage U023A_ENABLE	= RUN = 9 – 16V ≠ disabled	0.05 s	Safety Non-MIL Emissions Neutral Diagnostic
			Software should set CAN_SyncDLCFail when sync message have bad DLC.	Fault Detected	Vehicle Power Mode: Supply Voltage U023A_ENABLE	= RUN = 9 – 16V ≠ disabled	0.001 s	Safety Non-MIL Emissions Neutral Diagnostic
			Software should set CAN_Sync_err when IMU will not receive sync message for known time. This time is set in EEPROM. Note: The above mentioned criteria is valid only after 0.5 s from startup	Fault Detected	Vehicle Power Mode: Supply Voltage U023A_ENABLE	= RUN = 9 – 16V ≠ disabled	0.05 s	Safety Non-MIL Emissions Neutral Diagnostic
			Software should set CAN_UnderSync when IMU will not receive sync message for known time. This time is set in EEPROM. Note: The above mentioned criteria is valid only after 0.5 s from startup	Fault Detected	Vehicle Power Mode: Supply Voltage U023A_ENABLE	= RUN = 9 – 16V ≠ disabled	0.05 s	Safety Non-MIL Emissions Neutral Diagnostic

Component/System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Electronic Control Unit Hardware	B101D	RAM Failure - This test is run in its entirety or until a fault is detected. The RAM Test Algorithm will cycle through the RAM memory map and verify each bit within each byte of RAM is valid. This is accomplished by writing $AA, then reading the value back, if the value is not $AA the DTC will set. If the value is $AA the algorithm will write $55, then read the value back, if the value is not $55 the DTC will set.	For each memory map test if: Write $AA AND Write $55	≠$AA upon read ≠$55 upon read	Vehicle Power Mode: Supply Voltage Virtual Network condition B101D_34_ENABLE	= Any = 9 – 16V = Any Virtual Network that the ECU participates in is active. ≠ disabled	The RAM Test algorithm will RUN once on Power Up until it completes. Takes 0.02 s	Safety Non-MIL Emissions Neutral Diagnostic
		ROM Failure - The Flash Test Algorithm will cycle through the Flash memory map, byte by byte. The algorithm will sum each byte, this includes the checksum written by the GM CANflash 4.0 utility.	Checksum	≠0	Vehicle Power Mode: Supply Voltage Virtual Network condition B101D_35_ENABLE	= Any = 9 – 16V = Any Virtual Network that the ECU participates in is active. ≠ disabled	The Flash Test algorithm will run once at Power up until it completes. Takes 0.350 s	Safety Non-MIL Emissions Neutral Diagnostic
		EEPROM Failure - Each EEPROM block contains a checksum value, if the contents of the EEPROM Block do not evaluate to their corresponding checksum, three attempts to write to EEPROM and to read correct value written will occur before setting the DTC.	Evaluated Checksum for EEPROM Block	≠ Predefined Checksum Value	Vehicle Power Mode: Supply Voltage Virtual Network condition B101D_36_ENABLE	= Any = 9 – 16V = Any Virtual Network that the ECU participates in is active. ≠ disabled	The EEPROM Test algorithm will run once at Power up until it completes. Takes 0.02 s	Safety Non-MIL Emissions Neutral Diagnostic
			Internal Electronic Failure - FLASH & RAM ECC check verifies correct operation of ECC functionality in memory, if check at power cycle fails or at some point in time during runtime an error is detected in FLASH & RAM ECC registers then the DTC is set. ALU check tests its integrity by performing several operations and verifying the result is correct, if at some point a result proves to be incorrect then the DTC is set. REGISTER check tests the registers integrity, verifying the success of the reading/writing process. If at any register the verification proves incorrect, then the DTC is set. iMx ALU check constantly verifies that iMx ALU performs operations correctly, if at some point the iMx ALU check result proves to be incorrect compared with a known expected result, then the DTC is set.	Fault Detected	Vehicle Power Mode: Supply Voltage Virtual Network condition B101D_39_ENABLE	= RUN = 9 – 16V = Any Virtual Network that the ECU participates in is active. ≠ disabled	FLASH ECC check is tested at each power cycle and at runtime each 0.01 s RAM ECC check is tested at each power cycle and at runtime each 0.01 s ALU check is tested at each power cycle REGISTER check is tested at each power cycle iMx ALU check is tested at runtime each 0.1 s	Safety Non-MIL Emissions Neutral Diagnostic
		Internal Communications Failure between micro processors	At startup VuC allows 50 seconds for iMx to begin communication, if no communication starts within 50 seconds then the DTC is set. This DTC can only be set during startup.	Fault Detected	Vehicle Power Mode: Supply Voltage Virtual Network condition B101D_3C_ENABLE	= RUN = 9 – 16V = Any Virtual Network that the ECU participates in is active. ≠ disabled	50 s	Safety Non-MIL Emissions Neutral Diagnostic

Electronic Control Unit Software	B101E	Calibration Data Set Not Programmed	Default Calibrations Stored. This is checked by verifying a specific signature is written at calibration section	Memory location is Set to 0xFF or Calibration signature is not present	Vehicle Power Mode: Supply Voltage Virtual Network condition B101E_42_ENABLE	= RUN = 9 – 16V = Any Virtual Network that the ECU participates in is active. ≠ disabled	Once at power-up	Safety Non-MIL Emissions Neutral Diagnostic
Map Data Programming	B126B	The map data is not up to date	(current date) - (last successful map update)	>= calibration attribute MaxMapAge (6 months)	Vehicle Power Mode: VN Activation Conditions: Supply Voltage Virtual Network condition B126B_ENABLE	= RUN COMM_ENABLE=HIGH = 9 – 16V = Any Virtual Network that the ECU participates in is active. ≠ disabled	The map age verification algorithm will RUN once on Power Up until it completes.	Safety Non-MIL Emissions Neutral Diagnostic
Control Module Power Circuit	B1325	Voltage Below Threshold	V Supply (V Batt)	= 9.0V (+/- 0.5 V)	Vehicle Power Mode: Virtual Network condition B1325_03_ENABLE	= RUN = Any Virtual Network that the ECU participates in is active. ≠ disabled	After 10 ms of voltage transition to undervoltage	Safety Non-MIL Emissions Neutral Diagnostic
		Voltage Above Threshold	V Supply (V Batt)	= 16.0V (+/- 0.5 V)	Vehicle Power Mode: Virtual Network condition B1325_07_ENABLE	= RUN = Any Virtual Network that the ECU participates in is active. ≠ disabled	After 10 ms of voltage transition to overvoltage	Safety Non-MIL Emissions Neutral Diagnostic
Control Module Communication Object Detection CAN Bus Off	U0075	The following messages are not received on CAN Bus: $260 - PPS_ElevHdSpd_FO $261 - PPS_PosLat_FO $262 - PPS_PosLong_FO $263 - PPS_SigAcqTime_FO $264 - PPS_Time_FO $265 - PPS_QualMetrics_FO $308 - F_Vehicle_Path_Estimate $A1 - F_Master_Time_Sync The following message are not sent on CAN Bus: $604 - ADAS_Position_FO $605 - ADAS_Segment_FO $606 - ADAS_Stub_FO $607 - ADAS_Profile_Long_FO $608 - ADAS_Profile_Short_FO $609 - ADAS_Metadata_FO $60A - ADAS_Protection_FO $60B - ADAS_Profile_Long2_FO $60C - ADAS_Profile_Short2_FO	Can bus off is detected on Can Bus	Fault Detected	Vehicle Power Mode: Virtual Network condition ECU_COMM_Active U0075_00_ENABLE DTC U023B	= OFF, RUN, ACCESSORY = Any Virtual Network that the ECU participates in is active. = enabled ≠ disabled = not active	CAN bus off condition is monitored each 1 s	Safety Non-MIL Emissions Neutral Diagnostic
Lost Communication with Active Safety Control Module 2	U023B	The following messages are not recieved from EOCM2B $260 - PPS_ElevHdSpd_FO $261 - PPS_PosLat_FO $262 - PPS_PosLong_FO $263 - PPS_SigAcqTime_FO $264 - PPS_Time_FO $265 - PPS_QualMetrics_FO $308 - F_Vehicle_Path_Estimate $A1 - F_Master_Time_Sync	~~Messages not received for 3 out of a 16 fault window. Window is 1000 ms.~~ There is a window of 250ms in which no PPS_ CAN message has been received by AMM or no PPS_ CAN message was received by AMM during 1st 5 seconds after boot up	Fault Detected	Non OBD Control Modules: Vehicle Power Mode condition: OBD Control Modules: Accessory Wake Up Virtual Network condition: Exceptions: • U023B_00_ENABLE = disabled; however, failsoft actions shall still be taken if failure conditions are met. • When the Bus Off events counter, used in the X of Y debounce strategy is > 0, • When a bus off condition (U0075) is current, these Lost Communications DTCs shall not set but the failsoft action shall occur if conditions to set the DTC are met. • The conditions listed in Inhibiting Storage of “Lost Communication with” DTCs section are not active	=RUN =Active =Any Module Active	After 0.250 s of AMM receiving last PPS_ CAN message	Safety Non-MIL Emissions Neutral Diagnostic

Component/System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
System Thermal Error	C0176	Internal Electronic Failure	An internal electronics failure within the EPS as been detected	Fault Detected	Exception: Algorithm shall not run if C017654_ENABLE = disabled	Vehicle Power Mode Condition: RUN ECU Operational Condition: None Vehicle Operating Conditions: 6.0V < Vbat < 16V, Engine is running.	0.02 s	Safety Non-MIL Emissions Neutral Diagnostic
		Temperature High	When the system gets hot enough that there is a noticeable drop in performance (e.g.: a drop to 80% of nominal or below) The capability of the ECU is reduced due to temperature.	> 180°C	Exception: Algorithm shall not run if C017654_ENABLE = disabled	Vehicle Power Mode Condition: RUN ECU Operational Condition: None Vehicle Operating Conditions: 6.0V < Vbat < 16V, Engine is running.	0.02 s	Safety Non-MIL Emissions Neutral Diagnostic
Steering Wheel Angle Sensor	C0460	Angle Measurement Errors	Handwheel angle value outside mechanical limitation OR Motor position and angle sensor position mismatched by	> ±540° >±15°	Exception: Algorithm shall not run if C046000_ENABLE = disabled	Vehicle Power Mode Condition: RUN (do not run during CRANK) ECU Operational Condition: None Vehicle Operating Conditions: 6.0V < Vbat < 16V, Engine is running.	0.06 s	Safety Non-MIL Emissions Neutral Diagnostic
		Calibration Not Learned	Check of flag in NVM to confirm that sensor calibration has taken place	Fault Detected	Exception: Algorithm shall not run if C046058_ENABLE = disabled	Vehicle Power Mode Condition: RUN (do not run during CRANK) ECU Operational Condition: None Vehicle Operating Conditions: 6.0V < Vbat < 16V, Engine is running.	0.004 s	Safety Non-MIL Emissions Neutral Diagnostic
		Incorrect Reaction After Event	PWM Duty Cycle OR PWM Period < 776 us or > 1304 us OR Difference between the fine and coarse signals > 51 deg	< 5% or > 95% < 776 us or > 1304 us > 51 deg	Exception: Algorithm shall not run if C046058_ENABLE = disabled	Vehicle Power Mode Condition: RUN (do not run during CRANK) ECU Operational Condition: None Vehicle Operating Conditions: 6.0V < Vbat < 16V, Engine is running.	0.02 s	Safety Non-MIL Emissions Neutral Diagnostic
		Plausibility Failure	difference between the calibrated straight ahead angle and the calculated road-wheel straight ahead value	> 30 deg	Exception: Algorithm shall not run if C04605A_ENABLE = disabled	Vehicle Power Mode Condition: RUN (do not run during CRANK) ECU Operational Condition: None Vehicle Operating Conditions: Engine is running.	0.06 s	Safety Non-MIL Emissions Neutral Diagnostic
Electric Steering Motor Circuit	C0475	ECU Microfault	ECU C micro has tripped with a B level diagnostic.	Fault Detected	Exception: Algorithm shall not run if C047500_ENABLE = disabled	Vehicle Power Mode Condition: RUN ECU Operational Condition: None Vehicle Operating Conditions: 6.0V < Vbat < 16V, Engine is running.	Continuously Monitored; Fault Detected	Safety Non-MIL Emissions Neutral Diagnostic
Steering Wheel Torque Input Sensor	C0545	Torque Sensor diagnostics	The faults are raised if Torque Sensor diagnostics detect that the PWM period for channel 1 or 2 is continuously below and above the threshold of 384uSec and 640uSec respectively for 20ms OR The faults are raised if Torque Sensor diagnostics detect that the PWM duty for channel 1 or 2 is continuously above and below a threshold of 95% and 5% respectively for 20ms OR This fault is raised if the difference between the torque calculated in both channels is greater than a fixed error threshold of 2.5Nm continuously for 20ms OR This fault is raised if there is at least one confirmed fault detected on each channel with respect to PWM duty and frequency continuously for 20ms the following torque sensor fault codes are raised at power up	Threshold for Torque Cross Check = 2.5 Nm	Exception: Algorithm shall not run if C054500_ENABLE = disabled	Vehicle Power Mode Condition: RUN ECU Operational Condition: None Vehicle Operating Conditions: 6.0V < Vbat < 16V, Engine is running.	0.02 s	Safety Non-MIL Emissions Neutral Diagnostic
		Internal Self Test Failed	Torque crosscheck fault - Difference in torque measurement between both sensors.	Fault Detected	Exception: Algorithm shall not run if C05453B_ENABLE = disabled	Vehicle Power Mode Condition: RUN ECU Operational Condition: None Vehicle Operating Conditions: 6.0V < Vbat < 16V, Engine is running.	0.02 s	Safety Non-MIL Emissions Neutral Diagnostic
Steering Gear Performance	C055C	High Steering Rack Friction	Software determines the level of steering rack friction and determines if there has been an increased levels of friction of the steering gear over the life of the product.	High Friction Fault Detected	None	ECU Operational Condition: Power up, Normal Operation Vehicle Operating Conditions: Ignition ON	0.02 s	Safety Non-MIL Emissions Neutral Diagnostic

System Configuration	C0569	General Checksum Failure	This fault is raised if the Gearing tune block has a CRC fault	Fault Detected	None	ECU Operational Condition: Power UP Vehicle Operating Conditions: Ignition ON.	Once at Power-up	Safety Non-MIL Emissions Neutral Diagnostic
		Internal Self Test Failed	This fault will be set during powerup on observing the presence of unlock software.	Manufacturing Engineering Counter ≠ 0	None	ECU Operational Condition: Power UP Vehicle Operating Conditions: Ignition ON.	Once at Power-up	Safety Non-MIL Emissions Neutral Diagnostic
		Calibration Data Set Not Programmed	This fault is raised if the tune loaded does not match the application software loaded. OR This fault is raised if Gear Polarity is set to 0. OR Tune Selection indicates an invalid Gear Tune selection. OR This fault is raised when MEC =0 and the Vehicle tune selected is not Default Vehicle Tune.	Fault Detected	Exception: Algorithm shall not run if C0566942_ENABLE = disabled	Vehicle Power Mode Condition: RUN ECU Operational Condition: None Vehicle Operating Conditions: 6.0V < Vbat < 16V, Engine is running	Once at Power-up	Safety Non-MIL Emissions Neutral Diagnostic
		Vehicle Configuration Not Programmed	This fault is raised if the End of line data indicate that the TRW end of line has marked the part as EPS being out of specification. OR This fault indicates that the EPP has not passed TRW's end of line tests.	Fault Detected	Exception: Algorithm shall not run if C0566942_ENABLE = disabled	ECU Operational Condition: Power UP Vehicle Operating Conditions: Ignition ON.	Once at Power-up	Safety Non-MIL Emissions Neutral Diagnostic
		Micro Processor, ROM/RAM or SPI Fault	This fault is raised if the ISense current measurement is not reading a zero(+/-5A) at power up continuously for 20ms. OR This fault is raised if the ISense measurement does not respond to a positive offset correctly during power up (between 63A and 71A). OR This fault is raised if the ISense measurement does not respond to a negative offset correctly during power up (between - 63A and - 71A). OR This fault is raised if the ISense measurement does not correctly respond to both positive and negative offsets being asserted at power up (+/- 10A). OR This fault is raised if the ISense measurement indicates an un-usually high fault current (200A). OR This fault is raised when the ECU internal watch dog is not serviced continuously for 20ms by monitored tasks. OR This fault is raised during power up if the request for SafeTCore to trip has not resulted in the SafeTCore getting tripped. OR This fault is raised if the EPS raises level B fault that has a fault reaction set to "INCREMENT C69 COUNTER" continuously for three consecutive cycles. OR These faults are raised if during power up the CPU does not process the software correctly. OR This fault is raised during power up there has not been any response from SafeTMon (in the other micro) for 20ms. OR This fault is raised during power up or in normal operation if SafeTMon cannot move to or is in READY state for 20ms when expected. This diagnostic is scheduled every 1ms. OR This fault is raised if SafeTMon cannot detect a software injected failure for a period of 20ms. This diagnostic is executed every 1ms.	Fault Detected	Exception: Algorithm shall not run if C056D00_ENABLE = disabled	Vehicle Power Mode Condition: RUN ECU Operational Condition: None Vehicle Operating Conditions: 6.0V < Vbat < 16V, Engine is running.		

ECU Hardware Performance	C056D		OR This fault is raised if SafeTMon is not in ACTIVE state for 20ms when expected. This diagnostic is scheduled every 20ms. OR This fault is raised if SafeTMon is not in run time mode when expected for a period of 20ms. OR This fault is raised if SafeTMon does not trip during power down when a fault is intentionally injected. OR This fault is raised when a SafeTMon incorrect state transition is requested. This diagnostic is scheduled every 1ms. OR This fault is raised if the EcuC micro's SafeTMon has detected a failure with EpsC micro continuously for a period of 20ms. OR This fault is raised if the EpsC micro's SafeTMon has detected a fault with EcuC Micro continuously for 20ms. OR The above fault is raised if the Motor Torque demand calculation and the SFS blend gains A and B do not match the parallel monitor calculations continuously for 20ms OR This fault is raised if an unexpected and an unhandled interrupt vector has been fired. OR This fault is raised under the following conditions: - If an OS task has been scheduled while the previous scheduling of the same task has not yet completed - If a power up fast task(100uSec task) has over run twice in a row - If a Stack under or over flow has been detected by the software - OS has triggered an unhandled or undefined task OR This fault is raised if the interrupts are not executing at the correct expected rate. OR This fault is raised if the tasks do not execute in the correct order in the software. OR This fault is raised when a fault is detected in safety communication between the two micros continuously for 20ms. This is scheduled every 1ms scheduler. OR This fault is raised if during power up the two micros cannot communicate continuously for 20ms. OR This fault is raised when an Inter Controller Communication Failure is detected continuously for 20ms. OR This fault is raised if the RAM cell does not return the RAM pattern the diagnostic is expecting. The diagnostic is run every 200uSec OR This fault is raised if the Interrupt has been triggered at the correct rate but not for the expected reason. OR This fault will be raised If Core voltage is outside the range of 3.713V to 5.305V for 60ms, then Fault will be raised. OR This fault will be raised if 2v5 port is in between 3.713V to 4.708V for 20ms. OR This fault will be raised if SMC NVM block CRC fails. OR AA5 and A86 are raised during EPS Power Down. When AA5 and A86 are present, the TOI feature(LKA and LCC) will NOT be available in the next key cycle. EPS sets the TOI Feedback status to Temp Limited				0.02 s	Safety Non-MIL Emissions Neutral Diagnostic
		General Memory Failure	Error detected when reading from NVM. OR Error detected when writing to NVM. OR Error detected when erasing NVM data. OR This fault is raised if NVM Data format migration fails. OR This fault is raised if there is any failure with EEPROM.	Fault Detected	None	ECU Operational Condition: Power Up/Power Down/Normal Operation Vehicle Operating Conditions: Ignition ON.	0.008 s	Safety Non-MIL Emissions Neutral Diagnostic
		Operational Software / Calibration Set Not Programmed	This fault is raised if an invalid command has been received by the SafeTMon from the SafeTCore of the other micro. OR This fault is raised if the micros communicate correctly at power up but not in the same mode (ie., one micro is in bootloader mode and the other is in Application mode).	Fault Detected	Exception: Algorithm shall not run if B101E41_ENABLE = disabled	Vehicle Power Mode Condition: RUN ECU Operational Condition: None Vehicle Operating Conditions: 6.0V < Vbat < 16V, Engine is running.	0.008 s	Safety Non-MIL Emissions Neutral Diagnostic

ECU Software Performance	C056E	Calibration Data Set Not Programmed	This fault is raised at startup if the product destination is set to SERVICE ($55) and not to PRODUCTION ($AA).	Fault Detected	Exception: Algorithm shall not run if B101E42_ENABLE = disabled	Vehicle Power Mode Condition: RUN ECU Operational Condition: None Vehicle Operating Conditions: 6.0V < Vbat < 16V, Engine is running.	0.008 s	Safety Non-MIL Emissions Neutral Diagnostic
		EEPROM Error	Fault raised if Infeneon FEE EEPROM Driver indicates a fault condition; fault set on every power cycle if the configuration of the EEPROM manager is incorrect	Fault Detected	Exception: Algorithm shall not run if B101E43_ENABLE = disabled	Vehicle Power Mode Condition: RUN ECU Operational Condition: None Vehicle Operating Conditions: 6.0V < Vbat < 16V, Engine is running.	0.008 s	Safety Non-MIL Emissions Neutral Diagnostic
		Theft / Security Data Not Programmed	This fault is raised if stored CRC of Root Info Table doesn't match with calculated CRC.	Fault Detected	None	ECU Operational Condition: Power up Vehicle Operating Conditions: Ignition ON.	Once at Power-up	Safety Non-MIL Emissions Neutral Diagnostic
		Checksum Error	This fault is raised if the tune or calibration data is corrupted during run time. This is scheduled every 20ms OR This fault is raised if default tune is corrupted and no reference tune can be selected. This is a power up fault.	Fault Detected	Exception: Algorithm shall not run if B101E4A_ENABLE = disabled	Vehicle Power Mode Condition: RUN ECU Operational Condition: None Vehicle Operating Conditions: 9.0V < Vbat < 16V, Engine is running.	0.02 s	Safety Non-MIL Emissions Neutral Diagnostic
		Incorrect Reaction After Event	This fault will be raised if the CAN transmitted ID is different than the configured ID for 5000msec. This is scheduled at 8ms. OR This fault will be raised if the message transmitted periodicity mismatches with configured periodicity for 5000msec. This is scheduled at 1ms. OR This fault will be raised if there is any mismatch between the received EOCM A CE data and extracted data. This diagnostic runs on receipt of the message.	Fault Detected	In addition, setting of the DTC shall be delayed under the following conditions: 1) Within the first 5 seconds after Power Mode is set to RUN	Vehicle Power Mode Condition: RUN ECU Operational Condition: None Vehicle Operating Conditions: 9.0V < Vbat < 16V, Engine is running.	5 s	Safety Non-MIL Emissions Neutral Diagnostic
		Plausibility Failure	These plausibility faults are raised at startup when the appropriate map (or calibration tables) validity conditions are not met.	Fault Detected	Exception: Algorithm shall not run if B101E4B_ENABLE = disabled	Vehicle Power Mode Condition: RUN ECU Operational Condition: None Vehicle Operating Conditions: 9.0V < Vbat < 16V, Engine is running	Once at Power-up	Safety Non-MIL Emissions Neutral Diagnostic
		Signal Above Allowable Range	This fault is raised if an invalid Steering Tune is selected.	Fault Detected	None	ECU Operational Condition: Power up Vehicle Operating Conditions: Ignition ON.	Once at Power-up	Safety Non-MIL Emissions Neutral Diagnostic
Device Power	C0800	Voltage Below Threshold	ECU supply voltage	<9V	Exception: Algorithm shall not run if C080003_ENABLE = disabled DTC is not inhibited when MEC>0	Vehicle Power Mode Condition: RUN ECU Operational Condition: None Vehicle Operating Conditions: Engine is running.	1 s	Safety Non-MIL Emissions Neutral Diagnostic
		Voltage Above Threshold	ECU supply voltage	>16V	Exception: Algorithm shall not run if C080007_ENABLE = disabled DTC is not inhibited when MEC>0	Vehicle Power Mode Condition: RUN ECU Operational Condition: None Vehicle Operating Conditions: Engine is running.	1 s	Safety Non-MIL Emissions Neutral Diagnostic
Lost Communication with Active Safety Control Module 1	U023A	Loss of communications with Active Safety Control Module 1 (EOCM2A) on GM HS and GM CE	This fault is raised if the message StrTrqCmd_A_CE has not been received from the EOCM2A at least twice in the last 10 messages. This fault is raised if the message StrTrqCmd_A_HS has not been received for EOCM2A at least twice in the last 10 messages.	Fault Detected	Exceptions: Algorithm shall not run if; U0023A00_ENABLE = disabled, U007300 status bit 1 = True, MEC > 00, or Bus Off events counter, used in the X of Y debounce strategy is > 0. In addition, setting of the DTC shall be delayed under the following conditions: 1) Within the first 5 seconds after Power Mode is set to RUN 2) Within the first 5 seconds of a reset of the device or device power-up 3) Within the first 5 seconds following recovery from an under-voltage condition	Vehicle Power Mode Condition: Power Mode signal RUN, and EngRunAtv signal is TRUE ECU Operational Condition: ECU_COMM_Active state = True. Vehicle Operating Conditions: 9.0V < Vbat < 16V, engine is running (Engine Run flag = True.	0.1 s	Safety Non-MIL Emissions Neutral Diagnostic

Lost Communication with Active Safety Control Module 2	U023B	Loss of communications with Active Safety Control Module 2 (EOCM2B)	This fault is raised if the message StrTrqCmd_A_CE has not been received from the EOCM2B at least twice in the last 10 messages. This fault is raised if the message StrTrqCmd_A_HS has not been received for EOCM2B at least twice in the last 10 messages.	Fault Detected	Exceptions: Algorithm shall not run if; U0023B00_ENABLE = disabled, U007300 status bit 1 = True, MEC > 00, or Bus Off events counter, used in the X of Y debounce strategy is > 0. In addition, setting of the DTC shall be delayed under the following conditions: 1) Within the first 5 seconds after Power Mode is set to RUN 2) Within the first 5 seconds of a reset of the device or device power-up 3) Within the first 5 seconds following recovery from an under-voltage condition	Vehicle Power Mode Condition: Power Mode signal RUN, and EngRunAtv signal is TRUE ECU Operational Condition: ECU_COMM_Active state = True. Vehicle Operating Conditions: 9.0V < Vbat < 16V, engine is running (Engine Run flag = True.	0.1 s	Safety Non-MIL Emissions Neutral Diagnostic
Data Received From Active Safety Control Module 1	U053B	Invalid Serial Data Received	1) Validity - upon receipt of a monitored signal with its corresponding validity bit set to Invalid. 2) Rolling Count - upon receipt of a monitored signal without the corresponding rolling count value being properly updated. 3) Protection Value - upon receipt of a monitored signal with its corresponding protection value (checksum) not correct. The failure must be present continuously for 2000 mS before the test is considered failed The signals being monitored are: + StrTrqCmd_A_CE, at least twice in the last 10 messages. + StrTrqCmd_A_HS, at least twice in the last 10 messages.	Fault Detected	Exceptions: Algorithm shall not run if; U023A00_ENABLE = disabled, U007300 status bit 1 = True, MEC > 00, or Bus Off events counter, used in the X of Y debounce strategy is > 0. In addition, setting of the DTC shall be delayed under the following conditions: 1) Within the first 5 seconds after Power Mode is set to RUN 2) Within the first 5 seconds of a reset of the device or device power-up 3) Within the first 5 seconds following recovery from an under-voltage condition	Vehicle Power Mode Condition: Power Mode signal RUN, and EngRunAtv signal is TRUE ECU Operational Condition: ECU_COMM_Active state = True. Vehicle Operating Conditions: 9.0V < Vbat < 16V, engine is running (Engine Run flag = True.	2 s	Safety Non-MIL Emissions Neutral Diagnostic
Data Received From Active Safety Control Module 2	U053C	Invalid Serial Data Received	1) Validity - upon receipt of a monitored signal with its corresponding validity bit set to Invalid. 2) Rolling Count - upon receipt of a monitored signal without the corresponding rolling count value being properly updated. 3) Protection Value - upon receipt of a monitored signal with its corresponding protection value (checksum) not correct. The failure must be present continuously for 2000 mS before the test is considered failed The signals being monitored are: + StrTrqCmd_B_CE, at least twice in the last 10 messages. + StrTrqCmd_B_HS, at least twice in the last 10 messages.	Fault Detected	Exceptions: Algorithm shall not run if; U053C71_ENABLE = disabled, U007300 status bit 1 = True, MEC > 00, or Bus Off events counter, used in the X of Y debounce strategy is > 0. In addition, setting of the DTC shall be delayed under the following conditions: 1) Within the first 5 seconds after Power Mode is set to RUN 2) Within the first 5 seconds of a reset of the device or device power-up 3) Within the first 5 seconds following recovery from an under-voltage condition	Vehicle Power Mode Condition: Power Mode signal RUN, and EngRunAtv signal is TRUE ECU Operational Condition: ECU_COMM_Active state = True. Vehicle Operating Conditions: 9.0V < Vbat < 16V, engine is running (Engine Run flag = True.	2	Safety Non-MIL Emissions Neutral Diagnostic

Component/System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Electronic Control Unit Hardware	B101D	The LRR detects any internal supply voltage error or Minimum Exitation Level magnet lost	MON_ADC_1V25_SMPS_V MON_ADC_3V3_LIN_AN_V MON_ADC_3V3_LIN_PA_V MON_ADC_3V8_SMPS_V MON_ADC_4V5_LIN_VCO_V MON_ADC_5V_SMPS_V MON_ADC_3V3_LIN_DIG_V	1.197< V < 1.296 Tolerance for test -1.40% + 2.10% 3.172 < V < 3.417 Tolerance for test -1.5% + 2.00% 3.172 < V < 3.417 Tolerance for test -1.5% + 2.00% 3.531 < V < 4.065 Tolerance for test -1.48% + 1.89% 4.206 < V < 4.788 Tolerance for test -3.20% + 3.70% 4.616 < V < 5.373 Tolerance for test -3.10% + 3.60% 3.172 < V < 3.417 Tolerance for test -1.498% + 1.937%	Voltage: Front LRR Sensor Mode Command Status PID $8002 –System Power Mode K_B101D_0_ENABLE LRR shall not report this DTC in the first 5 seconds after Enable criteria are met, including the case where the LRR is recovering from a low voltage condition.	9 < V <16 V = Not Sensing or Sensing = Run Mode Only =TRUE	ECU checks every 0.01 s	Safety Non-MIL Emissions Neutral Diagnostic
		General Memory Failure. The LRR detects any memory write failure which causes the LRR to be replaced.	This failure is triggered by HW if there is something wrong with MicroController Abstraction Layer configurations (Microcontroller). This DTC should be tested directly with microcontroller register values.	Fault Detected	Voltage: Front LRR Sensor Mode Command Status PID $8002 –System Power Mode K_B101D_32_ENABLE LRR shall not report this DTC in the first 5 seconds after Enable criteria are met, including the case where the LRR is recovering from a low voltage condition.	9 < V < 16V = Not Sensing or Sensing = Run Mode Only =TRUE	0.01 s	Safety Non-MIL Emissions Neutral Diagnostic
		Sepcial Memory Failure. The LRR detects any memory read failure or an internal voltage supply error from the slave microprocessor	This Failure is trigger when SPI module has detected a hardware error during data transfer. On every SPI transfer about 100Hz. Could be tested with oscilloscope connection on SPI_CS & SPI_CLK for correct transmission, and also running a wire from Tx/Rx lines from SPI to ground in order to create a SPI off.	Fault Detected	Voltage: Front LRR Sensor Mode Command Status PID $8002 –System Power Mode K_B101D_33_ENABLE LRR shall not report this DTC in the first 5 seconds after Enable criteria are met, including the case where the LRR is recovering from a low voltage condition.	9 < V < 16V = Not Sensing or Sensing = Run Mode Only =TRUE	0.01 s	Safety Non-MIL Emissions Neutral Diagnostic
		The LRR detects any internal hardware failure (eg. Multiple RAM errors, watchdog errors etc.)	The High Frequency chip is checked over a long time, this failure is triggered if there are invalid values . + HW Error Singal Processing Toolkit Test calulations : Singal Processing Toolkit Test calculations failed for a longer time. + Hw Error Chip Monitoring: Indicates an error in the: - Voltage Controlled Oscilator-Monitor-Path - RF-Module or V-Tune circuit. The SW is not designed to run on that HW version: - HW subcompat Ids min and max are defined in the application SW infoblock. - This failures could be tested creating failures on RF-chip module from ECU or flashing incorrect Production Parameters or SW Application Hardware to HW sample.	Fault Detected	Voltage: Front LRR Sensor Mode Command Status PID $8002 –System Power Mode K_B101D_39_ENABLE LRR shall not report this DTC in the first 5 seconds after Enable criteria are met, including the case where the LRR is recovering from a low voltage condition.	9 < V < 16V = Not Sensing or Sensing = Run Mode Only =TRUE	0.01 s	Safety Non-MIL Emissions Neutral Diagnostic

		The LRR detects a CAN hardware failure	Microcontroller module has detected a clock source failure. Microcontroller module has detected a failure of external oscillator. Test this failures creating an error on external oscillator or bus off on clock source generator.	Fault Detected	Voltage: Front LRR Sensor Mode Command Status PID $8002 –System Power Mode K_B101D_3B_ENABLE LRR shall not report this DTC in the first 5 seconds after Enable criteria are met, including the case where the LRR is recovering from a low voltage condition.	9 < V < 16V = Not Sensing or Sensing = Run Mode Only =TRUE	0.01 s	Safety Non-MIL Emissions Neutral Diagnostic
		Internal temperature measurement below K_LOWTEMP_THRESH_LOW for a period of K_DiagMonitorWindowTemp	Sytem Temperature for a period of K_DiagMonitorWindowTemp (0.1 s)	< -40°C	Voltage: Front LRR Sensor Mode Command Status PID $8002 –System Power Mode K_B101D_53_ENABLE LRR shall not report this DTC in the first 5 seconds after Enable criteria are met, including the case where the LRR is recovering from a low voltage condition.	9 < V < 16V = Not Sensing or Sensing = Run Mode Only =TRUE	0.1 s	Safety Non-MIL Emissions Neutral Diagnostic
		Internal temperature measurement above K_HIGHTEMP_THRESH_HIGH for a period of K_DiagMonitorWindowTemp	System Temperature for a period of K_DiagMonitorWindowTemp (0.1 s)	> 105°C	Voltage: Front LRR Sensor Mode Command Status PID $8002 –System Power Mode K_B101D_54_ENABLE LRR shall not report this DTC in the first 5 seconds after Enable criteria are met, including the case where the LRR is recovering from a low voltage condition.	9 < V < 16V = Not Sensing or Sensing = Run Mode Only =TRUE	0.1 s	Safety Non-MIL Emissions Neutral Diagnostic
Electronic Control Unit Software	B101E	ECU Software Performance - Calibration Data Set Not Programmed	The calibration field: k_default_calibration	= 0 (False)	Voltage: Front LRR Sensor Mode Command Status PID $8002 –System Power Mode K_B101D_42_ENABLE LRR shall not report this DTC in the first 5 seconds after Enable criteria are met, including the case where the LRR is recovering from a low voltage condition.	9 < V < 16V = Not Sensing or Sensing = Run Mode Only =TRUE	0.01 s	Safety Non-MIL Emissions Neutral Diagnostic
		ECU Software Performance - Calibration Not Learned	k_default_calibration AND PID $4175 – Front Long Range Radar Aiming Status	= 0 (False) ≠ Successfully Aimed	Voltage: Front LRR Sensor Mode Command Status PID $8002 –System Power Mode K_B101E_4B_ENABLE LRR shall not report this DTC in the first 5 seconds after Enable criteria are met, including the case where the LRR is recovering from a low voltage condition.	9 < V < 16V = Not Sensing or Sensing = Run Mode Only =TRUE	Every Factory or Service alignment diagnostic not successful	Safety Non-MIL Emissions Neutral Diagnostic
LRR - Control Module Circuit	B1325	Control Module Power Circuit - Voltage Threshold	Bus Voltage For a period of K_DiagMonitorWindowBAT (0.5 s)	< 9V	Front LRR Sensor Mode Command Status Supply Voltage: PID $8002 –System Power Mode K_B1325_03_ENABLE LRR shall not report this DTC in the first 5 seconds after Enable criteria are met, including the case where the LRR is recovering from a low voltage condition.	= Not Sensing or Sensing =9<V<16V =Allowed ECU operation = Run Mode Only =TRUE	0.5 s	Safety Non-MIL Emissions Neutral Diagnostic
			Bus Voltage For a period of K_DiagMonitorWindowBAT (0.5 s)	> 16V	Front LRR Sensor Mode Command Status Supply Voltage: PID $8002 –System Power Mode K_B1325_07_ENABLE LRR shall not report this DTC in the first 5 seconds after Enable criteria are met, including the case where the LRR is recovering from a low voltage condition.	= Not Sensing or Sensing =9<V<16V =Allowed ECU operation = Run Mode Only =TRUE	0.5 s	Safety Non-MIL Emissions Neutral Diagnostic

Phsyical Mounting - Front Long Range Radar Sensor - Wrong Mounting Position	B390C	For Factory alignment, target alignment calibration has exceeded the k_TAC_timeout_value (40 seconds) following initialization of the algorithm and the algorithm has not converged. OR For Service alignment, if alignment calibration has not occurred successfully within 30 minutes of driving . OR While in operation, if radar was previously aligned and has now determined to be misaligned. OR PID $4175 – Front Long Range Radar Aiming Status = Aiming_Error	Algo process only verify the correct angles reported from ECU (angles are saved on Factory or Service alignment diagnostic) and if one of them is not correct on NVM it will report a failure.	Fault Detected	Voltage: Front LRR Sensor Mode Command Status PID $8002 –System Power Mode K_B390C_66_ENABLE LRR shall not report this DTC in the first 5 seconds after Enable criteria are met, including the case where the LRR is recovering from a low voltage condition.	9 < V < 16V = Not Sensing or Sensing = Run Mode Only =TRUE	30 Minutes	Safety Non-MIL Emissions Neutral Diagnostic
CAN Network Communications - Object Detection CAN Bus Off - no additional information	U0075	Using CAN handler for verify messages on BUS and sliding window mechanism in order to confirm it.	CAN OFF from bus handler For 8 out of 10 counts	Fault Detected	Front LRR Sensor Mode Command Status Supply Voltage: PID $8002 –System Power Mode K_U0075_00_ENABLE LRR shall not report this DTC in the first 5 seconds after Enable criteria are met, including the case where the LRR is recovering from a low voltage condition.	= Not Sensing or Sensing =Allowed ECU operation = Run Mode Only =TRUE	0.08 s out of a 0.1 s window	Safety Non-MIL Emissions Neutral Diagnostic
Flexray Bus	U007E	Lost communication on Flexray Channel A or B Bus for	Using FlexRay task the SW is monitoring BUS OFF fault , when is not called (FR signal absence), and this mechanism is monitoring all FlexRay PDU's.	No Flexrays messages received (all messages monitored)	Voltage: Front LRR Sensor Mode Command Status Flexray Network Manager PID $8002 –System Power Mode K_U007E_00_ENABLE LRR shall not report this DTC in the first 5 seconds after Enable criteria are met, including the case where the LRR is recovering from a low voltage condition.	9 < V < 16V = Not Sensing or Sensing = Active or Syncronize = Run Mode Only =TRUE	ECU reports as failed after 0.38 s.	Safety Non-MIL Emissions Neutral Diagnostic
		Invalid Data Received From Image Processing Module “A” (EOCM2A) The LRR detects an EOCM2A PDU and the equivalent redundant PDU with a validity bit as invalid, Or The LRR detects an EOCM2A PDU with a data out of range. Set immediately upon data determined to be out of range.	Messages: + F_Vehicle_Path_Estimate + F_Vehicle_Path_Data_2 OR EOCM2A PDU Data	PDU Invalid Bit on these two Flexray Frames Out of Range - Set fault immediately	Voltage: Front LRR Sensor Mode Command Status Flexray Network Manager PID $8002 –System Power Mode K_U053B_00_ENABLE LRR shall not report this DTC in the first 5 seconds after Enable criteria are met, including the case where the LRR is recovering from a low voltage condition.	9 < V < 16V = Not Sensing or Sensing = Active = Run Mode Only =TRUE	0.08 s out of a 0.1 s window	Safety Non-MIL Emissions Neutral Diagnostic
Network Communications with External Object Computation Module A	U053B	Invalid Data Received From Image Processing Module “A” (EOCM2A) - Alive Counter Incorrect / Not Updated - The LRR detects a mismatch between a received rolling counter and an internally calculated rolling counter, after being filtered through a sliding window mechanism.	Mistmatch between internal rolling counter	Does not match recieved rolling counter	Voltage: Front LRR Sensor Mode Command Status Flexray Network Manager PID $8002 –System Power Mode K_U053B_72_ENABLE LRR shall not report this DTC in the first 5 seconds after Enable criteria are met, including the case where the LRR is recovering from a low voltage condition.	9 < V < 16V = Not Sensing or Sensing = Active = Run Mode Only =TRUE	0.08 s out of a 0.1 s window	Safety Non-MIL Emissions Neutral Diagnostic

		Invalid Data Received From Image Processing Module “A” (EOCM2A) - The LRR detects an incorrect signal protection calculation on received message	+ F_Vehicle_Path_Estimate + F_Smgr_Vehicle_Motion, + Body_Info_FOB + F_Vehicle_Path_Data_2	Signal protection calcultaion failure (checksum value)	Voltage: Front LRR Sensor Mode Command Status Flexray Network Manager PID $8002 –System Power Mode K_U053B_74_ENABLE LRR shall not report this DTC in the first 5 seconds after Enable criteria are met, including the case where the LRR is recovering from a low voltage condition.	9 < V < 16V = Not Sensing or Sensing = Active = Run Mode Only =TRUE	ECU checks every 0.01 s	Safety Non-MIL Emissions Neutral Diagnostic
Network Communications with External Object Computation Module B	U053C	Invalid Data Received From Image Processing Module “A” (EOCM2B) The LRR detects an EOCM2B PDU and the equivalent redundant PDU with a validity bit as invalid, Or The LRR detects an EOCM2A PDU with a data out of range. Set immediately upon data determined to be out of range.	F_Vehicle_Path_Estimate F_Vehicle_Path_Data_2 OR EOCM2A PDU Data	PDU Invalid Bit on these two Flexray Frames Out of Range - Set fault immediately	Voltage: Front LRR Sensor Mode Command Status Flexray Network Manager PID $8002 –System Power Mode K_U053C_00_ENABLE LRR shall not report this DTC in the first 5 seconds after Enable criteria are met, including the case where the LRR is recovering from a low voltage condition.	9 < V < 16V = Not Sensing or Sensing = Active = Run Mode Only =TRUE	ECU checks every 0.01 s	Safety Non-MIL Emissions Neutral Diagnostic
		Invalid Data Received From Image Processing Module “A” (EOCM2B) - Alive Counter Incorrect / Not Updated - The LRR detects a mismatch between a received rolling counter and an internally calculated rolling counter, after being filtered through a sliding window mechanism.	Mistmatch between internal rolling counter	Does not match recieved rolling counter	Voltage: Front LRR Sensor Mode Command Status Flexray Network Manager PID $8002 –System Power Mode K_U053C_73_ENABLE LRR shall not report this DTC in the first 5 seconds after Enable criteria are met, including the case where the LRR is recovering from a low voltage condition.	9 < V < 16V = Not Sensing or Sensing = Active = Run Mode Only =TRUE	0.08 s out of a 0.1 s window	Safety Non-MIL Emissions Neutral Diagnostic
		Invalid Data Received From Image Processing Module “A” (EOCM2A) - The LRR detects an incorrect signal protection calculation on received message	+ F_Vehicle_Path_Estimate + F_Smgr_Vehicle_Motion, + Body_Info_FOB + F_Vehicle_Path_Data_2	Signal protection calcultaion failure (checksum value)	Voltage: Front LRR Sensor Mode Command Status Flexray Network Manager PID $8002 –System Power Mode K_U053C_74_ENABLE LRR shall not report this DTC in the first 5 seconds after Enable criteria are met, including the case where the LRR is recovering from a low voltage condition.	9 < V < 16V = Not Sensing or Sensing = Active = Run Mode Only =TRUE	ECU checks every 0.01 s	Safety Non-MIL Emissions Neutral Diagnostic
Flexray Bus A - Lost Communication with Active Safety Control Module 1 on Flexray Bus	U18CA	CAN driver indicates bus off. Lose communication on Flexray Channel A Bus	+ Body_Info_FOB + FLRR_Sensor_Mode_Command + F_Smgr_Vehicle_Motion + F_Vehicle_Path_Data_2 + F_Vehicle_Path_Estimate	PDU Missing from listed messages (Missing messages)	Voltage: Front LRR Sensor Mode Command Status Flexray Network Manager PID $8002 –System Power Mode K_U18CA_00_ENABLE LRR shall not report this DTC in the first 5 seconds after Enable criteria are met, including the case where the LRR is recovering from a low voltage condition.	9 < V < 16V = Not Sensing or Sensing = Active = Run Mode Only =TRUE	0.5 s	Safety Non-MIL Emissions Neutral Diagnostic
Flexray B - Lost Communication with Active Safety Control Module 2 on Flexray Bus -	U18CB	CAN driver indicates bus off. Lose communication on Flexray Channel B Bus	+ Body_Info_FOB + FLRR_Sensor_Mode_Command + F_Smgr_Vehicle_Motion + F_Vehicle_Path_Data_2 + F_Vehicle_Path_Estimate	PDU Missing from listed messages (Missing messages)	Voltage: Front LRR Sensor Mode Command Status Flexray Network Manager PID $8002 –System Power Mode K_U18CB_00_ENABLE LRR shall not report this DTC in the first 5 seconds after Enable criteria are met, including the case where the LRR is recovering from a low voltage condition.	9 < V < 16V = Not Sensing or Sensing = Active = Run Mode Only =TRUE	0.5 s	Safety Non-MIL Emissions Neutral Diagnostic

Flexray - Control Module Improper Wake-up Performance	U3012	LRR unable to successfully integrate with FlexRay network. Successful Integration is determined by Flexray CommStack reporting Full Communication	Flexray CommStack reporting Full Communication	Fault Detected	Voltage: Front LRR Sensor Mode Command Status Flexray Network Manager PID $8002 –System Power Mode K_U3012_00_ENABLE LRR shall not report this DTC in the first 5 seconds after Enable criteria are met, including the case where the LRR is recovering from a low voltage condition.	9 < V < 16V = Not Sensing or Sensing = Active = Run Mode Only =TRUE	ECU checks every 0.01 s	Safety Non-MIL Emissions Neutral Diagnostic

Component/System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
ECU Hardware Performance	B101D	General Checksum Failure	The purpose of this DTC is to detect checksum failure of NAND Flash File System. DTC is set only when partition mount failed at boot up time. And during run-time, file monitor daemon (It's name is "cfm-daemon") will request system reboot when detect error then system has a chance to repair the problem file system (try fix up or try format) at boot up time. if system couldn't recover file system and fail to mount it then DTC will be set.	= Fault Detected	Exceptions: Algorithm shall not run if; B101D 31_ENABLE = disabled	Vehicle Power Mode condition: ACCESSORY, RUN 'DTC is set when file system not mounted.	Power On Diagnostics	Safety Non-MIL Emissions Neutral Diagnostic
		General Memory Failure	The purpose of DTC is to detect general memory failure. In order to find out this failure, the algorithm perform RAM march test.	DTC is set when RAM check result is not same to defined success value.	Exceptions: Algorithm shall not run if; B101D 32_ENABLE = disabled	Vehicle Power Mode condition: ACCESSORY, RUN	Power On Diagnostics	Safety Non-MIL Emissions Neutral Diagnostic
		Watchdog / Safety µC Failure	The purpose of DTC is to detect watchdog happened in previous cycle. It just only show watch dog was happened.	DTC is set when register value is same to written value in the previous cycle.	Exceptions: Algorithm shall not run if; B101D 37_ENABLE = disabled	Vehicle Power Mode condition: RUN	Running Diagnostics	Safety Non-MIL Emissions Neutral Diagnostic
		Loss of Communications with GPS - Internal Commumications	TBD. 1) The VCP main micro is unable to communicate to the GPS OR 2) The GPS receiver detects an internal fault preventing normal GPS operation.	Cannot communicate with receiver module for 10 seconds. OR Failure set by GPS Reciever	Exceptions: Algorithm shall not run if; B101D 3C_ENABLE = disabled	Vehicle Power Mode condition: ACCESSORY, RUN	Running Diagnostics	Safety Non-MIL Emissions Neutral Diagnostic
Global Positioning System Signal	B2462	Short to Battery	The purpose of this DTC is to detect short to positive of GPS(secondary) antenna circuit. DTC is set when the latest 6 consecutive GPS(secondary) antenna ADC values are under the open/short threshold defined in DID and ANT_PT_SENSE values is high.	Short to Battery Threshold = 1.53 - 2.35 V	Exceptons: Algorithm shall not run if; B2462 01_ENABLE = disabled or, B1325 (IF SUPPORTED) 03 status bit 1 = True or, B1325 (IF SUPPORTED) 07 status bit 1 = True.	Vehicle Power Mode condition: ACCESSORY, RUN Algorithm will be started just after TCP is getting to OnStar on mode.	After the end of boot sequence, modem sends GPS(secondary) antenna ADC value and ANT_PT_SENSE value to MDM via LocAPI every second. MDM checks GPS(secondary) antenna state with these values.	Safety Non-MIL Emissions Neutral Diagnostic
		Short to Ground	The purpose of this DTC is to detect short to ground of GPS(secondary) antenna circuit. Short to Ground DTC is set when the GPS(secondary) Antenna ADC value is under the open/short threshold defined in DID and	ANT_PT_SENSE(GPIO) is low state - GPS Antenna Short to Ground DTC Voltage Lower Value Threshold = 0.05V	Exceptions: Algorithm shall not run if; B2462 02_ENABLE = disabled	Vehicle Power Mode condition: ACCESSORY, RUN Algorithm will be started just after TCP is getting to OnStar on mode.	After the end of boot sequence, modem sends GPS(secondary) antenna ADC value and ANT_PT_SENSE value to MDM via LocAPI every second. MDM checks GPS(secondary) antenna state with these values.	Safety Non-MIL Emissions Neutral Diagnostic
		Open Circuit	The purpose of this DTC is to detect open of GPS(secondary) antenna circuit. DTC is set when the latest 6 consecutive GPS(secondary) antenna ADC values are between open/short threshold and connect/open threshold defined in DID.-	GPS Antenna Open DTC Voltage Upper Value Threshold = 0.2V	Exceptions: Algorithm shall not run if; B2462 04_ENABLE = disabled	Vehicle Power Mode condition: ACCESSORY, RUN Algorithm will be started just after TCP is getting to OnStar on mode.	After the end of boot sequence, modem sends GPS(secondary) antenna ADC value and ANT_PT_SENSE value to MDM via LocAPI every second. MDM checks GPS(secondary) antenna state with these values.	Safety Non-MIL Emissions Neutral Diagnostic

Control Module Communication High Speed CAN Bus Off	U0073	The purpose of this DTC is to detect Bus off status on HS CAN	DTC is set when CAN Bus does not send normal electric current to TCP	= Fault Detected	Exceptions: Algorithm shall not run if; U0073 00_ENABLE = disabled (reference DID $03) In addition, the storing of DTCs shall not be enabled in case that the following conditions are true: - The SystemPowerMode ≠ RUN - Within the first 5 seconds after the High Voltage Wake Up Frame - Within the first 5 s after the transition into the SystemPowerMode RUN - Within the first 5 s of a reset of the module - Within the first 5 s of a recovery from an under or over voltage condition	Vehicle Power Mode condition: OFF, ACCESSORY, or RUN Virtual Network condition: Any Virtual Network that the module participates in is active. ECU Operational condition: While in the ECU_COMM_Active state	Signal supervision timeout (2.5 times the nominal periodic rate of the signal) occurs when the periodic message from the supervised source is lost.	Safety Non-MIL Emissions Neutral Diagnostic

Component/System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
ECU Hardware Performance	C056D	Fault in the microcontroller	Failure of system tests (RAM, ROM, Stack, Watchdog, CPU, ADC) EEPROM does not match SW version	Singe occurrence	Vehicle Power Mode condition: Supply Voltage	= ANY =ANY	Singe occurrence	Safety Non-MIL Emissions Neutral Diagnostic
Steering Position Signal	C0710	Fault in digital hall sensor for steering angle - Includes Angle Out of Range	An internal fault was detected inside the Melexis hall sensor	Singe occurrence	Vehicle Power Mode condition: Supply Voltage	= ANY = ANY	Singe occurrence	Safety Non-MIL Emissions Neutral Diagnostic
		Part not calibrated	Steering angle calibration not performed	Singe occurrence	Vehicle Power Mode condition: Supply Voltage	= ANY = ANY	Singe occurrence	Safety Non-MIL Emissions Neutral Diagnostic
Control Module Communication Bus 'A' Off	U0073	Short circuit on CAN bus or bus off state	CAN Bus	3 bus off events	Vehicle Power Mode condition: Supply Voltage	= ANY = 9-16V	3 Times	Safety Non-MIL Emissions Neutral Diagnostic

Component/System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Primary (Sensor 1) IMU Sensor - Lateral Acceleration Circuit	C0186	This monitor cover various aspects of the lateral acceleration 1 sensor circuit, including: software, hardware, and out of range	① IMU SW driver configuration mismatch. ② Sensor Active Check error. ③ Sensor Continuous Selftest error. ④ Sensor Message Counter error. ⑤ Sensor Checksum error. ⑥ Sensor Lateral Acc. signal error.	①, ② = Fault at start-up ③,④,⑤ = Fault Detetected ⑥ ± 160 deg/s	Comm_Enable Operating Voltage DTC Enabled	= Available = 6.0 - 16.0v = True	①, ② = startup ③ 0.04 s ④, ⑤ = 0.008 s ⑥ = 2 s out of range or 0.022 s out of range because of slope.	Safety Non-MIL Emissions Neutral Diagnostic
Secondary (Sensor 2) IMU Sensor - Lateral Accelerometer Circuit	C018A	This monitor cover various aspects of the lateral acceleration 2 sensor circuit, including: software, hardware, and out of range	① IMU SW driver configuration mismatch. ② Sensor Active Check error. ③ Sensor Continuous Selftest error. ④ Sensor Message Counter error. ⑤ Sensor Checksum error. ⑥ Sensor Lateral Acc. signal error.	①, ② = Fault at start-up ③,④,⑤ = Fault Detetected ⑥ ± 160 deg/s	Comm_Enable Operating Voltage DTC Enabled	= Available = 6.0 - 16.0v = True	①, ② = startup ③ 0.04 s ④, ⑤ = 0.008 s ⑥ = 2 s out of range or 0.022 s out of range because of slope.	Safety Non-MIL Emissions Neutral Diagnostic
Lateral Accelerometers 1 & 2 Correlation	C018B	Agreement between primary and secondary lateral acceleration signals. Also monitors the offset bias value within the RAM.	① Lateral Acc. signals Correlation error. ② IMU Data Integrity Check. ③ IMU Data Transmission Check. ④ Offset Bias value in RAM (CRC).	① +/- 0.188489209*Acceleration +1.468057554 ② Fault Detected ③ Fault Detected ④ Fault Detected	Comm_Enable Operating Voltage DTC Enabled	= Available = 6.0 - 16.0v = True	① = 0.04 s (max) ②, ③ = Single Occurrence ④ = 0.001 s	Safety Non-MIL Emissions Neutral Diagnostic
Primary (Sensor 1) IMU Sensor - Yaw Rate Circuit	C0196	Validation of the yaw rate 1 signal is within acceptable ranges	Sensor Yaw Rate signal error.	± 28.5 m/s²	Comm_Enable Operating Voltage DTC Enabled	= Available = 6.0 - 16.0v = True	0.2 s	Safety Non-MIL Emissions Neutral Diagnostic
Secondary (Sensor 2) IMU Sensor - Yaw Rate Signal	C019A	Validation of the yaw rate 2 signal is within acceptable ranges	Sensor Yaw Rate signal error.	± 28.5 m/s²	Comm_Enable Operating Voltage DTC Enabled	= Available = 6.0 - 16.0v = True	0.2 s	Safety Non-MIL Emissions Neutral Diagnostic
Yaw Rate Signal Primary and Secondary Sensor Correlation	C019B	Yaw Rate Primary and Secondary plausiblty check via correlation between both signals	Yaw Rate signals correlation error	+/- 0.081956155*Yaw Rate + 7.113153457	Comm_Enable Operating Voltage DTC Enabled	= Available = 6.0 - 16.0v = True	0.03 s	Safety Non-MIL Emissions Neutral Diagnostic
Secondary (Sensor 2) IMU Sensor - Longitdinal Accl. Rate Signal	C027E	Validation of the Longitduinal accleration secondary sensor signal is within acceptable ranges	Sensor Longitduinal Acceleration signal error.	± 28.5 m/s²	Comm_Enable Operating Voltage DTC Enabled	= Available = 6.0 - 16.0v = True	0.2 s	Safety Non-MIL Emissions Neutral Diagnostic
Longitudinal Accelerometers Signal Primary and Secondary Sensor Correlation	C027F	Validation of the Longitduinal accleration secondary sensor signal is within acceptable ranges	Longitudinal acceleration signals correlation error	+/- 0.188489209*Acceleration +1.468057554	Comm_Enable Operating Voltage DTC Enabled	= Available = 6.0 - 16.0v = True	0.04 s	Safety Non-MIL Emissions Neutral Diagnostic
Primary (Sensor 1) IMU Sensor - Longitdinal Accl. Rate Signal	C0287	Validation of the Longitduinal accleration primary sensor signal is within acceptable ranges	Sensor Longitduinal Acceleration signal error.	± 28.5 m/s²	Comm_Enable Operating Voltage DTC Enabled	= Available = 6.0 - 16.0v = True	0.2 s	Safety Non-MIL Emissions Neutral Diagnostic
SDM Primary Key	B1001	Wrong Primary Key detected. Primary Key not programmed in the SDM.	Priamry Key not Programmed	Fault Detected	Primary Key Power mode Operating voltage DTC DID$40	= Configured and learned in configuration. = RUN, CRANK or PROLONGATION TIME = 6.0 - 16.0v = Enabled = Enabled	0.01 s Single Event	Safety Non-MIL Emissions Neutral Diagnostic
Programmed/Learned Mismatch within SDM Software	B1019	System Configuration Error - Incorrect software (software mismatch and mis-learn)	Comparison between DPID$11 (Programmed) and DPID$12 (Learned) fails.	DPID$11 ≠ DPID $12	Power mode. SDM Lock Status Operating voltage: DTC	= RUN = Unlocked. = 6.0 - 16.0v =Enabled	0.01 s Single Event	Safety Non-MIL Emissions Neutral Diagnostic
		General Failure	SDM internal sensor fault detected OR SDM internal ASIC fault detected OR SDM internal voltage out of range detected OR SDM internal microcontroller fault detected OR SDM internal memory error detected	For RAM, ROM and EEPROM errors, CRC is used.	Power Mode DTC	= RUN, CRANK or PROLONGATION TIME power mode. = Enabled	Within 0.1 s	Safety Non-MIL Emissions Neutral Diagnostic
		General Checksum Failure	Checksum mismatch	Fault Detected	Power Mode DTC	= RUN, CRANK or PROLONGATION TIME power mode. = Enabled	Within 0.1 s	Safety Non-MIL Emissions Neutral Diagnostic

Component/System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
ECU Hardware Performance	B101D	General Memory Failure	Failure of the general memory	Fault Detected	Power Mode DTC	= RUN, CRANK or PROLONGATION TIME power mode. = Enabled	Within 0.1 s	Safety Non-MIL Emissions Neutral Diagnostic
		Special Memory Failure	Failure of Special Memory	Fault Detected	Power Mode DTC	= RUN, CRANK or PROLONGATION TIME power mode. = Enabled	Within 0.1 s	Safety Non-MIL Emissions Neutral Diagnostic
		RAM Failure	Failure of RAM	Fault Detected	Power Mode DTC	= RUN, CRANK or PROLONGATION TIME power mode. = Enabled	Within 0.1 s	Safety Non-MIL Emissions Neutral Diagnostic
		ROM Failure	Failure of ROM	Fault Detected	Power Mode DTC	= RUN, CRANK or PROLONGATION TIME power mode. = Enabled	Within 0.1 s	Safety Non-MIL Emissions Neutral Diagnostic
		EEPROM Failure	Failure of EEPROM	Fault Detected	Power Mode DTC	= RUN, CRANK or PROLONGATION TIME power mode. = Enabled	Within 0.1 s	Safety Non-MIL Emissions Neutral Diagnostic
		Internal Electronic Failure	Sensor, Microprocessor or Powersupply Failure	Fault Detected	Power Mode DTC	= RUN, CRANK or PROLONGATION TIME power mode. = Enabled	Within 0.1 s	Safety Non-MIL Emissions Neutral Diagnostic
		Internal Self Test Failed	Failure during self-test	Fault Detected	Power Mode DTC	= RUN, CRANK or PROLONGATION TIME power mode. = Enabled	Within 0.1 s	Safety Non-MIL Emissions Neutral Diagnostic
		Internal Communications Failure	Internal Mircoprocessor to Other SDM Communications Failure	Fault Detected	Power Mode DTC	= RUN, CRANK or PROLONGATION TIME power mode. = Enabled	Within 0.1 s	Safety Non-MIL Emissions Neutral Diagnostic
		Internal Fault	General Fault within ECU	Fault Detected	VIN or Immobilizer function Power mode Operating voltage DTC	= Enabled in SDM configuration. = RUN, CRANK, PROLONGATION TIME or ACC (for Immobilizer) power mode. = 6.0 - 16.0v = Enabled	0.01 s Single Event	Safety Non-MIL Emissions Neutral Diagnostic
		Operational Software / Calibration Set Not Programmed	Operational Software / Calibration Set Not Programmed	Fault Detected	VIN or Immobilizer function Power mode Operating voltage DTC	= Enabled in SDM configuration. = RUN, CRANK, PROLONGATION TIME or ACC (for Immobilizer) power mode. = 6.0 - 16.0v = Enabled	0.01 s Single Event	Safety Non-MIL Emissions Neutral Diagnostic
		Calibration Data Set Not Programmed	Calibration Data Set Not Programmed	Fault Detected	VIN or Immobilizer function Power mode Operating voltage DTC	= Enabled in SDM configuration. = RUN, CRANK, PROLONGATION TIME or ACC (for Immobilizer) power mode. = 6.0 - 16.0v = Enabled	0.01 s Single Event	Safety Non-MIL Emissions Neutral Diagnostic
		EEPROM Error	EEPROM Error	Fault Detected	VIN or Immobilizer function Power mode Operating voltage DTC	= Enabled in SDM configuration. = RUN, CRANK, PROLONGATION TIME or ACC (for Immobilizer) power mode. = 6.0 - 16.0v = Enabled	0.01 s Single Event	Safety Non-MIL Emissions Neutral Diagnostic

Component/System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
ECU Software Performance	B101E	Security Access Not Activated	Security Access Not Activated	Device Locked	VIN or Immobilizer function Power mode Operating voltage DTC	= Enabled in SDM configuration. = RUN, CRANK, PROLONGATION TIME or ACC (for Immobilizer) power mode. = 6.0 - 16.0v = Enabled	0.01 s Single Event	Safety Non-MIL Emissions Neutral Diagnostic
		Variant Not Programmed	Variant Not Programmed	Fault Detected	VIN or Immobilizer function Power mode Operating voltage DTC	= Enabled in SDM configuration. = RUN, CRANK, PROLONGATION TIME or ACC (for Immobilizer) power mode. = 6.0 - 16.0v = Enabled	0.01 s Single Event	Safety Non-MIL Emissions Neutral Diagnostic
		Vehicle Configuration Not Programmed	Calibration for vehicle not provided	Fault Detected	VIN or Immobilizer function Power mode Operating voltage DTC	= Enabled in SDM configuration. = RUN, CRANK, PROLONGATION TIME or ACC (for Immobilizer) power mode. = 6.0 - 16.0v = Enabled	0.01 s Single Event	Safety Non-MIL Emissions Neutral Diagnostic
		VIN Not Programmed	VIN Programmed = False	VIN has not been written	VIN or Immobilizer function Power mode Operating voltage DTC	= Enabled in SDM configuration. = RUN, CRANK, PROLONGATION TIME or ACC (for Immobilizer) power mode. = 6.0 - 16.0v = Enabled	0.01 s Single Event	Safety Non-MIL Emissions Neutral Diagnostic
		Theft / Security Data Not Programmed	Security Code is not programmed	Security Code Not programmed and SDM is not in vehicle assembly mode.	VIN or Immobilizer function Power mode Operating voltage DTC	= Enabled in SDM configuration. = RUN, CRANK, PROLONGATION TIME or ACC (for Immobilizer) power mode. = 6.0 - 16.0v = Enabled	0.01 s Single Event	Safety Non-MIL Emissions Neutral Diagnostic
		Checksum Error	VTD security data checksum error	CRC data manipulation error. Only when data manipulation is detected in security code, immobilizer id and environment id.	VIN or Immobilizer function Power mode Operating voltage DTC	= Enabled in SDM configuration. = RUN, CRANK, PROLONGATION TIME or ACC (for Immobilizer) power mode. = 6.0 - 16.0v = Enabled	0.01 s Single Event	Safety Non-MIL Emissions Neutral Diagnostic
		Calibration Not Learned	Calibration not learned	Fault Detected	VIN or Immobilizer function Power mode Operating voltage DTC	= Enabled in SDM configuration. = RUN, CRANK, PROLONGATION TIME or ACC (for Immobilizer) power mode. = 6.0 - 16.0v = Enabled	0.01 s Single Event	Safety Non-MIL Emissions Neutral Diagnostic
		DTC Memory Full	Memory full for DTCs	SDM has 24 records available in memory for Continental fault codes.	VIN or Immobilizer function Power mode Operating voltage DTC	= Enabled in SDM configuration. = RUN, CRANK, PROLONGATION TIME or ACC (for Immobilizer) power mode. = 6.0 - 16.0v = Enabled	On Demand	Safety Non-MIL Emissions Neutral Diagnostic
Control Module Communication Chassis Expansion CAN Bus	U0077	Monitoring to check if the Chassis Expansion CAN Bus is ON	CE HS Leakage to Battery. CE HS-CAN Leakage to Ground. CE HS-CAN Shorted.	32 consecutive error frames detected on the bus	Power Mode DTC Operating Voltage	= RUN, CRANK or PROLONGATION TIME power mode. = Enabled = 6.0 to 16.0v	2.5 s	Safety Non-MIL Emissions Neutral Diagnostic

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.

ECU Hardware Performance - Internal Malfunction	B101D	This diagnoistic monitors the internal power supply from the IMX6 processor to ensure they ar within acceptable range of operation. The voltage level is read by ADC and available through a HWIO interface	IMX6 processor is fed multiple voltages by an onboard power supply. DTC is set if these power supplies are out of range for a predefined sliding window.
			
			Fault set if:
			
			0.75 V Suply
			
			1.3 V Supply
			
			3.3 V Supply
			
			1.425 V Supply
				
				Min. Threshold = 0.70879V, Max. Threshold = 0.79079V
				
				Min. Threshold = 1.25V, Max. Threshold = 1.35V
				
				Min. Threshold = 3.07V, Max. Threshold = 3.43V
				
				Min. Threshold = 1.32V, Max. Threshold = 1.48V
					Diganoistic is Enabled
					
					If (Configuration for Low Voltage Enablement is FALSE), diagnoistic will not consider low voltage condition and run regardless of battery monitor voltage.
					
					If (Configuration for Low Voltage Enablement is TRUE), then the diagnoistic will NOT run when the battery monitor votlage is < 5.5 voltage
					
					Diagnoistic System is not in State of Reset. This includes:
					-Code Clear in Process
					-End of Trip Processing
					-Diagnoistic Re-enable in Process
						= TRUE	0.1 seconds out of a 0.2 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Front Camera System Status Message Counter Incorrect	B2B19	Monitor Indicates invalid or out of date data was received from the Front Camera System on the FlexRay Bus	Monitors the Front Camera Stauts Message for Alive Rolling Counter (ARC) OR Cyclic Redundant Checksum (CRC) Failure. A failure of either will increase the fail counter. Monitored for "Lane_Det_Header" message	6 Fail Counters within 10 Samples	Diagnoistic is Enabled EOCM2 Supply Voltage Burst ARC Check Diagnostic Enabled Signal Relivent protocol data unit (PDU) mask is Complete Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process	= TRUE > 9.0 V for > 3 seconds = TRUE = TRUE	0.06 seconds out of a 0.1 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Front Camera Lane Marker Data Message Counter Incorrect	B2B1A	Monitor indicates invalid or out of date lane marking data was received from the Front Camera System on the FlexRay Bus	Monitors the Front Camera Lane Marking Data Message for Alive Rolling Counter (ARC) OR Cyclic Redundant Checksum (CRC) Failure. A failure of either will increase the fail counter. Monitored for "System_Header" message	6 Fail Counters within 10 Samples	Diagnoistic is Enabled EOCM2 Supply Voltage Burst ARC Check Diagnostic Enabled Signal Relivent protocol data unit (PDU) mask is Complete Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process	= TRUE > 9.0 V for > 3 seconds = TRUE = TRUE	0.06 seconds out of a 0.1 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Front Camera Object Data Message Counter Incorrect	B2B1B	Monitor indicates invalid or out of date Object data was received from the Front Camera System on the FlexRay Bus	Monitors the Front Camera Object Message for Alive Rolling Counter (ARC) OR Cyclic Redundant Checksum (CRC) Failure. A failure of either will increase the fail counter. Monitored for "Obj_Det_Header" message	6 Fail Counters within 10 Samples	Diagnoistic is Enabled EOCM2 Supply Voltage Burst ARC Check Diagnostic Enabled Signal Relivent protocol data unit (PDU) mask is Complete Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process	= TRUE > 9.0 V for > 3 seconds = TRUE = TRUE	0.06 seconds out of a 0.1 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Long Range Radar Object Data Message Counter Incorrect	B2B1C	Monitor indicates invalid or out of date Object data was received from the Long Range Radar on the FlexRay Bus	Monitors the Long Range Radar Object Message for Alive Rolling Counter (ARC) OR Cyclic Redundant Checksum (CRC) Failure. A failure of either will increase the fail counter. Monitored for "F_LRR_Object_Header" message	6 Fail Counters within 10 Samples	Diagnoistic is Enabled EOCM2 Supply Voltage Burst ARC Check Diagnostic Enabled Signal Relivent protocol data unit (PDU) mask is Complete Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process	= TRUE > 9.0 V for > 3 seconds = TRUE = TRUE	0.06 seconds out of a 0.1 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Left Front Short Range Radar Object Data Message Counter Incorrect	B2B1D	Monitor indicates invalid or out of date Object data was received from the Long Left Front Short Range Radar on the FlexRay Bus	Monitors the Left Front Short Range Radar Object Message for Alive Rolling Counter (ARC) OR Cyclic Redundant Checksum (CRC) Failure. A failure of either will increase the fail counter. Monitored for "LF_LRR_Object_Header" message	6 Fail Counters within 10 Samples	Diagnoistic is Enabled EOCM2 Supply Voltage Burst ARC Check Diagnostic Enabled Signal Relivent protocol data unit (PDU) mask is Complete Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process	= TRUE > 9.0 V for > 3 seconds = TRUE = TRUE	0.06 seconds out of a 0.1 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Right Front Short Radar Object Data Message Counter Incorrect	B2B1E	Monitor indicates invalid or out of date Object data was received from the Right Front Short Range Radar on the FlexRay Bus	Monitors the Left Front Short Range Radar Object Message for Alive Rolling Counter (ARC) OR Cyclic Redundant Checksum (CRC) Failure. A failure of either will increase the fail counter. Monitored for "RF_LRR_Object_Header" message	6 Fail Counters within 10 Samples	Diagnoistic is Enabled EOCM2 Supply Voltage Burst ARC Check Diagnostic Enabled Signal Relivent protocol data unit (PDU) mask is Complete Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process	= TRUE > 9.0 V for > 3 seconds = TRUE = TRUE	0.06 seconds out of a 0.1 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Left Rear Short Radar Object Data Message Counter Incorrect	B2B1F	Monitor indicates invalid or out of date Object data was received from the Left Rear Short Range Radar on the FlexRay Bus	Monitors the Left Front Short Range Radar Object Message for Alive Rolling Counter (ARC) OR Cyclic Redundant Checksum (CRC) Failure. A failure of either will increase the fail counter. Monitored for "LR_LRR_Object_Header " message	6 Fail Counters within 10 Samples	Diagnoistic is Enabled EOCM2 Supply Voltage Burst ARC Check Diagnostic Enabled Signal Relivent protocol data unit (PDU) mask is Complete Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process	= TRUE > 9.0 V for > 3 seconds = TRUE = TRUE	0.06 seconds out of a 0.1 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Right Rear Short Radar Object Data Message Counter Incorrect	B2B20	Monitor indicates invalid or out of date Object data was received from the Right Rear Short Range Radar on the FlexRay Bus	Monitors the Left Front Short Range Radar Object Message for Alive Rolling Counter (ARC) OR Cyclic Redundant Checksum (CRC) Failure. A failure of either will increase the fail counter. Monitored for "RR_LRR_Object_Header "message	6 Fail Counters within 10 Samples	Diagnoistic is Enabled EOCM2 Supply Voltage Burst ARC Check Diagnostic Enabled Signal Relivent protocol data unit (PDU) mask is Complete Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process	= TRUE > 9.0 V for > 3 seconds = TRUE = TRUE	0.06 seconds out of a 0.1 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Center Rear Short Radar Object Data Message Counter Incorrect	B2B21	Monitor indicates invalid or out of date Object data was received from the Center Rear Short Range Radar on the FlexRay Bus	Monitors the Left Front Short Range Radar Object Message for Alive Rolling Counter (ARC) OR Cyclic Redundant Checksum (CRC) Failure. A failure of either will increase the fail counter. Monitored for "R_LRR_Object_Header" message	6 Fail Counters within 10 Samples	Diagnoistic is Enabled EOCM2 Supply Voltage Burst ARC Check Diagnostic Enabled Signal Relivent protocol data unit (PDU) mask is Complete Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process	= TRUE > 9.0 V for > 3 seconds = TRUE = TRUE	0.06 seconds out of a 0.1 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Control Module Read Only Memory Performance	P0601	Monitors the performance of the Read Only Memory. This includes the non-volatile boot, code, or calibration memory. A Cyclic redundancy check, and Sinlg Bit ROM check is used. This diagnostic detects if the Compressor HV Voltage sensor has an out of range high circuit fault. If the enable conditions are met and compressor has detected an instantaneous out of range high fault on the sensor, the fail counter will increment. If the calibrated fail count threshold is met before the calibrated sample count, the diagnostic will report a FAIL and if not it will report a PASS. The diagnostic will continue to report as long as the enablement conditions are met.	When the cyclical redundancy check is invalid, the fault flag is set to TRUE and the fail counter increments	Fail Counter > 5		The CRC diagnostic will run anytime there is sufficient processor throughput to allow execution of background task		Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"
			For Single Bit ROM Errors, the fault fault is to TRUE and the fail counter is increased	Fail Counter >5	Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process	Diagnoistic System is not in State of Reset.		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Control Module Not Programmed	P0602	Indicates the EOCM needs to be programmed	This DTC is set via calibration, when KeIDND_b_NoStartCal	 =TRUE	Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process	Diagnoistic System is not in State of Reset.	1 second	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Control Module Long Term Memory Reset	P0603	Data was lost from Non-Volatile Memory. Could be due to failure of flash, NVM memory failure, first time power up if the shut down was interrupted	Non-volatile memory (static or dynamic) checksum failure at Powerup	= TRUE	Controller Initialize	= Complete	Once during start-up	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Control Module Random Access Memory Performance	P0604	If there is a failure in these types in RAM: Secondary, System, Cache, eTUP	Indicates that control module is unable to correctly write and read data to and from: - RAM - Cached RAM - TPU RAM	Detects data read does not match data written >= = 3 counts = 3 counts = 3 counts	Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process	Diagnoistic System is not in State of Reset.	= 2,000.00 mseconds	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"
			Indicates that the primary processor detects a mismatch between the data and dual data is found during RAM updates. Detects a mismatch in data and dual data updates >	= 0.175 seconds				
			Indicates that the primary processor detects an illegal write attempt to protected RAM. Number of illegal writes are >	= 65,534 counts				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Control Module Processor Performance	P0606	Indicates that the EOCM has detected an internal processor integrity fault. These include diagnostics done on the SPI Communication as well as a host of diagnostics for both the primary and secondary processsors.	If any of the following fault occurs: - ROM completion fault (reported to PISR from MPMR) - ALU fault - Configuration Registers fault - Stack fault - Analog to Digital Converter fault - Secondary processor detected Main processor CPU State of Health fault - DMA transfer fault - Missing T0 task’s motor control related duty cycle event fault - Lockstep fault - Secondary processor not running Seed/Key test - Secondary processor fails to take remedial action - Secondary processor received incorrect keys - Main processor detected Seed/Key timeout - Main processor detected seeds received in wrong order		Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process And the Run/Crank Voltages are not low.	Diagnoistic System is not in State of Reset. > 10.0 V	The diagnoistic operates every 12.5 msec	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Control Module Long Term Memory Performance	P062F	This diagnostic runs test for non-volatile memory performance diagnostic. Checks if Assembly Cals are defaulted or non-volatile memory Handler is unable to commit to flash in the future due to memory errors. Typically this means that the controller has run out of flash blocks for storing the data (the total erase/write cycles for each block has been exceeded.	When BINVDM region needs to be copied but cannot be VeMEMR_b_BINVDM_CannotCopy	= TRUE		To be run during NVM Handler control task	Runs every 100 ms	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"
			When there is an assembly calibration failure reported by HWIO at initialization. Ve MEMD_b_AsyCalFail	= TRUE		To be run during NVM Handler control task	Runs every 100 ms	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Monitor Control Module Serial Peripheral Interface Bus 2	P16E9	This diagnoistic monitors for Interprocessor communications (Between K1, K2, IMX Processor)	When it detects SPI communication fault as indicated between any two micros (K1,K2,IMX) in EOCM2	A fault is detected for 8 out of 16 samples	Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process AND No error parsing Serial Perpheral Interface Data		0.04 seconds out of a 0.08 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Monitor Control Module Serial Peripheral Interface Bus 1	P16F0	This diagnoistic monitors for Interprocessor communications (Between K1, K2, IMX Processor)	When it detects SPI communication fault as indicated between any two micros (K1,K2,IMX) in EOCM2	A fault is detected for 8 out of 16 samples	Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process AND No error parsing Serial Perpheral Interface Data		0.04 seconds out of a 0.08 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Engine Control Module "A"	U0100	This DTC is set by the EOCM when signal supervision by the EOCM on the Engine Control Module has failed.	Message is not received from controller for: Message $0C9 Message $1CF Message $3E9 Message $3F9	 > 0.5 seconds > 5.0 seconds > 5.0 seconds > 12.5 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter K_HSCOM_DIAG_ENABLE	= RUN > 9V = 0 = 1 (True)	See threshold value.	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Transmission Control Module	U0101	This DTC is set by the EOCM when signal supervision by the EOCM on the Tramission Control Module has failed.	Message is not received from controller for: Message $1F5	> 1.0 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter K_HSCOM_DIAG_ENABLE	= RUN > 9V = 0 = 1 (True)	See threshold value.	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Body Control Module	U0140	This DTC is set by the EOCM when signal supervision by the EOCM on the Body Control Module has failed.	Message is not received from controller for: Message $135 Message $120 Message $12A Message $139 Message $140 Message $1F1 Message $4E1 Message $514	 > 5.0 seconds > 200.0 seconds > 5.0 seconds > 5.0 seconds > 40.0 seconds > 5.0 seconds > 40.0 seconds > 40.0 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter K_HSCOM_DIAG_ENABLE	= RUN > 9V = 0 = 1 (True)	See threshold value.	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Telematic Control Module	U0198	This DTC is set by the EOCM when signal supervision by the EOCM on the Telematic Control Module has failed.	Message is not received from controller for: Message $260 Message $261 Message $262 Message $263 Message $264 Message $265	 > 10.0 seconds > 10.0 seconds > 10.0 seconds > 10.0 seconds > 10.0 seconds > 10.0 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter K_HSCOM_DIAG_ENABLE	= RUN > 9V = 0 = 1 (True)	See threshold value.	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Frontview Camera Module	U026A	This DTC is set by the EOCM when signal supervision by the EOCM on Frontview Camera Module failed.	Message is not received from controller for: Message $350 Message $351 Message $352 Message $353 Message $354 Message $355 Message $356	 > 3.0 seconds > 3.0 seconds > 3.0 seconds > 3.0 seconds > 3.0 seconds > 3.0 seconds > 3.0 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter K_FOCOM_DIAG_ENABLE	= RUN > 9V = 0 = 1 (True)	See threshold value.	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Invalid Data Received From Telematics Communication Interface Control Module	U0499	Indicates invalid or out dated data was received from the Telematics Communication Interface Control module	ARC or Checksum error on HE CAN Bus any of the following messages: $260, $261, $262, $263, $264, or $265.	6 out of 10 failures of ARC or Checksum on any frame	HE Can Communication Bus Voltage The Diagnostic system is not in a short term/state of reset (Code clear in progress, diagnostic reenable in progress, or end of trip processing in progress)	= Active = 9V < Voltage < 16V	0.6 seconds out of a 1 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Invalid Data Received From Frontview Camera Module	U056B	Indicates invalid or out dated data was received from the Frontview Camera Module	ARC or Checksum error on Front Object CAN Bus any of the following messages: $350, $351, $352, $353, $354, $355 or $356.	6 out of 10 failures of ARC or Checksum on any frame	FO Can Communication Bus Voltage The Diagnostic system is not in a short term/state of reset (Code clear in progress, diagnostic reenable in progress, or end of trip processing in progress)	= Active = 9V < Voltage < 16V	0.36 seconds out of a 0.6 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Digital Map Module	U1067	This DTC is set by the EOCM when signal supervision by the EOCM on Digital Map Module failed.	Message is not received from controller for: Message $604 Message $605 Message $606 Message $607 Message $608 Message $609 Message $60A Message $60B Message $60C	 > 1.0 seconds > 1.0 seconds > 1.0 seconds > 1.0 seconds > 1.0 seconds > 1.0 seconds > 1.0 seconds > 1.0 seconds > 1.0 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter K_FOCOM_DIAG_ENABLE	= RUN > 9V = 0 = 1 (True)	See threshold value.	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Video Processing Control Module on High Speed CAN Bus	U18C3	This DTC is set by the EOCM when signal supervision by the EOCM on Video Processing Module has failied.	Message is not received from controller for: Message $345 Message $346 Message $347	 > 5.0 seconds > 5.0 seconds > 5.0 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter K_HSCOM_DIAG_ENABLE	= RUN > 9V = 0 = 1 (True)	See threshold value.	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Invalid Data Received From Digital Map Control Module	U2511	Indicates invalid or out dated data was received from the Digital Map Control Module	Alive Rolling Counter or Checksum error on Front Object CAN Bus on messages: $604, $605, $606, $607, $608, $609, $60A, $60B, or $60C	6 out of 10 failures of ARC or Checksum on any frame	FO Can Communication Bus Voltage The Diagnostic system is not in a short term/state of reset (Code clear in progress, diagnostic reenable in progress, or end of trip processing in progress)	= Active = 9V < Voltage < 16V	0.12 seconds out of a 0.2 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Invalid Data Received From Video Processing Control Module	U2512	Indicates invalid or out dated data was received from the Video Processing Control Module	Alive Rolling Counter or Checksum error on High Speed Object CAN Bus on messages: $345, $346, or $347.	6 out of 10 failures of ARC or Checksum on any frame	FO Can Communication Bus Voltage The Diagnostic system is not in a short term/state of reset (Code clear in progress, diagnostic reenable in progress, or end of trip processing in progress)	= Active = 9V < Voltage < 16V	0.6 seconds out of a 1 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Control Moduel - Data Memory Failure	U3000	RAM Image Corruption Test: this diagnostic performs a CRC check of the application software and calibration images located in ECU RAM. The images are copied from ECU ROM into RAM during initialization.	When the running RAM image Cyclic Redundancy Check checksum does not match the Cyclic Redundancy Check checksum stored in RAM	RAM Checksum ≠ Calculated Checksum	Diagnostic will run anytime there is sufficient processor throughput to allow execution of background tasks. Diagnoistic Enabled	 = 1.0 (1 = TRUE)	Immediately Upon Fault Detection	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"
			When the running RAM image Cyclic Redundancy Check checksum does not match the Cyclic Redundancy Check checksum stored in ROM	ROM Checksum ≠ Calculated Checksum	Diagnostic will run anytime there is sufficient processor throughput to allow execution of background tasks. Diagnoistic Enabled	 = 1.0 (1 = TRUE)	Immediately Upon Fault Detection	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.

ECU Hardware Performance - Interal Malfunction	B101D	This diagnoistic monitors the internal power supply from the IMX6 processor to ensure they ar within acceptable range of operation. The voltage level is read by ADC and available through a HWIO interface	IMX6 processor is fed multiple voltages by an onboard power supply. DTC is set if these power supplies are out of range for a predefined sliding window.
			
			Fault set if:
			
			0.75 V Suply
			
			1.3 V Supply
			
			3.3 V Supply
			
			1.425 V Supply
				Min. Threshold = 0.70879V, Max. Threshold = 0.79079V
				
				Min. Threshold = 1.25V, Max. Threshold = 1.35V
				
				Min. Threshold = 3.07V, Max. Threshold = 3.43V
				
				Min. Threshold = 1.32V, Max. Threshold = 1.48V
					Diganoistic is Enabled
					
					If (Configuration for Low Voltage Enablement is FALSE), diagnoistic will not consider low voltage condition and run regardless of battery monitor voltage.
					
					If (Configuration for Low Voltage Enablement is TRUE), then the diagnoistic will NOT run when the battery monitor votlage is < 5.5 voltage
					
					Diagnoistic System is not in State of Reset. This includes:
					-Code Clear in Process
					-End of Trip Processing
					-Diagnoistic Re-enable in Process
						= TRUE	0.1 seconds out of a 0.2 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Front Camera System Status Message Counter Incorrect	B2B19	Monitor Indicates invalid or out of date data was received from the Front Camera System on the FlexRay Bus	Monitors the Front Camera Stauts Message for Alive Rolling Counter (ARC) OR Cyclic Redundant Checksum (CRC) Failure. A failure of either will increase the fail counter. Monitored for "Lane_Det_Header" message	6 Fail Counters within 10 Samples	Diagnoistic is Enabled EOCM2 Supply Voltage Burst ARC Check Diagnostic Enabled Signal Relivent protocol data unit (PDU) mask is Complete Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process	= TRUE > 9.0 V for > 3 seconds = TRUE = TRUE	0.06 seconds out of a 0.1 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Front Camera Lane Marker Data Message Counter Incorrect	B2B1A	Monitor indicates invalid or out of date lane marking data was received from the Front Camera System on the FlexRay Bus	Monitors the Front Camera Lane Marking Data Message for Alive Rolling Counter (ARC) OR Cyclic Redundant Checksum (CRC) Failure. A failure of either will increase the fail counter. Monitored for "System_Header" message	6 Fail Counters within 10 Samples	Diagnoistic is Enabled EOCM2 Supply Voltage Burst ARC Check Diagnostic Enabled Signal Relivent protocol data unit (PDU) mask is Complete Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process	= TRUE > 9.0 V for > 3 seconds = TRUE = TRUE	0.06 seconds out of a 0.1 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Front Camera Object Data Message Counter Incorrect	B2B1B	Monitor indicates invalid or out of date Object data was received from the Front Camera System on the FlexRay Bus	Monitors the Front Camera Object Message for Alive Rolling Counter (ARC) OR Cyclic Redundant Checksum (CRC) Failure. A failure of either will increase the fail counter. Monitored for "Obj_Det_Header" message	6 Fail Counters within 10 Samples	Diagnoistic is Enabled EOCM2 Supply Voltage Burst ARC Check Diagnostic Enabled Signal Relivent protocol data unit (PDU) mask is Complete Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process	= TRUE > 9.0 V for > 3 seconds = TRUE = TRUE	0.06 seconds out of a 0.1 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Long Range Radar Object Data Message Counter Incorrect	B2B1C	Monitor indicates invalid or out of date Object data was received from the Long Range Radar on the FlexRay Bus	Monitors the Long Range Radar Object Message for Alive Rolling Counter (ARC) OR Cyclic Redundant Checksum (CRC) Failure. A failure of either will increase the fail counter. Monitored for "F_LRR_Object_Header" message	6 Fail Counters within 10 Samples	Diagnoistic is Enabled EOCM2 Supply Voltage Burst ARC Check Diagnostic Enabled Signal Relivent protocol data unit (PDU) mask is Complete Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process	= TRUE > 9.0 V for > 3 seconds = TRUE = TRUE	0.06 seconds out of a 0.1 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Left Front Short Range Radar Object Data Message Counter Incorrect	B2B1D	Monitor indicates invalid or out of date Object data was received from the Long Left Front Short Range Radar on the FlexRay Bus	Monitors the Left Front Short Range Radar Object Message for Alive Rolling Counter (ARC) OR Cyclic Redundant Checksum (CRC) Failure. A failure of either will increase the fail counter. Monitored for "LF_SRR_Object_Header" message	6 Fail Counters within 10 Samples	Diagnoistic is Enabled EOCM2 Supply Voltage Burst ARC Check Diagnostic Enabled Signal Relivent protocol data unit (PDU) mask is Complete Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process	= TRUE > 9.0 V for > 3 seconds = TRUE = TRUE	0.06 seconds out of a 0.1 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Right Front Short Radar Object Data Message Counter Incorrect	B2B1E	Monitor indicates invalid or out of date Object data was received from the Right Front Short Range Radar on the FlexRay Bus	Monitors the Left Front Short Range Radar Object Message for Alive Rolling Counter (ARC) OR Cyclic Redundant Checksum (CRC) Failure. A failure of either will increase the fail counter. Monitored for "RF_SRR_Object_Header" message	6 Fail Counters within 10 Samples	Diagnoistic is Enabled EOCM2 Supply Voltage Burst ARC Check Diagnostic Enabled Signal Relivent protocol data unit (PDU) mask is Complete Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process	= TRUE > 9.0 V for > 3 seconds = TRUE = TRUE	0.06 seconds out of a 0.1 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Left Rear Short Radar Object Data Message Counter Incorrect	B2B1F	Monitor indicates invalid or out of date Object data was received from the Left Rear Short Range Radar on the FlexRay Bus	Monitors the Left Front Short Range Radar Object Message for Alive Rolling Counter (ARC) OR Cyclic Redundant Checksum (CRC) Failure. A failure of either will increase the fail counter. Monitored for “LR_SRR_Object_Header” message	6 Fail Counters within 10 Samples	Diagnoistic is Enabled EOCM2 Supply Voltage Burst ARC Check Diagnostic Enabled Signal Relivent protocol data unit (PDU) mask is Complete Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process	= TRUE > 9.0 V for > 3 seconds = TRUE = TRUE	0.06 seconds out of a 0.1 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Right Rear Short Radar Object Data Message Counter Incorrect	B2B20	Monitor indicates invalid or out of date Object data was received from the Right Rear Short Range Radar on the FlexRay Bus	Monitors the Left Front Short Range Radar Object Message for Alive Rolling Counter (ARC) OR Cyclic Redundant Checksum (CRC) Failure. A failure of either will increase the fail counter. Monitored for “RR_SRR_Object_Header” message	6 Fail Counters within 10 Samples	Diagnoistic is Enabled EOCM2 Supply Voltage Burst ARC Check Diagnostic Enabled Signal Relivent protocol data unit (PDU) mask is Complete Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process	= TRUE > 9.0 V for > 3 seconds = TRUE = TRUE	0.06 seconds out of a 0.1 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Center Rear Short Radar Object Data Message Counter Incorrect	B2B21	Monitor indicates invalid or out of date Object data was received from the Center Rear Short Range Radar on the FlexRay Bus	Monitors the Left Front Short Range Radar Object Message for Alive Rolling Counter (ARC) OR Cyclic Redundant Checksum (CRC) Failure. A failure of either will increase the fail counter. Monitored for “R_SRR_Object_Header” message	6 Fail Counters within 10 Samples	Diagnoistic is Enabled EOCM2 Supply Voltage Burst ARC Check Diagnostic Enabled Signal Relivent protocol data unit (PDU) mask is Complete Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process	= TRUE > 9.0 V for > 3 seconds = TRUE = TRUE	0.06 seconds out of a 0.1 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Control Module Read Only Memory Performance	P0601	Monitors the performance of the Read Only Memory. This includes the non-volatile boot, code, or calibration memory. A Cyclic redundancy check, and Sinlg Bit ROM check is used. This diagnostic detects if the Compressor HV Voltage sensor has an out of range high circuit fault. If the enable conditions are met and compressor has detected an instantaneous out of range high fault on the sensor, the fail counter will increment. If the calibrated fail count threshold is met before the calibrated sample count, the diagnostic will report a FAIL and if not it will report a PASS. The diagnostic will continue to report as long as the enablement conditions are met.	When the cyclical redundancy check is invalid, the fault flag is set to TRUE and the fail counter increments	Fail Counter > 5		The CRC diagnostic will run anytime there is sufficient processor throughput to allow execution of background task		Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"
			For Single Bit ROM Errors, the fault fault is to TRUE and the fail counter is increased	Fail Counter > 5	Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process	Diagnoistic System is not in State of Reset.		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Control Module Not Programmed	P0602	Indicates the EOCM needs to be programmed	This DTC is set via calibration, when KeIDND_b_NoStartCal	 =TRUE	Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process	Diagnoistic System is not in State of Reset.	1 second	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Control Module Long Term Memory Reset	P0603	Data was lost from Non-Volatile Memory. Could be due to failure of flash, NVM memory failure, first time power up if the shut down was interrupted	Non-volatile memory (static or dynamic) checksum failure at Powerup	= TRUE	Controller Initialize	= Complete	Once during start-up	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Control Module Random Access Memory Performance	P0604	If there is a failure in these types in RAM: Secondary, System, Cache, eTUP	Indicates that control module is unable to correctly write and read data to and from: - RAM - Cached RAM - TPU RAM	Detects data read does not match data written >= = 3 counts = 3 counts = 3 counts	Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process	Diagnoistic System is not in State of Reset.	= 2,000.00 mseconds	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"
			Indicates that the primary processor detects a mismatch between the data and dual data is found during RAM updates. Detects a mismatch in data and dual data updates >	= 0.175 seconds				
			Indicates that the primary processor detects an illegal write attempt to protected RAM. Number of illegal writes are >	= 65,534 counts				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Control Module Processor Performance	P0606	Indicates that the EOCM has detected an internal processor integrity fault. These include diagnostics done on the SPI Communication as well as a host of diagnostics for both the primary and secondary processsors.	If any of the following fault occurs: - ROM completion fault (reported to PISR from MPMR) - ALU fault - Configuration Registers fault - Stack fault - Analog to Digital Converter fault - Secondary processor detected Main processor CPU State of Health fault - DMA transfer fault - Missing T0 task’s motor control related duty cycle event fault - Lockstep fault - Secondary processor not running Seed/Key test - Secondary processor fails to take remedial action - Secondary processor received incorrect keys - Main processor detected Seed/Key timeout - Main processor detected seeds received in wrong order		Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process And the Run/Crank Voltages	Diagnoistic System is not in State of Reset. > 10.0 V	The diagnoistic operates every 12.5 msec	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Control Module Long Term Memory Performance	P062F	This diagnostic runs test for non-volatile memory performance diagnostic. Checks if Assembly Cals are defaulted or non-volatile memory Handler is unable to commit to flash in the future due to memory errors. Typically this means that the controller has run out of flash blocks for storing the data (the total erase/write cycles for each block has been exceeded.	When BINVDM region needs to be copied but cannot be VeMEMR_b_BINVDM_CannotCopy	 = TRUE		To be run during NVM Handler control task	Runs every 100 ms	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"
			When there is an assembly calibration failure reported by HWIO at initialization. Ve MEMD_b_AsyCalFail	 = TRUE		To be run during NVM Handler control task	Runs every 100 ms	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Monitor Control Module Serial Peripheral Interface Bus 2	P16E9	This diagnoistic monitors for Interprocessor communications (Between K1, K2, IMX Processor)	When it detects SPI communication fault as indicated between any two micros (K1,K2,IMX) in EOCM2	A fault is detected for 8 out of 16 samples	Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process AND No error parsing Serial Perpheral Interface Data		0.8 seconds out of a 1.6 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Monitor Control Module Serial Peripheral Interface Bus 1	P16F0	This diagnoistic monitors for Interprocessor communications (Between K1, K2, IMX Processor)	When it detects SPI communication fault as indicated between any two micros (K1,K2,IMX) in EOCM2	A fault is detected for 8 out of 16 samples	Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process AND No error parsing Serial Perpheral Interface Data		0.8 seconds out of a 1.6 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Engine Control Module "A"	U0100	This DTC is set by the EOCM when signal supervision by the EOCM on the Engine Control Module has failed.	Message is not received from controller for: Message $0C9 Message $1CF Message $3E9 Message $3F9	 > 0.5 seconds > 5.0 seconds > 5.0 seconds > 12.5 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter K_HSCOM_DIAG_ENABLE	= RUN > 9V = 0 = 1 (True)	See threshold value.	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Transmission Control Module	U0101	This DTC is set by the EOCM when signal supervision by the EOCM on the Tramission Control Module has failed.	Message is not received from controller for: Message $1F5	> 1.0 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter K_HSCOM_DIAG_ENABLE	= RUN > 9V = 0 = 1 (True)	See threshold value.	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Body Control Module	U0140	This DTC is set by the EOCM when signal supervision by the EOCM on the Body Control Module has failed.	Message is not received from controller for: Message $135 Message $120 Message $12A Message $139 Message $140 Message $1F1 Message $4E1 Message $514	 > 5.0 seconds > 200.0 seconds > 5.0 seconds > 5.0 seconds > 40.0 seconds > 5.0 seconds > 40.0 seconds > 40.0 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter K_HSCOM_DIAG_ENABLE	= RUN > 9V = 0 = 1 (True)	See threshold value.	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Telematic Control Module	U0198	This DTC is set by the EOCM when signal supervision by the EOCM on the Telematic Control Module has failed.	Message is not received from controller for: Message $260 Message $261 Message $262 Message $263 Message $264 Message $265	 > 10.0 seconds > 10.0 seconds > 10.0 seconds > 10.0 seconds > 10.0 seconds > 10.0 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter K_HSCOM_DIAG_ENABLE	= RUN > 9V = 0 = 1 (True)	See threshold value.	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Frontview Camera Module	U026A	This DTC is set by the EOCM when signal supervision by the EOCM on Frontview Camera Module failed.	Message is not received from controller for: Message $350 Message $351 Message $352 Message $353 Message $354 Message $355 Message $356	 > 3.0 seconds > 3.0 seconds > 3.0 seconds > 3.0 seconds > 3.0 seconds > 3.0 seconds > 3.0 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter K_FOCOM_DIAG_ENABLE	= RUN > 9V = 0 = 1 (True)	See threshold value.	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Invalid Data Received From Telematics Communication Interface Control Module (ONSTAR)	U0499	Indicates invalid or out dated data was received from the Telematics Communication Interface Control module	ARC or Checksum error on HE CAN Bus any of the following messages: $260, $261, $262, $263, $264, or $265.	6 out of 10 failures of ARC or Checksum on any frame	HE Can Communication Bus Voltage The Diagnostic system is not in a short term/state of reset (Code clear in progress, diagnostic reenable in progress, or end of trip processing in progress)	= Active = 9V < Voltage < 16V	0.6 seconds out of a 1 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Invalid Data Received From Frontview Camera Module	U056B	Indicates invalid or out dated data was received from the Frontview Camera Module	ARC or Checksum error on Front Object CAN Bus any of the following messages: $350, $351, $352, $353, $354, $355 or $356. $260, $261, $262, $263, $264, or $265.	6 out of 10 failures of ARC or Checksum on any frame	FO Can Communication Bus Voltage The Diagnostic system is not in a short term/state of reset (Code clear in progress, diagnostic reenable in progress, or end of trip processing in progress)	= Active = 9V < Voltage < 16V	0.36 seconds out of a 0.6 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Digital Map Module	U1067	This DTC is set by the EOCM when signal supervision by the EOCM on Digital Map Module failed.	Message is not received from controller for: Message $604 Message $605 Message $606 Message $607 Message $608 Message $609 Message $60A Message $60B Message $60C	 > 1.0 seconds > 1.0 seconds > 1.0 seconds > 1.0 seconds > 1.0 seconds > 1.0 seconds > 1.0 seconds > 1.0 seconds > 1.0 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter K_FOCOM_DIAG_ENABLE	= RUN > 9V = 0 = 1 (True)	See threshold value.	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Video Processing Control Module	U18C3	This DTC is set by the EOCM when signal supervision by the EOCM on Video Processing Module has failied.	Message is not received from controller for: Message $345 Message $346 Message $347	 > 5.0 seconds > 5.0 seconds > 5.0 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter K_HSCOM_DIAG_ENABLE	= RUN > 9V = 0 = 1 (True)	See threshold value.	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Invalid Data Received From Digital Map Control Module	U2511	Indicates invalid or out dated data was received from the Digital Map Control Module	Alive Rolling Counter or Checksum error on Front Object CAN Bus on messages: $604, $605, $606, $607, $608, $609, $60A, $60B, or $60C	6 out of 10 failures of ARC or Checksum on any frame	FO Can Communication Bus Voltage The Diagnostic system is not in a short term/state of reset (Code clear in progress, diagnostic reenable in progress, or end of trip processing in progress)	= Active = 9V < Voltage < 16V	0.12 seconds out of a 0.2 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Invalid Data Received From Video Processing Control Module	U2512	Indicates invalid or out dated data was received from the Video Processing Control Module	Alive Rolling Counter or Checksum error on High Speed Object CAN Bus on messages: $345, $346, or $347.	6 out of 10 failures of ARC or Checksum on any frame	FO Can Communication Bus Voltage The Diagnostic system is not in a short term/state of reset (Code clear in progress, diagnostic reenable in progress, or end of trip processing in progress)	= Active = 9V < Voltage < 16V	0.6 seconds out of a 1 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Control Moduel - Data Memory Failure	U3000	RAM Image Corruption Test: this diagnostic performs a CRC check of the application software and calibration images located in ECU RAM. The images are copied from ECU ROM into RAM during initialization.	When the running RAM image Cyclic Redundancy Check checksum does not match the Cyclic Redundancy Check checksum stored in RAM	RAM Checksum ≠ Calculated Checksum	Diagnostic will run anytime there is sufficient processor throughput to allow execution of background tasks. Diagnoistic Enabled	 = 1.0 (1 = TRUE)	Immediately Upon Fault Detection	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"
			When the running RAM image Cyclic Redundancy Check checksum does not match the Cyclic Redundancy Check checksum stored in ROM	ROM Checksum ≠ Calculated Checksum	Diagnostic will run anytime there is sufficient processor throughput to allow execution of background tasks. Diagnoistic Enabled	 = 1.0 (1 = TRUE)	Immediately Upon Fault Detection	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.

ECU Hardware Performance - Interal Malfunction	B101D	This diagnoistic monitors the internal power supply from the IMX6 processor to ensure they ar within acceptable range of operation. The voltage level is read by ADC and available through a HWIO interface	Processor is fed multiple voltages by an onboard power supply. DTC is set if these power supplies are out of range for a predefined sliding window.
			
			Fault set if:
			
			0.75 V Suply
			
			1.3 V Supply
			
			3.3 V Supply
			
			1.425 V Supply
				Min. Threshold = 0.70879V, Max. Threshold = 0.79079V
				
				Min. Threshold = 1.25V, Max. Threshold = 1.35V
				
				Min. Threshold = 3.07V, Max. Threshold = 3.43V
				
				Min. Threshold = 1.32V, Max. Threshold = 1.48V
					Diganoistic is Enabled
					
					If (Configuration for Low Voltage Enablement is FALSE), diagnoistic will not consider low voltage condition and run regardless of battery monitor voltage.
					
					If (Configuration for Low Voltage Enablement is TRUE), then the diagnoistic will NOT run when the battery monitor votlage is < 6.0 V
					
					Diagnoistic System is not in State of Reset. This includes:
					-Code Clear in Process
					-End of Trip Processing
					-Diagnoistic Re-enable in Process
						= TRUE	0.15 seconds out of a 0.2 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Brake Pressure Signal Protection Value Rolling Count or Validity Bit Error	C0561	Monitor indicates invalid or out of date brake pressure information was received from the brake controller on High Speed Expansion Bus.	Monitors the brake pressure from the brake system on High Speed Expansion Bus (GM HE $214) for Alive Rolling Counter (ARC) OR Cyclic Redundant Checksum (CRC) Failure. A failure of either will increase the fail counter.	10 Fail Counters within 16 Samples	Diagnoistic is Enabled HE CAN Communication Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process	= TRUE = Active	0.5 seconds out of a 0.8 seconds window Diagnostic runs every 50 msec	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Brake Pedal Inital Travel Achieved Message Counter Incorrect	C1206	Monitor indicates invalid or out of date Brake Pedal Inital Travel Achieved Message was received on High Speed Expansion Bus.	Monitors brake pedal travel on High Speed Expansion Bus (GM HE $0F1) for Alive Rolling Counter (ARC) OR Cyclic Redundant Checksum (CRC) Failure. A failure of either will increase the fail counter.	6 Fail Counters within 10 Samples	Diagnoistic is Enabled HE CAN Communication Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process	= TRUE = Active	0.06 seconds out of a 0.1 seconds window Diagnoistic runs every 10 msec	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Steering Wheel Angle Sensor Signal Message Counter Incorrect	C1211	Monitor indicates invalid or out of date Steering Angle Sensor Message was received on High Speed and Chassis Expansion Bus. This include both the electronic power steering system, and the secondary column mounted steering angle sensor	Monitors steering angle signal from the electronic power steering sensor on High Speed Expansion Bus (GM HE $1E5) for Alive Rolling Counter (ARC) OR Cyclic Redundant Checksum (CRC) Failure. A failure of either will increase the fail counter.	6 Fail Counters within 10 Samples	Diagnoistic is Enabled HE CAN Communication Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process	= TRUE = Active	0.06 seconds out of a 0.1 seconds window Diagnoistic runs every 10 msec	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"
			Monitors steering angle signal from the secondary steering angle sensor on Chassis Expansion High Speed Bus (GM CE $1E5) for Alive Rolling Counter (ARC) OR Cyclic Redundant Checksum (CRC) Failure. A failure of either will increase the fail counter.	6 Fail Counters within 10 Samples	Diagnoistic is Enabled CE CAN Communication Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process	= TRUE = Active	0.06 seconds out of a 0.1 seconds window Diagnoistic runs every 10 msec	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Steering Torque Delivered Status Message Counter Incorrect on High Speed CAN Bus	C2A05	Monitor indicates invalid or out of date Steering Torque Message was received on High Speed Bus.	Monitors steering torque on High Speed Bus (GM HS $164) for Alive Rolling Counter (ARC) OR Cyclic Redundant Checksum (CRC) Failure. A failure of either will increase the fail counter.	6 Fail Counters within 10 Samples	Diagnoistic is Enabled HS CAN Communication Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process	= TRUE = Active	0.06 seconds out of a 0.1 seconds window Diagnoistic runs every 10 msec	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Steering Torque Delivered Status Message Counter Incorrect on Chassis High Speed CAN Bus	C2A06	Monitor indicates invalid or out of date Steering Torque Message was received on Chassis High Speed CAN Bus.	Monitors steering torque on Chassis High Speed Bus (GM CE $164) for Alive Rolling Counter (ARC) OR Cyclic Redundant Checksum (CRC) Failure. A failure of either will increase the fail counter.	6 Fail Counters within 10 Samples	Diagnoistic is Enabled CE CAN Communication Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process	= TRUE = Active	0.06 seconds out of a 0.1 seconds window Diagnoistic runs every 10 msec	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
System Voltage Low	P0562	Detects a low 12V system. This diagnostic reports the DTC when battery voltage is low.	System voltage low	Battery Voltage <= 10.0 Volts	Run/Crank Starter motor status Diagnostic Engine RPM	= Active = Not Engaged = Enabled >= 1,200.0 RPM	0.075 seconds out of a 0.075 seconds window Diagnoistic runs every 100 ms	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Control Module Read Only Memory Performance	P0601	Monitors the performance of the Read Only Memory. This includes the non-volatile boot, code, or calibration memory. A Cyclic redundancy check, and Sinlg Bit ROM check is used. This diagnostic detects if the Compressor HV Voltage sensor has an out of range high circuit fault. If the enable conditions are met and compressor has detected an instantaneous out of range high fault on the sensor, the fail counter will increment. If the calibrated fail count threshold is met before the calibrated sample count, the diagnostic will report a FAIL and if not it will report a PASS. The diagnostic will continue to report as long as the enablement conditions are met.	When the cyclical redundancy check is invalid, the fault flag is set to TRUE and the fail counter increments	Fail Counter > 5		The CRC diagnostic will run anytime there is sufficient processor throughput to allow execution of background task	See enable conditions	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"
			For Single Bit ROM Errors, the fault fault is to TRUE and the fail counter is increased	Fail Counter >5	Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process	Diagnoistic System is not in State of Reset.	See enable conditions	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Control Module Not Programmed	P0602	Indicates the EOCM needs to be programmed	This DTC is set via calibration, when KeIDND_b_NoStartCal	=TRUE	Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process	Diagnoistic System is not in State of Reset.	1 second	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Control Module Long Term Memory Reset	P0603	Data was lost from Non-Volatile Memory. Could be due to failure of flash, NVM memory failure, first time power up if the shut down was interrupted	Non-volatile memory (static or dynamic) checksum failure at Powerup	= TRUE	Controller Initialize	= Complete	Once during start-up	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Control Module Random Access Memory Performance	P0604	If there is a failure in these types in RAM: Secondary, System, Cache, eTUP	Indicates that control module is unable to correctly write and read data to and from: - RAM - Cached RAM - TPU RAM	Detects data read does not match data written >= = 3 counts = 3 counts = 3 counts	Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process	Diagnoistic System is not in State of Reset.	= 2,000.00 mseconds	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"
			Indicates that the primary processor detects a mismatch between the data and dual data is found during RAM updates. Detects a mismatch in data and dual data updates >	= 0.175 seconds				
			Indicates that the primary processor detects an illegal write attempt to protected RAM. Number of illegal writes are >	= 65,534 counts				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Control Module Processor Performance	P0606	Indicates that the EOCM has detected an internal processor integrity fault. These include diagnostics done on the SPI Communication as well as a host of diagnostics for both the primary and secondary processsors.	If any of the following fault occurs: - ROM completion fault (reported to PISR from MPMR) - ALU fault - Configuration Registers fault - Stack fault - Analog to Digital Converter fault - Secondary processor detected Main processor CPU State of Health fault - DMA transfer fault - Missing T0 task's motor control related duty cycle event fault - Lockstep fault - Secondary processor not running Seed/Key test - Secondary processor fails to take remedial action - Secondary processor received incorrect keys - Main processor detected Seed/Key timeout - Main processor detected seeds received in wrong order		Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process And the Run/Crank Voltages are not low.	Diagnoistic System is not in State of Reset. > 10.0 V	The diagnoistic operates every 12.5 msec	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Control Module Long Term Memory Performance	P062F	This diagnostic runs test for non-volatile memory performance diagnostic. Checks if Assembly Cals are defaulted or non-volatile memory Handler is unable to commit to flash in the future due to memory errors. Typically this means that the controller has run out of flash blocks for storing the data (the total erase/write cycles for each block has been exceeded.	When BINVDM region needs to be copied but cannot be VeMEMR_b_BINVDM_CannotCopy	 = TRUE		To be run during NVM Handler control task	Runs every 100 ms	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"
			When there is an assembly calibration failure reported by HWIO at initialization. Ve MEMD_b_AsyCalFail	 = TRUE		To be run during NVM Handler control task	Runs every 100 ms	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Accelerator Pedal Position Signal Message Counter Incorrect	P100E	Monitor indicates invalid or out of date data acceleator pedal position was received from the engine controller on High Speed Expansion Bus.	Monitors the accelerator pedal position signal from the engine on High Speed Expansion Bus (GM HE $1C4) for Alive Rolling Counter (ARC) OR Cyclic Redundant Checksum (CRC) Failure. A failure of either will increase the fail counter.	6 Fail Counters within 10 Samples	Diagnoistic is Enabled EOCM2 Supply Voltage HE CAN Communication Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process	= TRUE > 9.0 V for > 3 seconds = Active	0.15 seconds out of a 0.25 seconds window Diagnoistic Runs every 25 ms	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Distance Sensing Cruise Control Driver Requested Torque Signal Message Counter Incorrect	P157B	Monitor indicates invalid or out of date EOCM torque feedback was received from the engine controller on High Speed Expansion Bus.	Monitors the EOCM torque feedback from the engine on High Speed Expansion Bus (GM HE $1C4) for Alive Rolling Counter (ARC) OR Cyclic Redundant Checksum (CRC) Failure. A failure of either will increase the fail counter.	6 Fail Counters within 10 Samples	Diagnoistic is Enabled EOCM2 Supply Voltage HE CAN Communication Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process	= TRUE > 9.0 V for > 3 seconds = Active	0.15 seconds out of a 0.25 seconds window Diagnoistic Runs every 25 ms	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Monitor Control Module Serial Peripheral Interface Bus 2	P16E9	This diagnoistic monitors for Interprocessor communications (Between K1, K2, IMX Processor)	When it detects SPI communication fault as indicated between any two micros (K1,K2,IMX) in EOCM2		Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process AND No error parsing Serial Perpheral Interface Data		0.04 seconds out of a 0.08 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Monitor Control Module Serial Peripheral Interface Bus 1	P16F0	This diagnoistic monitors for Interprocessor communications (Between K1, K2, IMX Processor)	When it detects SPI communication fault as indicated between any two micros (K1,K2,IMX) in EOCM2		Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process AND No error parsing Serial Perpheral Interface Data		0.04 seconds out of a 0.08 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Control Module Communication on High Speed CAN Bus Off	U0073	A bus off condition has been detected for the High Speed CAN Bus.	This DTC monitors for a BUS off condition on GM HS CAN Bus	A failure is detected for 3 counts for 1000 ms	Vehicle Power Mode EOCM Operational Condition Diagnoistic Enabled Supply Voltage	= RUN = EOCM Comm Active State = True 9 > V > 16V	3 seconds out of a 5 seconds window Diagnoistic runs every 1000 ms	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Control Module Communication on Object High Speed CAN Bus Off	U0075	A bus off condition has been detected for the Front Object High Speed CAN Bus.	This DTC monitors for a BUS off condition on Front Object High Speed CAN BUs	A failure is detected for 3 counts for 1000 ms	Vehicle Power Mode EOCM Operational Condition Diagnoistic Enabled Supply Voltage	= RUN = EOCM Comm Active State = True 9 > V > 16V	3 seconds out of a 5 seconds window Diagnoistic runs every 1000 ms	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Control Module Communication on FlexRay 1A Bus Off	U007E	A bus off condition has been detected for the FlexRay 1A Network	This DTC monitors for a FlexRay 1A Bus Off Contition: 1. Active Star internal faults (ex. Short, under-voltage, over-temperature, bus clamp) 2. Active Star branch faults (short circuits and bus clamping) 3. FlexRay driver detected faults (time/clock, startup, wakeup, out sync, and other syntax errors caused by external host) 4. PDU length mismatch, length zero and compare failures		Vehicle Power Mode EOCM Operational Condition Diagnoistic Enabled Supply Voltage	= RUN = EOCM Comm Active State = True 9 > V > 16V	0.2 seconds out of a 20 seconds window Diagnoistic runs every 20 ms	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Engine Control Module "A"	U0100	This DTC is set by the EOCM when signal supervision by the EOCM on the Engine Control Module has failed.	Message is not received from controller for: Message $0C9 Message $0D3 Message $1C3 Message $1C4 Message $1C5 Message $1CA Message $3E9 Message $3FC Message $4F1	 > 0.5 seconds > 0.5 seconds > 1.0 seconds > 1.0 seconds > 1.0 seconds > 1.0 seconds > 5.0 seconds > 10.0 seconds > 40.0 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter K_HSCOM_DIAG_ENABLE	= RUN > 9V = 0 = 1 (True)	See threshold value.	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Transmission Control Module	U0101	This DTC is set by the EOCM when signal supervision by the EOCM on the Tramission Control Module has failed.	Message is not received from controller for: Message $1F5	 > 1.0 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter K_HSCOM_DIAG_ENABLE	= RUN > 9V = 0 = 1 (True)	See threshold value.	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Steering Angle Sensor Module	U0126	This DTC is set by the EOCM when signal supervision by the EOCM on the steering angle sensor has failed.	Message is not received from controller for: Message $1E5	 > 0.5 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter K_CHASCOM_DIAG_ENABLE	= RUN > 9V = 0 = 1 (True)	See threshold value.	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Body Control Module	U0140	This DTC is set by the EOCM when signal supervision by the EOCM on the Body Control Module has failed.	Message is not received from controller for: Message $0F1 Message $1F1 Message $1E1	 > 0.5 seconds > 1.5 seconds > 5.0 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter K_HSCOM_DIAG_ENABLE	= RUN > 9V = 0 = 1 (True)	See threshold value.	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Restrains Control Module	U0151	This DTC is set by the EOCM when signal supervision by the EOCM on the Restrains Control Module has failed.	Message is not received from controller for: Message $130 Message $140	 > 0.5 seconds > 0.5 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter K_LSCOM_DIAG_ENABLE	= RUN > 9V = 0 = 1 (True)	See threshold value.	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Telematic Control Module	U0198	This DTC is set by the EOCM when signal supervision by the EOCM on the Telematic Control Module has failed.	Message is not received from controller for: Message $260 Message $261 Message $262 Message $263 Message $264 Message $265	 > 10.0 seconds > 10.0 seconds > 10.0 seconds > 10.0 seconds > 10.0 seconds > 10.0 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter K_HSCOM_DIAG_ENABLE	= RUN > 9V = 0 = 1 (True)	See threshold value.	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Invalid Data Received From Anti-Lock Brake System Control Module	U0415	Indicates invalid or out dated data was received from the Brake Control Module	ARC or Checksum error on Chassis Expanson CAN Bus any of the following messages: $17D, $0C1, or $0C5.	6 out of 10 failures of ARC or Checksum on any frame	CE Can Communication Bus Voltage The Diagnostic system is not in a short term/state of reset (Code clear in progress, diagnostic reenable in progress, or end of trip processing in progress)	= Active = 9V < Voltage < 16V	0.06 seconds out of a 0.1 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Invalid Data Received From Restraints Control Module	U0452	Indicates invalid or out dated data was received from the Restrain Control Module	ARC or Checksum error on Chassis Expanson CAN Bus any of the following messages: $130 OR $140	6 out of 10 failures of ARC or Checksum on any frame	CE Can Communication Bus Voltage The Diagnostic system is not in a short term/state of reset (Code clear in progress, diagnostic reenable in progress, or end of trip processing in progress)	= Active = 9V < Voltage < 16V	0.06 seconds out of a 0.1 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Invalid Data Received From Telematics Communication Interface Control Module (ONSTAR)	U0499	Indicates invalid or out dated data was received from the Telematics Communication Interface Control module	ARC or Checksum error on HE CAN Bus any of the following messages: $260, $261, $262, $263, $264, or $265.	6 out of 10 failures of ARC or Checksum on any frame	Front Object Can Communication Bus Voltage The Diagnostic system is not in a short term/state of reset (Code clear in progress, diagnostic reenable in progress, or end of trip processing in progress)	= Active = 9V < Voltage < 16V	0.06 seconds out of a 0.1 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Invalid Data Received From Active Safety Control Module 2	U053C	Indicates invalid or out dated data was received from From Active Safety Control Module 2 (EOCM2B)	ARC or Checksum error on the following signals: - High Speed Expansion CAN Bus $320 - Chassis Expansion Can Bus $154 - "EOCM2B_Operational_Status" frame on FlexRay channel A and B.	6 out of 10 failures of ARC or Checksum on any frame	Front Object CAN, Chassis Expansion CAN and FlexRay Communication Bus Voltage The Diagnostic system is not in a short term/state of reset (Code clear in progress, diagnostic reenable in progress, or end of trip processing in progress)	= Active = 9V < Voltage < 16V	0.06 seconds out of a 0.1 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Vehicle Dynamics Sensor 1	U1032	This DTC is set by the EOCM when signal supervision by the EOCM on the Vehicle Dynamics Sensor 1 has failed.	Message is not received from controller for: Message $130 Message $132 Message $134	 > 0.5 seconds > 0.5 seconds > 0.5 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter K_FOCOM_DIAG_ENABLE	= RUN > 9V = 0 = 1 (True)	See threshold value.	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Vehicle Dynamics Sensor 2	U1033	This DTC is set by the EOCM when signal supervision by the EOCM on the Vehicle Dynamics Sensor 2 has failed.	Message is not received from controller for: Message $136 Message $138 Message $140	 > 0.5 seconds > 0.5 seconds > 0.5 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter K_FOCOM_DIAG_ENABLE	= RUN > 9V = 0 = 1 (True)	See threshold value.	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Electronic Brake Control Module on Chassis Expansion CAN Bus	U1833	This DTC is set by the EOCM when signal supervision by the EOCM on the Electronic Brake Control Module on Chassis Expansion CAN Bus has failed.	Message is not received from controller for: Message $0C0 Message $0C1 Message $0C5 Message $170 Message $17D Message $348 Message $34A	 > 0.5 seconds > 0.5 seconds > 0.5 seconds > 0.5 seconds > 5.0 seconds > 2.0 seconds > 2.0 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter K_CECOM_DIAG_ENABLE	= RUN > 9V = 0 = 1 (True)	See threshold value.	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Telematics Communication Interface Control Module on Low Speed CAN Bus	U183E	This DTC is set by the EOCM when signal supervision by the EOCM on the Telematics Communication Interface Control Module has failed on Low Speed CAN Bus	Vectra Specific Network Management Data from the TCP is missing	Signal not recieved for 6 out of 10 counts	System Power Mode Battery Voltage Manufacturing Enable Counter K_LSCOM_DIAG_ENABLE	= RUN > 9V = 0 = 1 (True)	0.6 seconds out of a 1 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Body Control Module on Low Speed CAN Bus	U184A	This DTC is set by the EOCM when signal supervision by the EOCM on the Body Control Module has failed on Low Speed CAN Bus	Vectra Specific Network Management Data from the BCM is missing	Signal not recieved for 6 out of 10 counts	System Power Mode Battery Voltage Manufacturing Enable Counter K_LSCOM_DIAG_ENABLE	= RUN > 9V = 0 = 1 (True)	0.6 seconds out of a 1 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Power Steering Control Module on High Speed CAN Bus	U18BA	This DTC is set by the EOCM when signal supervision by the EOCM on the Electronic Power Steering System on High Speed CAN Bus has failed.	Message is not received from controller for: Message $164 Message $1E5	 > 0.5 seconds > 0.5 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter K_CECOM_DIAG_ENABLE	= RUN > 9V = 0 = 1 (True)	See threshold value.	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Power Steering Control Module on Chassis Expansion High Speed CAN Bus	U18BB	This DTC is set by the EOCM when signal supervision by the EOCM on the Electronic Power Steering System on Chassis Expansion Speed CAN Bus has failed.	Message is not received from controller for: Message $164	 > 0.5 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter K_CECOM_DIAG_ENABLE	= RUN > 9V = 0 = 1 (True)	See threshold value.	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Frontview Camera Module on Flexray Bus	U18C2	This DTC is set by the EOCM when signal supervision by the EOCM for the Front Camera on the Flexray bus has failed.	Message is not received from controller for Flexray Message: F_Vision_GFHB_Data Freespace_Conf Lane_Boundary_1 Lane_Boundary_2 Lane_Boundary_3 Lane_Boundary_4 Lane_Boundary_5 Lane_Boundary_6 Lane_Boundary_7 Lane_Boundary_8 Lane_Boundary_9_LeftBarrier Lane_Boundary_10_RightBarrier Lane_Boundary_Conf Lane_Boundary_HPP Lane_Det_Header Lane_Transition_Points Lane_Transition_Points_Alt LGT_ControlHighBeamGlare LGT_ObjectDetect_Info_1 LGT_ObjectDetect_Info_2 LGT_ObjectDetect_Info_3 LGT_ObjectDetect_Info_4 LGT_ObjectDetect_Info_5 LGT_ObjectDetect_Info_6 LGT_ObjectDetect_Info_7 LGT_ObjectDetect_Info_8 Obj_Track_1 Obj_Track_2 Obj_Track_3 Obj_Track_4 Obj_Track_5 Obj_Track_6 Obj_Track_7	For all Signals: > 10.0 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter FlexRay Diagnostics	= RUN > 9V = 0 = 1 (True)	See threshold value.	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
			Obj_Track_8 Obj_Track_9 Obj_Track_10 Obj_Track_11 Obj_Track_12 Obj_Track_13 Obj_Track_14 Obj_Track_15 Scene_Info_1 Scene_Info_2 LHT_CameraObjConfirmation Obj_Det_Header Ped_Alrt_Brk Road_Bank_SuperElevation Road_Elevation Road_Shoulder System_Header					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Electronic Brake Control Module on High Speed CAN Bus	U18C5	This DTC is set by the EOCM when signal supervision by the EOCM on the Electronic Brake Control Module on High Speed CAN Bus has failed.	Message is not received from controller for: Message $1C7 Message $1E9 Message $214 Message $2F9	 > 1.0 seconds > 1.0 seconds > 2.0 seconds > 2.0 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter K_HSCOM_DIAG_ENABLE	= RUN > 9V = 0 = 1 (True)	See threshold value.	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Active Safety Control Module 1 on Flexray Bus	U18CB	This DTC is set by the EOCM when signal supervision by the EOCM2A for the EOCM2B on the Flexray bus has failed.	Message is not received from controller for Flexray Message: Secondary_System_Op_Stat	 > 10.0 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter FlexRay Diagnostics	= RUN > 9V = 0 = 1 (True)	See threshold value.	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Active Safety Control Module 1 on High Speed CAN Bus	U18D0	This DTC is set by the EOCM when signal supervision by the EOCM2A for the EOCM2B on the High Speed CAN bus has failed.	Message is not received from controller for Flexray Message: Secondary_System_Op_Stat	> 5.0 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter HSCOM Diagnostics	= RUN > 9V = 0 = 1 (True)	See threshold value.	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Invalid Data Received from Vehicle Dynamic Sensor 1	U250E	This DTC is set by the EOCM when signal supervision by the EOCM on the Vehicle Dynamics Sensor 1 has failed on Front Object CAN Bus	ARC or Checksum error on Front Object Expanson CAN Bus any of the following messages: $130, $132, or $134	6 out of 10 failures of ARC or Checksum on any frame	FO Can Communication Bus Voltage The Diagnostic system is not in a short term/state of reset (Code clear in progress, diagnostic reenable in progress, or end of trip processing in progress)	= Active = 9V < Voltage < 16V	0.06 seconds out of a 0.1 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Invalid Data Received from Vehicle Dynamic Sensor 1	U250F	This DTC is set by the EOCM when signal supervision by the EOCM on the Vehicle Dynamics Sensor 2 has failed on Front Object CAN Bus	ARC or Checksum error on Front Object Expanson CAN Bus any of the following messages: $136, $138, or $140	6 out of 10 failures of ARC or Checksum on any frame	FO Can Communication Bus Voltage The Diagnostic system is not in a short term/state of reset (Code clear in progress, diagnostic reenable in progress, or end of trip processing in progress)	= Active = 9V < Voltage < 16V	0.06 seconds out of a 0.1 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Control Module - Internal Electronic Failure	U3000	This diagnoistic monitors the calculated results from each Komodos processor to ensure they all match. The specific calculations monitored are within LXCR (Lane Change and Centering Control) variables, LMFR (Lane Mapping Fusion) variables, or TSTR (Target Object Selection and Threat Assessment) variables.	A mismatch is key varables within software rings LXCR, LMFR & TSTR, operating in parallel on other Komodos processors (K1P, K2P, K1R, K2P).	20 mismatches out of 20 counts	Diagnostic will run anytime there is sufficient processor throughput to allow execution of background tasks. Diagnoistic Enabled for each software componet (LXCR, LMFR, TSTR)	= Enabled for all software componet	0.2 seconds out of a 0.2 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.

ECU Hardware Performance - Interal Malfunction	B101D	This diagnoistic monitors the internal power supply from the processor to ensure they ar within acceptable range of operation. The voltage level is read by ADC and available through a HWIO interface	Processor is fed multiple voltages by an onboard power supply. DTC is set if these power supplies are out of range for a predefined sliding window.
			
			Fault set if:
			
			0.75 V Suply
			
			1.3 V Supply
			
			3.3 V Supply
			
			1.425 V Supply
				Min. Threshold = 0.70879V, Max. Threshold = 0.79079V
				
				Min. Threshold = 1.25V, Max. Threshold = 1.35V
				
				Min. Threshold = 3.07V, Max. Threshold = 3.43V
				
				Min. Threshold = 1.32V, Max. Threshold = 1.48V
					Diganoistic is Enabled
					
					If (Configuration for Low Voltage Enablement is FALSE), diagnoistic will not consider low voltage condition and run regardless of battery monitor voltage.
					
					If (Configuration for Low Voltage Enablement is TRUE), then the diagnoistic will NOT run when the battery monitor votlage is < 6.0 V
					
					Diagnoistic System is not in State of Reset. This includes:
					-Code Clear in Process
					-End of Trip Processing
					-Diagnoistic Re-enable in Process
						= TRUE	0.15 seconds out of a 0.2 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Brake Pressure Signal Protection Value Rolling Count or Validity Bit Error	C0561	Monitor indicates invalid or out of date brake pressure information was received from the brake controller on High Speed Expansion Bus.	Monitors the brake pressure from the brake system on High Speed Expansion Bus (GM HE $214) for Alive Rolling Counter (ARC) OR Cyclic Redundant Checksum (CRC) Failure. A failure of either will increase the fail counter.	10 Fail Counters within 16 Samples	Diagnoistic is Enabled HE CAN Communication Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process	= TRUE = Active	0.5 seconds out of a 0.8 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Brake Pedal Inital Travel Achieved Message Counter Incorrect	C1206	Monitor indicates invalid or out of date Brake Pedal Inital Travel Achieved Message was received on High Speed Expansion Bus.	Monitors brake pedal travel on High Speed Expansion Bus (GM HE $0F1) for Alive Rolling Counter (ARC) OR Cyclic Redundant Checksum (CRC) Failure. A failure of either will increase the fail counter.	6 Fail Counters within 10 Samples	Diagnoistic is Enabled HE CAN Communication Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process	= TRUE = Active	0.06 seconds out of a 0.1 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Steering Wheel Angle Sensor Signal Message Counter Incorrect	C1211	Monitor indicates invalid or out of date Steering Angle Sensor Message was received on High Speed and Chassis Expansion Bus. This include both the electronic power steering system, and the secondary column mounted steering angle sensor	Monitors steering angle signal from the electronic power steering sensor on High Speed Expansion Bus (GM HE $1F5) for Alive Rolling Counter (ARC) OR Cyclic Redundant Checksum (CRC) Failure. A failure of either will increase the fail counter.	6 Fail Counters within 10 Samples	Diagnoistic is Enabled HE CAN Communication Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process	= TRUE = Active	0.06 seconds out of a 0.1 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"
			Monitors steering angle signal from the secondary steering angle sensor on Chassis Expansion High Speed Bus (GM CE $1E5) for Alive Rolling Counter (ARC) OR Cyclic Redundant Checksum (CRC) Failure. A failure of either will increase the fail counter.	6 Fail Counters within 10 Samples	Diagnoistic is Enabled CE CAN Communication Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process	= TRUE = Active	0.06 seconds out of a 0.1 seconds window	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Steering Torque Delivered Status Message Counter Incorrect on High Speed CAN Bus	C2A05	Monitor indicates invalid or out of date Steering Torque Message was received on High Speed Bus.	Monitors steering torque on High Speed Bus (GM HS $164) for Alive Rolling Counter (ARC) OR Cyclic Redundant Checksum (CRC) Failure. A failure of either will increase the fail counter.	6 Fail Counters within 10 Samples	Diagnoistic is Enabled HS CAN Communication Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process	= TRUE = Active	0.06 seconds out of a 0.1 seconds window Diagnoistic runs every 10 msec	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Steering Torque Delivered Status Message Counter Incorrect on Chassis High Speed CAN Bus	C2A06	Monitor indicates invalid or out of date Steering Torque Message was received on Chassis High Speed CAN Bus.	Monitors steering torque on Chassis High Speed Bus (GM CE $164) for Alive Rolling Counter (ARC) OR Cyclic Redundant Checksum (CRC) Failure. A failure of either will increase the fail counter.	6 Fail Counters within 10 Samples	Diagnoistic is Enabled CE CAN Communication Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process	= TRUE = Active	0.06 seconds out of a 0.1 seconds window Diagnoistic runs every 10 msec	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
System Voltage Low	P0562	Detects a low 12V system. This diagnostic reports the DTC when battery voltage is low. Monitoring occurs when the engine speed is above a calibrated value.	System voltage high	Battery Voltage <= 10.0 Volts	Run/Crank Diagnostic Engine RPM	= Active = Enabled >= 1,200.0 RPM	0.075 seconds out of a 0.075 seconds window Diagnoistic runs every 12.5 ms	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Control Module Read Only Memory Performance	P0601	Monitors the performance of the Read Only Memory. This includes the non-volatile boot, code, or calibration memory. A Cyclic redundancy check, and Sinlg Bit ROM check is used. This diagnostic detects if the Compressor HV Voltage sensor has an out of range high circuit fault. If the enable conditions are met and compressor has detected an instantaneous out of range high fault on the sensor, the fail counter will increment. If the calibrated fail count threshold is met before the calibrated sample count, the diagnostic will report a FAIL and if not it will report a PASS. The diagnostic will continue to report as long as the enablement conditions are met.	When the cyclical redundancy check is invalid, the fault flag is set to TRUE and the fail counter increments	Fail Counter > 5		The CRC diagnostic will run anytime there is sufficient processor throughput to allow execution of background task		Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"
			For Single Bit ROM Errors, the fault fault is to TRUE and the fail counter is increased	Fail Counter >5	Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process	Diagnoistic System is not in State of Reset.		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Control Module Not Programmed	P0602	Indicates the EOCM needs to be programmed	This DTC is set via calibration, when KeIDND_b_NoStartCal	 =TRUE	Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process	Diagnoistic System is not in State of Reset.	1 second	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Control Module Long Term Memory Reset	P0603	Data was lost from Non-Volatile Memory. Could be due to failure of flash, NVM memory failure, first time power up if the shut down was interrupted	Non-volatile memory (static or dynamic) checksum failure at Powerup	= TRUE	Controller Initialize	= Complete	Once during start-up	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Control Module Random Access Memory Performance	P0604	If there is a failure in these types in RAM: Secondary, System, Cache, eTUP	Indicates that control module is unable to correctly write and read data to and from: - RAM - Cached RAM - TPU RAM	Detects data read does not match data written >= = 3 counts = 3 counts = 3 counts	Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process	Diagnoistic System is not in State of Reset.	= 2,000.00 mseconds	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"
			Indicates that the primary processor detects a mismatch between the data and dual data is found during RAM updates. Detects a mismatch in data and dual data updates >	= 0.175 seconds			Refer to Threshold Value	
			Indicates that the primary processor detects an illegal write attempt to protected RAM. Number of illegal writes are >	= 65,534 counts			Refer to Thresdhold Value	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Control Module Processor Performance	P0606	Indicates that the EOCM has detected an internal processor integrity fault. These include diagnostics done on the SPI Communication as well as a host of diagnostics for both the primary and secondary processsors.	If any of the following fault occurs: - ROM completion fault (reported to PISR from MPMR) - ALU fault - Configuration Registers fault - Stack fault - Analog to Digital Converter fault - Secondary processor detected Main processor CPU State of Health fault - DMA transfer fault - Missing T0 task’s motor control related duty cycle event fault - Lockstep fault - Secondary processor not running Seed/Key test - Secondary processor fails to take remedial action - Secondary processor received incorrect keys - Main processor detected Seed/Key timeout - Main processor detected seeds received in wrong order		Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process And the Run/Crank Voltages are not low.	Diagnoistic System is not in State of Reset. > 10.0 V	The diagnoistic operates every 12.5 msec	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Control Module Long Term Memory Performance	P062F	This diagnostic runs test for non-volatile memory performance diagnostic. Checks if Assembly Cals are defaulted or non-volatile memory Handler is unable to commit to flash in the future due to memory errors. Typically this means that the controller has run out of flash blocks for storing the data (the total erase/write cycles for each block has been exceeded.	When BINVDM region needs to be copied but cannot be VeMEMR_b_BINVDM_CannotCopy	 = TRUE		To be run during NVM Handler control task	Runs every 100 ms	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"
			When there is an assembly calibration failure reported by HWIO at initialization. Ve MEMD_b_AsyCalFail	 = TRUE		To be run during NVM Handler control task	Runs every 100 ms	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Accelerator Pedal Position Signal Message Counter Incorrect	P100E	Monitor indicates invalid or out of date data acceleator pedal position was received from the engine controller on High Speed Expansion Bus.	Monitors the accelerator pedal position signal from the engine on High Speed Expansion Bus (GM HE $1C4) for Alive Rolling Counter (ARC) OR Cyclic Redundant Checksum (CRC) Failure. A failure of either will increase the fail counter.	6 Fail Counters within 10 Samples	Diagnoistic is Enabled EOCM2 Supply Voltage HE CAN Communication Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process	= TRUE > 9.0 V for > 3 seconds = Active	0.15 seconds out of a 0.25 seconds window Diagnoistic Runs every 25 ms	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Distance Sensing Cruise Control Driver Requested Torque Signal Message Counter Incorrect	P157B	Monitor indicates invalid or out of date EOCM torque feedback was received from the engine controller on High Speed Expansion Bus.	Monitors the EOCM torque feedback from the engine on High Speed Expansion Bus (GM HE $1C4) for Alive Rolling Counter (ARC) OR Cyclic Redundant Checksum (CRC) Failure. A failure of either will increase the fail counter.	6 Fail Counters within 10 Samples	Diagnoistic is Enabled EOCM2 Supply Voltage HE CAN Communication Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process	= TRUE > 9.0 V for > 3 seconds = Active	0.15 seconds out of a 0.25 seconds window Diagnoistic Runs every 25 ms	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Monitor Control Module Serial Peripheral Interface Bus 2	P16E9	This diagnoistic monitors for Interprocessor communications (Between K1, K2, IMX Processor)	When it detects SPI communication fault as indicated between any two micros (K1,K2,IMX) in EOCM2		Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process AND No error parsing Serial Perpheral Interface Data	Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process AND No error in parsing SPI data	0.04 seconds out of a 0.08 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Monitor Control Module Serial Peripheral Interface Bus 1	P16F0	This diagnoistic monitors for Interprocessor communications (Between K1, K2, IMX Processor)	When it detects SPI communication fault as indicated between any two micros (K1,K2,IMX) in EOCM2		Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process AND No error parsing Serial Perpheral Interface Data	Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process AND No error in parsing SPI data	0.04 seconds out of a 0.08 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Control Module Communication on High Speed CAN Bus Off	U0073	A bus off condition has been detected for the Chassis Expansion CAN Bus.	A bus off condition has been detected for the High Speed CAN Bus.	A failure is detected for 3 counts for 1000 ms	Vehicle Power Mode EOCM Operational Condition Diagnoistic Enabled Supply Voltage	= RUN = EOCM Comm Active State = True 9 > V > 16V	3 seconds out of a 5 seconds window Diagnoistic runs every 1000 ms	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Control Module Communication on FlexRay 1B Bus Off	U007E	A bus off condition has been detected for the FlexRay 1B Network	This DTC monitors for a FlexRay 1B Bus Off Contition	A failure is detected for 6 counts for 1000 ms	Vehicle Power Mode EOCM Operational Condition Diagnoistic Enabled Supply Voltage	= RUN = EOCM Comm Active State = True 9 > V > 16V	0.2 seconds out of a 20 seconds window Diagnoistic runs every 20 ms	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Engine Control Module "A"	U0100	This DTC is set by the EOCM when signal supervision by the EOCM on the Engine Control Module has failed.	Message is not received from controller for: Message $0C9 Message $0D3 Message $1C3 Message $1C4 Message $1C5 Message $1CA Message $3E9 Message $4F1	 > 0.5 seconds > 0.5 seconds > 1.0 seconds > 1.0 seconds > 1.0 seconds > 1.0 seconds > 5.0 seconds > 40.0 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter K_HSCOM_DIAG_ENABLE	= RUN > 9V = 0 = 1 (True)	See threshold value.	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Transmission Control Module	U0101	This DTC is set by the EOCM when signal supervision by the EOCM on the Tramission Control Module has failed.	Message is not received from controller for: Message $1F5	> 1.0 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter K_HSCOM_DIAG_ENABLE	= RUN > 9V = 0 = 1 (True)	See threshold value.	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Steering Angle Sensor Module	U0126	This DTC is set by the EOCM when signal supervision by the EOCM on the steering angle sensor has failed.	Message is not received from controller for: Message $1E5	> 0.5 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter K_CHASCOM_DIAG_ENABLE	= RUN > 9V = 0 = 1 (True)	See threshold value.	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Body Control Module	U0140	This DTC is set by the EOCM when signal supervision by the EOCM on the Body Control Module has failed.	Message is not received from controller for: Message $0F1 Message $1F1 Message $1E1	 > 0.5 seconds > 1.5 seconds > 5.0 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter K_HSCOM_DIAG_ENABLE	= RUN > 9V = 0 = 1 (True)	See threshold value.	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Restrains Control Module	U0151	This DTC is set by the EOCM when signal supervision by the EOCM on the Restrains Control Module has failed.	Message is not received from controller for: Message $130 Message $140	 > 0.5 seconds > 0.5 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter K_LSCOM_DIAG_ENABLE	= RUN > 9V = 0 = 1 (True)	See threshold value.	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Telematic Control Module	U0198	This DTC is set by the EOCM when signal supervision by the EOCM on the Telematic Control Module has failed.	Message is not received from controller for: Message $260 Message $261 Message $262 Message $263 Message $264 Message $265	 > 10.0 seconds > 10.0 seconds > 10.0 seconds > 10.0 seconds > 10.0 seconds > 10.0 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter K_HSCOM_DIAG_ENABLE	= RUN > 9V = 0 = 1 (True)	See threshold value.	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Invalid Data Received From Anti-Lock Brake System Control Module	U0415	Indicates invalid or out dated data was received from the Brake Control Module	ARC or Checksum error on Chassis Expanson CAN Bus any of the following messages: $17D, $0C1, or $0C5.	6 out of 10 failures of ARC or Checksum on any frame	CE Can Communication Bus Voltage The Diagnostic system is not in a short term/state of reset (Code clear in progress, diagnostic reenable in progress, or end of trip processing in progress)	= Active = 9V < Voltage < 16V	0.06 seconds out of a 0.1 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Invalid Data Received From Restraints Control Module	U0452	Indicates invalid or out dated data was received from the Restrain Control Module	ARC or Checksum error on Chassis Expanson CAN Bus any of the following messages: $130 OR $140	6 out of 10 failures of ARC or Checksum on any frame	CE Can Communication Bus Voltage The Diagnostic system is not in a short term/state of reset (Code clear in progress, diagnostic reenable in progress, or end of trip processing in progress)	= Active = 9V < Voltage < 16V	0.06 seconds out of a 0.1 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Invalid Data Received From Telematics Communication Interface Control Module (ONSTAR)	U0499	Indicates invalid or out dated data was received from the Telematics Communication Interface Control module	ARC or Checksum error on HE CAN Bus any of the following messages: $260, $261, $262, $263, $264, or $265.	6 out of 10 failures of ARC or Checksum on any frame	Front Object Can Communication Bus Voltage The Diagnostic system is not in a short term/state of reset (Code clear in progress, diagnostic reenable in progress, or end of trip processing in progress)	= Active = 9V < Voltage < 16V	0.06 seconds out of a 0.1 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Invalid Data Received From Active Safety Control Module 1	U053B	Indicates invalid or out dated data was received from From Active Safety Control Module 1 (EOCM2A)	ARC or Checksum error on the following signals: - High Speed Expansion CAN Bus $320 - Chassis Expansion Can Bus $154 - EOCM2A_Operational_Status frame on FlexRay channel A and B	6 out of 10 failures of ARC or Checksum on any frame	Front Object CAN, Chassis Expansion CAN and FlexRay Communication Bus Voltage The Diagnostic system is not in a short term/state of reset (Code clear in progress, diagnostic reenable in progress, or end of trip processing in progress)	= Active = 9V < Voltage < 16V	0.06 seconds out of a 0.1 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Vehicle Dynamics Sensor 1	U1032	This DTC is set by the EOCM when signal supervision by the EOCM on the Vehicle Dynamics Sensor 1 has failed.	Message is not received from controller for: Message $130 Message $132 Message $134	 > 0.5 seconds > 0.5 seconds > 0.5 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter K_FOCOM_DIAG_ENABLE	= RUN > 9V = 0 = 1 (True)	See threshold value.	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Vehicle Dynamics Sensor 2	U1033	This DTC is set by the EOCM when signal supervision by the EOCM on the Vehicle Dynamics Sensor 2 has failed.	Message is not received from controller for: Message $136 Message $138 Message $140	 > 0.5 seconds > 0.5 seconds > 0.5 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter K_FOCOM_DIAG_ENABLE	= RUN > 9V = 0 = 1 (True)	See threshold value.	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Electronic Brake Control Module on Chassis Expansion CAN Bus	U1833	This DTC is set by the EOCM when signal supervision by the EOCM on the Electronic Brake Control Module on Chassis Expansion CAN Bus has failed.	Message is not received from controller for: Message $0C0 Message $0C1 Message $0C5 Message $170 Message $17D Message $348 Message $34A	 > 0.5 seconds > 0.5 seconds > 0.5 seconds > 0.5 seconds > 5.0 seconds > 2.0 seconds > 2.0 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter K_CECOM_DIAG_ENABLE	= RUN > 9V = 0 = 1 (True)	See threshold value.	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Telematics Communication Interface Control Module on Low Speed CAN Bus	U183E	This DTC is set by the EOCM when signal supervision by the EOCM on the Telematics Communication Interface Control Module has failed on Low Speed CAN Bus	Vectra Specific Network Management Data from the TCP is missing	Signal not recieved for 6 out of 10 counts	System Power Mode Battery Voltage Manufacturing Enable Counter K_LSCOM_DIAG_ENABLE	= RUN > 9V = 0 = 1 (True)	0.6 seconds out of a 1 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Body Control Module on Low Speed CAN Bus	U184A	This DTC is set by the EOCM when signal supervision by the EOCM on the Body Control Module has failed on Low Speed CAN Bus	Vectra Specific Network Management Data from the BCM is missing	Signal not recieved for 6 out of 10 counts	System Power Mode Battery Voltage Manufacturing Enable Counter K_LSCOM_DIAG_ENABLE	= RUN > 9V = 0 = 1 (True)	0.6 seconds out of a 1 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Power Steering Control Module on High Speed CAN Bus	U18BA	This DTC is set by the EOCM when signal supervision by the EOCM on the Electronic Power Steering System on High Speed CAN Bus has failed.	Message is not received from controller for: Message $164 Message $1E5	 > 0.5 seconds > 0.5 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter K_CECOM_DIAG_ENABLE	= RUN > 9V = 0 = 1 (True)	See threshold value.	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Power Steering Control Module on Chassis Expansion High Speed CAN Bus	U18BB	This DTC is set by the EOCM when signal supervision by the EOCM on the Electronic Power Steering System on Chassis Expansion Speed CAN Bus has failed.	Message is not received from controller for: Message $164	 > 0.5 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter K_CECOM_DIAG_ENABLE	= RUN > 9V = 0 = 1 (True)	See threshold value.	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Frontview Camera Module on Flexray Bus	U18C2	This DTC is set by the EOCM when signal supervision by the EOCM for the Front Camera on the Flexray bus has failed.	Message is not received from controller for Flexray Message: F_Vision_GFHB_Data Freespace_Conf Lane_Boundary_1 Lane_Boundary_2 Lane_Boundary_3 Lane_Boundary_4 Lane_Boundary_5 Lane_Boundary_6 Lane_Boundary_7 Lane_Boundary_8 Lane_Boundary_9_LeftBarrier Lane_Boundary_10_RightBarrier Lane_Boundary_Conf Lane_Boundary_HPP Lane_Det_Header Lane_Transition_Points Lane_Transition_Points_Alt LGT_ControlHighBeamGlare LGT_ObjectDetect_Info_1 LGT_ObjectDetect_Info_2 LGT_ObjectDetect_Info_3 LGT_ObjectDetect_Info_4 LGT_ObjectDetect_Info_5 LGT_ObjectDetect_Info_6 LGT_ObjectDetect_Info_7 LGT_ObjectDetect_Info_8 Obj_Track_1 Obj_Track_2 Obj_Track_3 Obj_Track_4 Obj_Track_5 Obj_Track_6 Obj_Track_7	For all Signals: > 10.0 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter FlexRay Diagnostics	= RUN > 9V = 0 = 1 (True)	See threshold value.	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
			Obj_Track_8 Obj_Track_9 Obj_Track_10 Obj_Track_11 Obj_Track_12 Obj_Track_13 Obj_Track_14 Obj_Track_15 Scene_Info_1 Scene_Info_2 LHT_CameraObjConfirmation Obj_Det_Header Ped_Alrt_Brk Road_Bank_SuperElevation Road_Elevation Road_Shoulder System_Header					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Electronic Brake Control Module on High Speed CAN Bus	U18C5	This DTC is set by the EOCM when signal supervision by the EOCM on the Electronic Brake Control Module on High Speed CAN Bus has failed.	Message is not received from controller for: Message $1C7 Message $1E9 Message $214 Message $2F9	 > 1.0 seconds > 1.0 seconds > 2.0 seconds > 2.0 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter K_HSCOM_DIAG_ENABLE	= RUN > 9V = 0 = 1 (True)	See threshold value.	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Active Safety Control Module 1 on Flexray Bus	U18CA	This DTC is set by the EOCM when signal supervision by the EOCM2A for the EOCM2B on the Flexray bus has failed.	Message is not received from controller for Flexray Message: Secondary_System_Op_Stat	> 10.0 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter FlexRay Diagnostics	= RUN > 9V = 0 = 1 (True)	See threshold value.	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Invalid Data Received from Vehicle Dynamic Sensor 1	U250E	This DTC is set by the EOCM when signal supervision by the EOCM on the Vehicle Dynamics Sensor 1 has failed on Front Object CAN Bus	ARC or Checksum error on Front Object Expanson CAN Bus any of the following messages: $130, $132, or $134	6 out of 10 failures of ARC or Checksum on any frame	FO Can Communication Bus Voltage The Diagnostic system is not in a short term/state of reset (Code clear in progress, diagnostic reenable in progress, or end of trip processing in progress)	= Active = 9V < Voltage < 16V	0.06 seconds out of a 0.1 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Invalid Data Received from Vehicle Dynamic Sensor 1	U250F	This DTC is set by the EOCM when signal supervision by the EOCM on the Vehicle Dynamics Sensor 2 has failed on Front Object CAN Bus	ARC or Checksum error on Front Object Expanson CAN Bus any of the following messages: $136, $138, or $140	6 out of 10 failures of ARC or Checksum on any frame	FO Can Communication Bus Voltage The Diagnostic system is not in a short term/state of reset (Code clear in progress, diagnostic reenable in progress, or end of trip processing in progress)	= Active = 9V < Voltage < 16V	0.06 seconds out of a 0.1 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Control Module - Internal Electronic Failure	U3000	This diagnoistic monitors the calculated results from each Komodos processor to ensure they all match. The specific calculations monitored are within LXCR (Lane Change and Centering Control) variables, LMFR (Lane Mapping Fusion) variables, or TSTR (Target Object Selection and Threat Assessment) variables.	A mismatch is key varables within software rings LXCR, LMFR & TSTR, operating in parallel on other Komodos processors (K1P, K2P, K1R, K2P).	20 mismatches out of 20 counts	Diagnostic will run anytime there is sufficient processor throughput to allow execution of background tasks. Diagnoistic Enabled for each software componet (LXCR, LMFR, TSTR)	= Enabled for all software componet	0.2 seconds out of a 0.2 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.

ECU Hardware Performance - Interal Malfunction	B101D	This diagnoistic monitors the internal power supply from the processor to ensure they ar within acceptable range of operation. The voltage level is read by ADC and available through a HWIO interface	Processor is fed multiple voltages by an onboard power supply. DTC is set if these power supplies are out of range for a predefined sliding window.
			
			Fault set if:
			
			0.75 V Suply
			
			1.3 V Supply
			
			3.3 V Supply
			
			1.425 V Supply
				Min. Threshold = 0.70879V, Max. Threshold = 0.79079V
				
				Min. Threshold = 1.25V, Max. Threshold = 1.35V
				
				Min. Threshold = 3.07V, Max. Threshold = 3.43V
				
				Min. Threshold = 1.32V, Max. Threshold = 1.48V
					Diganoistic is Enabled
					
					If (Configuration for Low Voltage Enablement is FALSE), diagnoistic will not consider low voltage condition and run regardless of battery monitor voltage.
					
					If (Configuration for Low Voltage Enablement is TRUE), then the diagnoistic will NOT run when the battery monitor votlage is < 5.5 voltage
					
					Diagnoistic System is not in State of Reset. This includes:
					-Code Clear in Process
					-End of Trip Processing
					-Diagnoistic Re-enable in Process
						= TRUE	0.15 seconds out of a 0.2 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

			Voltage difference between processors exceeds thresholds	Absolute Difference in Processor Voltage is Greater Than 3.0 V	Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process Diganoistic is Enabled	 = TRUE	3 seconds out of a 6 seconds window	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Brake Pressure Signal Protection Value Rolling Count or Validity Bit Error	C0561	Monitor indicates invalid or out of date brake pressure information was received from the brake controller on High Speed Expansion Bus.	Monitors the brake pressure from the brake system on High Speed Expansion Bus (GM HE $214) for Alive Rolling Counter (ARC) OR Cyclic Redundant;Checksum (CRC) Failure. A failure of either will increase the fail counter.	10 Fail Counters within 16 Samples	Diagnoistic is Enabled HE CAN Communication Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process	= TRUE = Active	0.5 seconds out of a 0.8 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Brake Pedal Inital Travel Achieved Message Counter Incorrect	C1206	Monitor indicates invalid or out of date Brake Pedal Inital Travel Achieved Message was received on High Speed Expansion Bus.	Monitors brake pedal travel on High Speed Expansion Bus (GM HE $0F1) for Alive Rolling Counter (ARC) OR Cyclic Redundant Checksum (CRC) Failure. A failure of either will increase the fail counter.	6 Fail Counters within 10 Samples	Diagnoistic is Enabled HE CAN Communication Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process	= TRUE = Active	0.06 seconds out of a 0.1 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Steering Wheel Angle Sensor Signal Message Counter Incorrect	C1211	Monitor indicates invalid or out of date Steering Angle Sensor Message was received on High Speed and Chassis Expansion Bus. This include both the electronic power steering system, and the secondary column mounted steering angle sensor	Monitors steering angle signal from the electronic power steering sensor on High Speed Expansion Bus (GM HE $1F5) for Alive Rolling Counter (ARC) OR Cyclic Redundant Checksum (CRC) Failure. A failure of either will increase the fail counter.	6 Fail Counters within 10 Samples	Diagnoistic is Enabled HE CAN Communication Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process	= TRUE = Active	0.06 seconds out of a 0.1 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"
			Monitors steering angle signal from the secondary steering angle sensor on Chassis Expansion High Speed Bus (GM CE $1E5) for Alive Rolling Counter (ARC) OR Cyclic Redundant Checksum (CRC) Failure. A failure of either will increase the fail counter.	6 Fail Counters within 10 Samples	Diagnoistic is Enabled CE CAN Communication Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process	= TRUE = Active	0.06 seconds out of a 0.1 seconds window	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Steering Torque Delivered Status Message Counter Incorrect on High Speed CAN Bus	C2A05	Monitor indicates invalid or out of date Steering Torque Message was received on High Speed Bus.	Monitors steering torque on High Speed Bus (GM HS $164) for Alive Rolling Counter (ARC) OR Cyclic Redundant Checksum (CRC) Failure. A failure of either will increase the fail counter.	6 Fail Counters within 10 Samples	Diagnoistic is Enabled HS CAN Communication Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process	= TRUE = Active	0.06 seconds out of a 0.1 seconds window Diagnoistic runs every 10 msec	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Steering Torque Delivered Status Message Counter Incorrect on Chassis High Speed CAN Bus	C2A06	Monitor indicates invalid or out of date Steering Torque Message was received on Chassis High Speed CAN Bus.	Monitors steering torque on Chassis High Speed Bus (GM CE $164) for Alive Rolling Counter (ARC) OR Cyclic Redundant Checksum (CRC) Failure. A failure of either will increase the fail counter.	6 Fail Counters within 10 Samples	Diagnoistic is Enabled CE CAN Communication Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process	= TRUE = Active	0.06 seconds out of a 0.1 seconds window Diagnoistic runs every 10 msec	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
System Voltage Low	P0562	Detects a low 12V system. This diagnostic reports the DTC when battery voltage is low. Monitoring occurs when the engine speed is above a calibrated value.	System voltage low	Battery Voltage <= 9.0 Volts	Run/Crank Diagnostic Engine Speed	= Active = Enabled >= 1,200.0 RPM	0.075 seconds out of a 0.075 seconds window Diagnoistic runs every 100 ms	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Control Module Read Only Memory Performance	P0601	Monitors the performance of the Read Only Memory. This includes the non-volatile boot, code, or calibration memory. A Cyclic redundancy check, and Sinlg Bit ROM check is used. This diagnostic detects if the Compressor HV Voltage sensor has an out of range high circuit fault. If the enable conditions are met and compressor has detected an instantaneous out of range high fault on the sensor, the fail counter will increment. If the calibrated fail count threshold is met before the calibrated sample count, the diagnostic will report a FAIL and if not it will report a PASS. The diagnostic will continue to report as long as the enablement conditions are met.	When the cyclical redundancy check is invalid, the fault flag is set to TRUE and the fail counter increments	Fail Counter > 5		The CRC diagnostic will run anytime there is sufficient processor throughput to allow execution of background task		Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"
			For Single Bit ROM Errors, the fault fault is to TRUE and the fail counter is increased	Fail Counter >5	Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process	Diagnoistic System is not in State of Reset.		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Control Module Not Programmed	P0602	Indicates the EOCM needs to be programmed	This DTC is set via calibration, when KeIDND_b_NoStartCal	 =TRUE	Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process	Diagnoistic System is not in State of Reset.	1 second	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Control Module Long Term Memory Reset	P0603	Data was lost from Non-Volatile Memory. Could be due to failure of flash, NVM memory failure, first time power up if the shut down was interrupted	Non-volatile memory (static or dynamic) checksum failure at Powerup	= TRUE	Controller Initialize	= Complete	Once during start-up	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Control Module Random Access Memory Performance	P0604	If there is a failure in these types in RAM: Secondary, System, Cache, eTUP	Indicates that control module is unable to correctly write and read data to and from: - RAM - Cached RAM - TPU RAM	Detects data read does not match data written >= = 3 counts = 3 counts = 3 counts	Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process	Diagnoistic System is not in State of Reset.	= 2,000.00 mseconds	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"
			Indicates that the primary processor detects a mismatch between the data and dual data is found during RAM updates. Detects a mismatch in data and dual data updates >	= 0.175 seconds				
			Indicates that the primary processor detects an illegal write attempt to protected RAM. Number of illegal writes are >	= 65,534 counts				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Control Module Processor Performance	P0606	Indicates that the EOCM has detected an internal processor integrity fault. These include diagnostics done on the SPI Communication as well as a host of diagnostics for both the primary and secondary processsors.	If any of the following fault occurs: - ROM completion fault (reported to PISR from MPMR) - ALU fault - Configuration Registers fault - Stack fault - Analog to Digital Converter fault - Secondary processor detected Main processor CPU State of Health fault - DMA transfer fault - Missing T0 task's motor control related duty cycle event fault - Lockstep fault - Secondary processor not running Seed/Key test - Secondary processor fails to take remedial action - Secondary processor received incorrect keys - Main processor detected Seed/Key timeout - Main processor detected seeds received in wrong order		Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process And the Run/Crank Voltages are not low.	Diagnoistic System is not in State of Reset. > 10.0 V	The diagnoistic operates every 12.5 msec	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Control Module Long Term Memory Performance	P062F	This diagnostic runs test for non-volatile memory performance diagnostic. Checks if Assembly Cals are defaulted or non-volatile memory Handler is unable to commit to flash in the future due to memory errors. Typically this means that the controller has run out of flash blocks for storing the data (the total erase/write cycles for each block has been exceeded.	When BINVDM region needs to be copied but cannot be VeMEMR_b_BINVDM_CannotCopy	= TRUE		To be run during NVM Handler control task	Runs every 100 ms	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"
			When there is an assembly calibration failure reported by HWIO at initialization. Ve MEMD_b_AsyCalFail	= TRUE		To be run during NVM Handler control task	Runs every 100 ms	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Accelerator Pedal Position Signal Message Counter Incorrect	P100E	Monitor indicates invalid or out of date data acceleator pedal position was received from the engine controller on High Speed Expansion Bus.	Monitors the accelerator pedal position signal from the engine on High Speed Expansion Bus (GM HE $1C4) for Alive Rolling Counter (ARC) OR Cyclic Redundant Checksum (CRC) Failure. A failure of either will increase the fail counter.	6 Fail Counters within 10 Samples	Diagnoistic is Enabled EOCM2 Supply Voltage HE CAN Communication Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process	= TRUE > 9.0 V for > 3 seconds = Active	0.15 seconds out of a 0.25 seconds window Diagnoistic Runs every 25 ms	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Distance Sensing Cruise Control Driver Requested Torque Signal Message Counter Incorrect	P157B	Monitor indicates invalid or out of date EOCM torque feedback was received from the engine controller on High Speed Expansion Bus.	Monitors the EOCM torque feedback from the engine on High Speed Expansion Bus (GM HE $1C4) for Alive Rolling Counter (ARC) OR Cyclic Redundant Checksum (CRC) Failure. A failure of either will increase the fail counter.	6 Fail Counters within 10 Samples	Diagnoistic is Enabled EOCM2 Supply Voltage HE CAN Communication Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process	= TRUE > 9.0 V for > 3 seconds = Active	0.15 seconds out of a 0.25 seconds window Diagnoistic Runs every 25 ms	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Monitor Control Module Serial Peripheral Interface Bus 2	P16E9	This diagnoistic monitors for Interprocessor communications (Between K1, K2, IMX Processor)	When it detects SPI communication fault as indicated between any two micros (K1,K2,IMX) in EOCM2		Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process AND No error parsing Serial Perpheral Interface Data			Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Monitor Control Module Serial Peripheral Interface Bus 1	P16F0	This diagnoistic monitors for Interprocessor communications (Between K1, K2, IMX Processor)	When it detects SPI communication fault as indicated between any two micros (K1,K2,IMX) in EOCM2		Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process AND No error parsing Serial Perpheral Interface Data			Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Control Module Communication on Object High Speed CAN Bus Off	U0075	A bus off condition has been detected for the Front Object High Speed CAN Bus.	This DTC monitors for a BUS off condition on Front Object High Speed CAN BUs	A failure is detected for 3 counts for 1000 ms	Vehicle Power Mode EOCM Operational Condition Diagnoistic Enabled Supply Voltage	= RUN = EOCM Comm Active State = True 9 > V > 16V	3 seconds out of a 5 seconds window Diagnoistic runs every 1000 ms	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Control Module Communication Bus E Off	U0077	A bus off condition has been detected for the GM High Speed CAN Bus.	This DTC monitors for a BUS off condition on GM High Speed CAN BUS	A failure is detected for 3 counts for 1000 ms	Vehicle Power Mode EOCM Operational Condition Diagnoistic Enabled Supply Voltage	= RUN = EOCM Comm Active State = True 9 > V > 16V	3 seconds out of a 5 seconds window Diagnoistic runs every 1000 ms	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Control Module Communication on Low Speed CAN Bus Off	U0078	A bus off condition has been detected for the Low Speed CAN Bus.	This DTC monitors for a low speed Bus off condition	A failure is detected for 6 counts for 1000 ms	Vehicle Power Mode EOCM Operational Condition Diagnoistic Enabled Supply Voltage	= RUN = EOCM Comm Active State = True 9 > V > 16V	6 seconds out of a 10 seconds window Diagnoistic runs every 1000 ms	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Control Module Communication FlexRay 1A Bus Off	U007F	A bus off condition has been detected for the FlexRay 1A Network	This DTC monitors for a FlexRay 1A Bus Off Contition	A failure is detected for 6 counts for 1000 ms	Vehicle Power Mode EOCM Operational Condition Diagnoistic Enabled Supply Voltage	= RUN = EOCM Comm Active State = True 9 > V > 16V	0.2 seconds out of a 20 seconds window Diagnoistic runs every 20 ms	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Engine Control Module "A"	U0100	This DTC is set by the EOCM when signal supervision by the EOCM on the Engine Control Module has failed.	Message is not received from controller for: Message $0C9 Message $0D3 Message $1C3 Message $1C4 Message $1C5 Message $1CA Message $3E9 Message $4F1	 > 0.5 seconds > 0.5 seconds > 1.0 seconds > 1.0 seconds > 1.0 seconds > 1.0 seconds > 5.0 seconds > 40.0 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter K_HSCOM_DIAG_ENABLE	= RUN > 9V = 0 = 1 (True)	See threshold value.	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Transmission Control Module	U0101	This DTC is set by the EOCM when signal supervision by the EOCM on the Tramission Control Module has failed.	Message is not received from controller for: Message $1F5	> 1.0 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter K_HSCOM_DIAG_ENABLE	= RUN > 9V = 0 = 1 (True)	See threshold value.	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Steering Angle Sensor Module	U0126	This DTC is set by the EOCM when signal supervision by the EOCM on the steering angle sensor has failed.	Message is not received from controller for: Message $1E5	> 0.5 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter K_CHASCOM_DIAG_ENABLE	= RUN > 9V = 0 = 1 (True)	See threshold value.	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Body Control Module	U0140	This DTC is set by the EOCM when signal supervision by the EOCM on the Body Control Module has failed.	Message is not received from controller for: Message $0F1 Message $1F1 Message $1E1	 > 0.5 seconds > 1.5 seconds > 5.0 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter K_HSCOM_DIAG_ENABLE	= RUN > 9V = 0 = 1 (True)	See threshold value.	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Restrains Control Module	U0151	This DTC is set by the EOCM when signal supervision by the EOCM on the Restrains Control Module has failed.	Message is not received from controller for: Message $130 Message $140	 > 0.5 seconds > 0.5 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter K_LSCOM_DIAG_ENABLE	= RUN > 9V = 0 = 1 (True)	See threshold value.	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Telematic Control Module	U0198	This DTC is set by the EOCM when signal supervision by the EOCM on the Telematic Control Module has failed.	Message is not received from controller for: Message $260 Message $261 Message $262 Message $263 Message $264 Message $265	 > 10.0 seconds > 10.0 seconds > 10.0 seconds > 10.0 seconds > 10.0 seconds > 10.0 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter K_HSCOM_DIAG_ENABLE	= RUN > 9V = 0 = 1 (True)	See threshold value.	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Left Front Short Range Radar Sensor Module	U0265	This DTC is set by the EOCM when signal supervision by the EOCM on Left Front Short Range Radar Sensor Module has failed.	Message is not received from controller for Flexray Message: Barrier_1 Barrier_2 Barrier_3 Barrier_4 Object_Header Object_Track1 Object_Track2 Object_Track3 Object_Track4 Object_Track5 Object_Track6 Stationary_Track1 Stationary_Track2 Stationary_Track3 Stationary_Track4 Stationary_Track5 Stationary_Track6 Stationary_Track7 Stationary_Track8 Stationary_Track9 Stationary_Track10 Stationary_Track11 Stationary_Track12 Stationary_Track13 Stationary_Track14 Stationary_Track15 Stationary_Track16	For all Signals: > 10.0 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter Flexray Diagnoistics	= RUN > 9V = 0 = 1 (True)	See threshold value	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Right Front Short Range Radar Sensor Module	U0268	This DTC is set by the EOCM when signal supervision by the EOCM on Right Front Short Range Radar Sensor Module has failed.	Message is not received from controller for Flexray Message: Barrier_1 Barrier_2 Barrier_3 Barrier_4 Object_Header Object_Track1 Object_Track2 Object_Track3 Object_Track4 Object_Track5 Object_Track6 Stationary_Track1 Stationary_Track2 Stationary_Track3 Stationary_Track4 Stationary_Track5 Stationary_Track6 Stationary_Track7 Stationary_Track8 Stationary_Track9 Stationary_Track10 Stationary_Track11 Stationary_Track12 Stationary_Track13 Stationary_Track14 Stationary_Track15 Stationary_Track16	For all Signals: > 10.0 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter Flexray Diagnoistics	= RUN > 9V = 0 = 1 (True)	See threshold value	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Front Long Range Radar Sensor Module	U0269	This DTC is set by the EOCM when signal supervision by the EOCM on Front Long Range Radar Sensor Module has failed.	Message is not received from controller for Flexray Message: Barrier_1 Barrier_2 Barrier_3 Barrier_4 Object_Header Object_Track1 Object_Track2 Object_Track3 Object_Track4 Object_Track5 Object_Track6 Stationary_Track1 Stationary_Track2 Stationary_Track3 Stationary_Track4 Stationary_Track5 Stationary_Track6 Stationary_Track7 Stationary_Track8 Stationary_Track9 Stationary_Track10 Stationary_Track11 Stationary_Track12 Stationary_Track13 Stationary_Track14 Stationary_Track15 Stationary_Track16	For all Signals: > 10.0 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter Flexray Diagnoistics	= RUN > 9V = 0 = 1 (True)	See threshold value	Type C, No SVS v

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Left Rear Short Range Radar Sensor Module	U026B	This DTC is set by the EOCM when signal supervision by the EOCM on Left Rear Short Range Radar Sensor Module has failed.	Message is not received from controller for Flexray Message: Barrier_1 Barrier_2 Barrier_3 Barrier_4 Object_Header Object_Track1 Object_Track2 Object_Track3 Object_Track4 Object_Track5 Object_Track6 Stationary_Track1 Stationary_Track2 Stationary_Track3 Stationary_Track4 Stationary_Track5 Stationary_Track6 Stationary_Track7 Stationary_Track8 Stationary_Track9 Stationary_Track10 Stationary_Track11 Stationary_Track12 Stationary_Track13 Stationary_Track14 Stationary_Track15 Stationary_Track16	For all Signals: > 10.0 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter Flexray Diagnoistics	= RUN > 9V = 0 = 1 (True)	See threshold value	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Right Rear Short Range Radar Sensor Module	U026C	This DTC is set by the EOCM when signal supervision by the EOCM on Right Rear Short Range Radar Sensor Module has failed.	Message is not received from controller for Flexray Message: Barrier_1 Barrier_2 Barrier_3 Barrier_4 Object_Header Object_Track1 Object_Track2 Object_Track3 Object_Track4 Object_Track5 Object_Track6 Stationary_Track1 Stationary_Track2 Stationary_Track3 Stationary_Track4 Stationary_Track5 Stationary_Track6 Stationary_Track7 Stationary_Track8 Stationary_Track9 Stationary_Track10 Stationary_Track11 Stationary_Track12 Stationary_Track13 Stationary_Track14 Stationary_Track15 Stationary_Track16	For all Signals: > 10.0 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter Flexray Diagnoistics	= RUN > 9V = 0 = 1 (True)	See threshold value	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Center Rear Short Range Radar Sensor Module	U026D	This DTC is set by the EOCM when signal supervision by the EOCM on Center Rear Short Range Radar Sensor Module has failed.	Message is not received from controller for Flexray Message: Barrier_1 Barrier_2 Barrier_3 Barrier_4 Object_Header Object_Track1 Object_Track2 Object_Track3 Object_Track4 Object_Track5 Object_Track6 Stationary_Track1 Stationary_Track2 Stationary_Track3 Stationary_Track4 Stationary_Track5 Stationary_Track6 Stationary_Track7 Stationary_Track8 Stationary_Track9 Stationary_Track10 Stationary_Track11 Stationary_Track12 Stationary_Track13 Stationary_Track14 Stationary_Track15 Stationary_Track16	For all Signals: > 10.0 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter Flexray Diagnoistics	= RUN > 9V = 0 = 1 (True)	See threshold value	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Invalid Data Received From Anti-Lock Brake System Control Module	U0415	Indicates invalid or out dated data was received from the Brake Control Module	ARC or Checksum error on Chassis Expanson CAN Bus any of the following messages: $17D, $0C1, or $0C5.	6 out of 10 failures of ARC or Checksum on any frame	CE Can Communication Bus Voltage The Diagnostic system is not in a short term/state of reset (Code clear in progress, diagnostic reenable in progress, or end of trip processing in progress)	= Active = 9V < Voltage < 16V	0.06 seconds out of a 0.1 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Invalid Data Received From Restraints Control Module	U0452	Indicates invalid or out dated data was received from the Restrain Control Module	ARC or Checksum error on Chassis Expanson CAN Bus any of the following messages: $130 OR $140	6 out of 10 failures of ARC or Checksum on any frame	CE Can Communication Bus Voltage The Diagnostic system is not in a short term/state of reset (Code clear in progress, diagnostic reenable in progress, or end of trip processing in progress)	= Active = 9V < Voltage < 16V	0.06 seconds out of a 0.1 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Invalid Data Received From Active Safety Control Module 2	U053C	Indicates invalid or out dated data was received from From Active Safety Control Module 2 (EOCM2B)	ARC or Checksum error on the following signals: - High Speed Expansion CAN Bus $320 - Chassis Expansion Can Bus $154 - "EOCM2B_Operational_Status" frame on FlexRay channel A and B	6 out of failures of 10 ARC or Checksum on any frame	Front Object CAN, Chassis Expansion CAN and FlexRay Communication Bus Voltage The Diagnostic system is not in a short term/state of reset (Code clear in progress, diagnostic reenable in progress, or end of trip processing in progress)	= Active = 9V < Voltage < 16V	0.06 seconds out of a 0.1 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Vehicle Dynamics Sensor 1	U1032	This DTC is set by the EOCM when signal supervision by the EOCM on the Vehicle Dynamics Sensor 1 has failed.	Message is not received from controller for: Message $130 Message $132 Message $134	 > 0.5 seconds > 0.5 seconds > 0.5 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter K_FOCOM_DIAG_ENABLE	= RUN > 9V = 0 = 1 (True)	See threshold value.	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Vehicle Dynamics Sensor 2	U1033	This DTC is set by the EOCM when signal supervision by the EOCM on the Vehicle Dynamics Sensor 2 has failed.	Message is not received from controller for: Message $136 Message $138 Message $140	 > 0.5 seconds > 0.5 seconds > 0.5 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter K_FOCOM_DIAG_ENABLE	= RUN > 9V = 0 = 1 (True)	See threshold value.	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Electronic Brake Control Module on Chassis Expansion CAN Bus	U1833	This DTC is set by the EOCM when signal supervision by the EOCM on the Electronic Brake Control Module on Chassis Expansion CAN Bus has failed.	Message is not received from controller for: Message $0C0 Message $0C1 Message $0C5 Message $170 Message $17D Message $348 Message $34A	 > 0.5 seconds > 0.5 seconds > 0.5 seconds > 0.5 seconds > 5.0 seconds > 2.0 seconds > 2.0 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter K_CECOM_DIAG_ENABLE	= RUN > 9V = 0 = 1 (True)	See threshold value.	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Body Control Module on Low Speed CAN Bus	U184A	This DTC is set by the EOCM when signal supervision by the EOCM on the Body Control Module has failed on Low Speed CAN Bus	Vectra Specific Network Management Data from the BCM is missing	Signal not recieved for 6 out of 10 counts	System Power Mode Battery Voltage Manufacturing Enable Counter K_LSCOM_DIAG_ENABLE	= RUN > 9V = 0 = 1 (True)	0.6 seconds out of a 1 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Active Safety Control Module 2 on Chassis Expansion CAN Bus	U18B7	This DTC is set by the EOCM when signal supervision by the EOCM for the Active Safety Control Module 2 on Chassis Expansion CAN Bus has failed.	Message is not received from controller for: Message $154	 > 10.0 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter K_CECOM_DIAG_ENABLE	= RUN > 9V = 0 = 1 (True)	See threshold value.	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Power Steering Control Module on High Speed CAN Bus	U18BA	This DTC is set by the EOCM when signal supervision by the EOCM on the Electronic Power Steering System on High Speed CAN Bus has failed.	Message is not received from controller for: Message $164 Message $1E5	 > 0.5 seconds > 0.5 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter K_CECOM_DIAG_ENABLE	= RUN > 9V = 0 = 1 (True)	See threshold value.	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Power Steering Control Module on Chassis Expansion High Speed CAN Bus	U18BB	This DTC is set by the EOCM when signal supervision by the EOCM on the Electronic Power Steering System on Chassis Expansion Speed CAN Bus has failed.	Message is not received from controller for: Message $164	> 0.5 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter K_CECOM_DIAG_ENABLE	= RUN > 9V = 0 = 1 (True)	See threshold value.	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Electronic Brake Control Module on High Speed CAN Bus	U18C5	This DTC is set by the EOCM when signal supervision by the EOCM on the Electronic Brake Control Module on High Speed CAN Bus has failed.	Message is not received from controller for: Message $1C7 Message $1E9 Message $214 Message $2F9	 > 1.0 seconds > 1.0 seconds > 2.0 seconds > 2.0 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter K_HSCOM_DIAG_ENABLE	= RUN > 9V = 0 = 1 (True)	See threshold value.	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Active Safety Control Module 1 on Flexray Bus	U18CB	This DTC is set by the EOCM when signal supervision by the EOCM2A for the EOCM2B on the Flexray bus has failed.	Message is not received from controller for: Secondary_System_Op_Stat	 > 10.0 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter FlexRay Diagnostics	= RUN > 9V = 0 = 1 (True)	See threshold value.	Type X, No MIL "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Invalid Data Received from Vehicle Dynamic Sensor 1	U250E	This DTC is set by the EOCM when signal supervision by the EOCM on the Vehicle Dynamics Sensor 1 has failed on Front Object CAN Bus	ARC or Checksum error on Front Object Expanson CAN Bus any of the following messages: $130, $132, or $134	6 out of 10 failures of ARC or Checksum on any frame	FO Can Communication Bus Voltage The Diagnostic system is not in a short term/state of reset (Code clear in progress, diagnostic reenable in progress, or end of trip processing in progress)	= Active = 9V < Voltage < 16V	0.06 seconds out of a 0.1 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Invalid Data Received from Vehicle Dynamic Sensor 1	U250F	This DTC is set by the EOCM when signal supervision by the EOCM on the Vehicle Dynamics Sensor 2 has failed on Front Object CAN Bus	ARC or Checksum error on Front Object Expanson CAN Bus any of the following messages: $136, $138, or $140	6 out of 10 failures of ARC or Checksum on any frame	FO Can Communication Bus Voltage The Diagnostic system is not in a short term/state of reset (Code clear in progress, diagnostic reenable in progress, or end of trip processing in progress)	= Active = 9V < Voltage < 16V	0.06 seconds out of a 0.1 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Control Module - Internal Electronic Failure	U3000	This diagnoistic monitors the calculated results from each Komodos processor to ensure they all match. The specific calculations monitored are within LXCR (Lane Change and Centering Control) variables, LMFR (Lane Mapping Fusion) variables, or TSTR (Target Object Selection and Threat Assessment) variables.	A mismatch is key varables within software rings LXCR, LMFR & TSTR, operating in parallel on other Komodos processors (K1P, K2P, K1R, K2P).	20 mismatches out of 20 counts	Diagnostic will run anytime there is sufficient processor throughput to allow execution of background tasks. Diagnoistic Enabled for each software componet (LXCR, LMFR, TSTR)	= Enabled for all software componet	0.2 seconds out of a 0.2 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.

ECU Hardware Performance - Interal Malfunction	B101D	This diagnoistic monitors the internal power supply from the processor to ensure they ar within acceptable range of operation. The voltage level is read by ADC and available through a HWIO interface	Komotdo 1 processor is fed multiple voltages by an onboard power supply. DTC is set if these power supplies are out of range for a predefined sliding window.
			
			Fault set if:
			
			0.75 V Suply
			
			1.3 V Supply
			
			3.3 V Supply
			
			1.425 V Supply
				
				Min. Threshold = 0.70879V, Max. Threshold = 0.79079V
				
				Min. Threshold = 1.25V, Max. Threshold = 1.35V
				
				Min. Threshold = 3.07V, Max. Threshold = 3.43V
				
				Min. Threshold = 1.32V, Max. Threshold = 1.48V
					Diganoistic is Enabled
					
					If (Configuration for Low Voltage Enablement is FALSE), diagnoistic will not consider low voltage condition and run regardless of battery monitor voltage.
					
					If (Configuration for Low Voltage Enablement is TRUE), then the diagnoistic will NOT run when the battery monitor votlage is < 5.5 V
					
					Diagnoistic System is not in State of Reset. This includes:
					-Code Clear in Process
					-End of Trip Processing
					-Diagnoistic Re-enable in Process
						= TRUE	0.15 seconds out of a 0.2 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

			Voltage difference between processors exceeds thresholds	Absolute Difference in Processor Voltage is Greater Than 3.0 V	Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process Diganoistic is Enabled	 = TRUE	3 seconds out of a 6 seconds window	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Brake Pressure Signal Protection Value Rolling Count or Validity Bit Error	C0561	Monitor indicates invalid or out of date brake pressure information was received from the brake controller on High Speed Expansion Bus.	Monitors the brake pressure from the brake system on High Speed Expansion Bus (GM HE $214) for Alive Rolling Counter (ARC) OR Cyclic Redundant;Checksum (CRC) Failure. A failure of either will increase the fail counter.	10 Fail Counters within 16 Samples	Diagnoistic is Enabled HE CAN Communication Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process	= TRUE = Active	0.5 seconds out of a 0.8 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Brake Pedal Inital Travel Achieved Message Counter Incorrect	C1206	Monitor indicates invalid or out of date Brake Pedal Inital Travel Achieved Message was received on High Speed Expansion Bus.	Monitors brake pedal travel on High Speed Expansion Bus (GM HE $0F1) for Alive Rolling Counter (ARC) OR Cyclic Redundant Checksum (CRC) Failure. A failure of either will increase the fail counter.	6 Fail Counters within 10 Samples	Diagnoistic is Enabled HE CAN Communication Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process	= TRUE = Active	0.06 seconds out of a 0.1 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Steering Wheel Angle Sensor Signal Message Counter Incorrect	C1211	Monitor indicates invalid or out of date Steering Angle Sensor Message was received on High Speed and Chassis Expansion Bus. This include both the electronic power steering system, and the secondary column mounted steering angle sensor	Monitors steering angle signal from the electronic power steering sensor on High Speed Expansion Bus (GM HE $1F5) for Alive Rolling Counter (ARC) OR Cyclic Redundant Checksum (CRC) Failure. A failure of either will increase the fail counter.	6 Fail Counters within 10 Samples	Diagnoistic is Enabled HE CAN Communication Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process	= TRUE = Active	0.06 seconds out of a 0.1 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"
			Monitors steering angle signal from the secondary steering angle sensor on Chassis Expansion High Speed Bus (GM CE $1E5) for Alive Rolling Counter (ARC) OR Cyclic Redundant Checksum (CRC) Failure. A failure of either will increase the fail counter.	6 Fail Counters within 10 Samples	Diagnoistic is Enabled CE CAN Communication Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process	= TRUE = Active	0.06 seconds out of a 0.1 seconds window	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Steering Torque Delivered Status Message Counter Incorrect on High Speed CAN Bus	C2A05	Monitor indicates invalid or out of date Steering Torque Message was received on High Speed Bus.	Monitors steering torque on High Speed Bus (GM HS $164) for Alive Rolling Counter (ARC) OR Cyclic Redundant Checksum (CRC) Failure. A failure of either will increase the fail counter.	6 Fail Counters within 10 Samples	Diagnoistic is Enabled HS CAN Communication Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process	= TRUE = Active	0.06 seconds out of a 0.1 seconds window Diagnoistic runs every 10 msec	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Steering Torque Delivered Status Message Counter Incorrect on Chassis High Speed CAN Bus	C2A06	Monitor indicates invalid or out of date Steering Torque Message was received on Chassis High Speed CAN Bus.	Monitors steering torque on Chassis High Speed Bus (GM CE $164) for Alive Rolling Counter (ARC) OR Cyclic Redundant Checksum (CRC) Failure. A failure of either will increase the fail counter.	6 Fail Counters within 10 Samples	Diagnoistic is Enabled CE CAN Communication Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process	= TRUE = Active	0.06 seconds out of a 0.1 seconds window Diagnoistic runs every 10 msec	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
System Voltage Low	P0562	Detects a low 12V system. This diagnostic reports the DTC when battery voltage is low. Monitoring occurs when the engine speed is above a calibrated value.	System voltage high	Battery Voltage <= 9.0 Volts	Run/Crank Diagnostic Engine RPM	= Active = Enabled >= 1,200.0 RPM	0.075 seconds out of a 0.075 seconds window Diagnoistic runs every 100 ms	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Control Module Read Only Memory Performance	P0601	Monitors the performance of the Read Only Memory. This includes the non-volatile boot, code, or calibration memory. A Cyclic redundancy check, and Sinlg Bit ROM check is used. This diagnostic detects if the Compressor HV Voltage sensor has an out of range high circuit fault. If the enable conditions are met and compressor has detected an instantaneous out of range high fault on the sensor, the fail counter will increment. If the calibrated fail count threshold is met before the calibrated sample count, the diagnostic will report a FAIL and if not it will report a PASS. The diagnostic will continue to report as long as the enablement conditions are met.	When the cyclical redundancy check is invalid, the fault flag is set to TRUE and the fail counter increments	Fail Counter > 5		The CRC diagnostic will run anytime there is sufficient processor throughput to allow execution of background task		Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"
			For Single Bit ROM Errors, the fault fault is to TRUE and the fail counter is increased	Fail Counter >5	Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process	Diagnoistic System is not in State of Reset.		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Control Module Not Programmed	P0602	Indicates the EOCM needs to be programmed	This DTC is set via calibration, when KeIDND_b_NoStartCal	 =TRUE	Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process	Diagnoistic System is not in State of Reset.	1 second	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Control Module Long Term Memory Reset	P0603	Data was lost from Non-Volatile Memory. Could be due to failure of flash, NVM memory failure, first time power up if the shut down was interrupted	Non-volatile memory (static or dynamic) checksum failure at Powerup	= TRUE	Controller Initialize	= Complete	Once during start-up	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Control Module Random Access Memory Performance	P0604	If there is a failure in these types in RAM: Secondary, System, Cache, eTUP	Indicates that control module is unable to correctly write and read data to and from: - RAM - Cached RAM - TPU RAM	Detects data read does not match data written >= = 3 counts = 3 counts = 3 counts	Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process	Diagnoistic System is not in State of Reset.	= 2,000.00 mseconds	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"
			Indicates that the primary processor detects a mismatch between the data and dual data is found during RAM updates. Detects a mismatch in data and dual data updates >	= 0.175 seconds				
			Indicates that the primary processor detects an illegal write attempt to protected RAM. Number of illegal writes are >	= 65,534 counts				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Control Module Processor Performance	P0606	Indicates that the EOCM has detected an internal processor integrity fault. These include diagnostics done on the SPI Communication as well as a host of diagnostics for both the primary and secondary processsors.	If any of the following fault occurs: - ROM completion fault (reported to PISR from MPMR) - ALU fault - Configuration Registers fault - Stack fault - Analog to Digital Converter fault - Secondary processor detected Main processor CPU State of Health fault - DMA transfer fault - Missing T0 task’s motor control related duty cycle event fault - Lockstep fault - Secondary processor not running Seed/Key test - Secondary processor fails to take remedial action - Secondary processor received incorrect keys - Main processor detected Seed/Key timeout - Main processor detected seeds received in wrong order		Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process And the Run/Crank Voltages are not low.	Diagnoistic System is not in State of Reset. > 10.0 V	The diagnoistic operates every 12.5 msec	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Control Module Long Term Memory Performance	P062F	This diagnostic runs test for non-volatile memory performance diagnostic. Checks if Assembly Cals are defaulted or non-volatile memory Handler is unable to commit to flash in the future due to memory errors. Typically this means that the controller has run out of flash blocks for storing the data (the total erase/write cycles for each block has been exceeded.	When BINVDM region needs to be copied but cannot be VeMEMR_b_BINVDM_CannotCopy	 = TRUE		To be run during NVM Handler control task	Runs every 100 ms	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"
			When there is an assembly calibration failure reported by HWIO at initialization. Ve MEMD_b_AsyCalFail	 = TRUE		To be run during NVM Handler control task	Runs every 100 ms	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Accelerator Pedal Position Signal Message Counter Incorrect	P100E	Monitor indicates invalid or out of date data acceleator pedal position was received from the engine controller on High Speed Expansion Bus.	Monitors the accelerator pedal position signal from the engine on High Speed Expansion Bus (GM HE $1C4) for Alive Rolling Counter (ARC) OR Cyclic Redundant Checksum (CRC) Failure. A failure of either will increase the fail counter.	6 Fail Counters within 10 Samples	Diagnoistic is Enabled EOCM2 Supply Voltage HE CAN Communication Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process	= TRUE > 9.0 V for > 3 seconds = Active	0.15 seconds out of a 0.25 seconds window Diagnoistic Runs every 25 ms	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Distance Sensing Cruise Control Driver Requested Torque Signal Message Counter Incorrect	P157B	Monitor indicates invalid or out of date EOCM torque feedback was received from the engine controller on High Speed Expansion Bus.	Monitors the EOCM torque feedback from the engine on High Speed Expansion Bus (GM HE $1C4) for Alive Rolling Counter (ARC) OR Cyclic Redundant Checksum (CRC) Failure. A failure of either will increase the fail counter.	6 Fail Counters within 10 Samples	Diagnoistic is Enabled EOCM2 Supply Voltage HE CAN Communication Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process	= TRUE > 9.0 V for > 3 seconds = Active	0.15 seconds out of a 0.25 seconds window Diagnoistic Runs every 25 ms	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Monitor Control Module Serial Peripheral Interface Bus 2	P16E9	This diagnoistic monitors for Interprocessor communications (Between K1, K2, IMX Processor)	When it detects SPI communication fault as indicated between any two micros (K1,K2,IMX) in EOCM2		Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process AND No error parsing Serial Perpheral Interface Data			Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Monitor Control Module Serial Peripheral Interface Bus 1	P16F0	This diagnoistic monitors for Interprocessor communications (Between K1, K2, IMX Processor)	When it detects SPI communication fault as indicated between any two micros (K1,K2,IMX) in EOCM2		Diagnoistic System is not in State of Reset. This includes: -Code Clear in Process -End of Trip Processing -Diagnoistic Re-enable in Process AND No error parsing Serial Perpheral Interface Data			Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Control Module Communication on Chassis Expansion CAN Bus Off	U0077	A bus off condition has been detected for the Chassis Expansion CAN Bus.	This DTC monitors for a BUS off condition on Chassis Expansion High Speed CAN BUs	A failure is detected for 3 counts for 1000 ms	Vehicle Power Mode EOCM Operational Condition Diagnoistic Enabled Supply Voltage	= RUN = EOCM Comm Active State = True 9 > V > 16V	3 seconds out of a 5 seconds window Diagnoistic runs every 1000 ms	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Control Module Communication on Low Speed CAN Bus Off	U0078	A bus off condition has been detected for the Low Speed CAN Bus.	This DTC monitors for a low speed Bus off condition	A failure is detected for 6 counts for 1000 ms	Vehicle Power Mode EOCM Operational Condition Diagnoistic Enabled Supply Voltage	= RUN = EOCM Comm Active State = True 9 > V > 16V	6 seconds out of a 10 seconds window Diagnoistic runs every 1000 ms	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Control Module Communication FlexRay 1B Bus Off	U007F	A bus off condition has been detected for the FlexRay 1B Network	This DTC monitors for a FlexRay 1B Bus Off Contition	A failure is detected for 6 counts for 1000 ms	Vehicle Power Mode EOCM Operational Condition Diagnoistic Enabled Supply Voltage	= RUN = EOCM Comm Active State = True 9 > V > 16V	0.2 seconds out of a 20 seconds window Diagnoistic runs every 20 ms	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Engine Control Module "A"	U0100	This DTC is set by the EOCM when signal supervision by the EOCM on the Engine Control Module has failed.	Message is not received from controller for: Message $0C9 Message $0D3 Message $1C3 Message $1C4 Message $1C5 Message $1CA Message $3E9 Message $4F1	 > 0.5 seconds > 0.5 seconds > 1.0 seconds > 1.0 seconds > 1.0 seconds > 1.0 seconds > 5.0 seconds > 40.0 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter K_HSCOM_DIAG_ENABLE	= RUN > 9V = 0 = 1 (True)	See threshold value.	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Transmission Control Module	U0101	This DTC is set by the EOCM when signal supervision by the EOCM on the Tramission Control Module has failed.	Message is not received from controller for: Message $1F5	> 1.0 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter K_HSCOM_DIAG_ENABLE	= RUN > 9V = 0 = 1 (True)	See threshold value.	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Steering Angle Sensor Module	U0126	This DTC is set by the EOCM when signal supervision by the EOCM on the steering angle sensor has failed.	Message is not received from controller for: Message $1E5	> 0.5 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter K_CHASCOM_DIAG_ENABLE	= RUN > 9V = 0 = 1 (True)	See threshold value.	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Body Control Module	U0140	This DTC is set by the EOCM when signal supervision by the EOCM on the Body Control Module has failed.	Message is not received from controller for: Message $0F1 Message $1F1 Message $1E1	 > 0.5 seconds > 1.5 seconds > 5.0 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter K_HSCOM_DIAG_ENABLE	= RUN > 9V = 0 = 1 (True)	See threshold value.	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Restrains Control Module	U0151	This DTC is set by the EOCM when signal supervision by the EOCM on the Restrains Control Module has failed.	Message is not received from controller for: Message $130 Message $140	 > 0.5 seconds > 0.5 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter K_LSCOM_DIAG_ENABLE	= RUN > 9V = 0 = 1 (True)	See threshold value.	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Left Front Short Range Radar Sensor Module	U0265	This DTC is set by the EOCM when signal supervision by the EOCM on Left Front Short Range Radar Sensor Module has failed.	Message is not received from controller for Flexray Message: Barrier_1 Barrier_2 Barrier_3 Barrier_4 Object_Header Object_Track1 Object_Track2 Object_Track3 Object_Track4 Object_Track5 Object_Track6 Stationary_Track1 Stationary_Track2 Stationary_Track3 Stationary_Track4 Stationary_Track5 Stationary_Track6 Stationary_Track7 Stationary_Track8 Stationary_Track9 Stationary_Track10 Stationary_Track11 Stationary_Track12 Stationary_Track13 Stationary_Track14 Stationary_Track15 Stationary_Track16	For all Signals: > 10.0 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter Flexray Diagnoistics	= RUN > 9V = 0 = 1 (True)	See threshold value	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Right Front Short Range Radar Sensor Module	U0268	This DTC is set by the EOCM when signal supervision by the EOCM on Right Front Short Range Radar Sensor Module has failed.	Message is not received from controller for Flexray Message: Barrier_1 Barrier_2 Barrier_3 Barrier_4 Object_Header Object_Track1 Object_Track2 Object_Track3 Object_Track4 Object_Track5 Object_Track6 Stationary_Track1 Stationary_Track2 Stationary_Track3 Stationary_Track4 Stationary_Track5 Stationary_Track6 Stationary_Track7 Stationary_Track8 Stationary_Track9 Stationary_Track10 Stationary_Track11 Stationary_Track12 Stationary_Track13 Stationary_Track14 Stationary_Track15 Stationary_Track16	For all Signals: > 10.0 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter Flexray Diagnoistics	= RUN > 9V = 0 = 1 (True)	See threshold value	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Front Long Range Radar Sensor Module	U0269	This DTC is set by the EOCM when signal supervision by the EOCM on Front Long Range Radar Sensor Module has failed.	Message is not received from controller for Flexray Message: Barrier_1 Barrier_2 Barrier_3 Barrier_4 Object_Header Object_Track1 Object_Track2 Object_Track3 Object_Track4 Object_Track5 Object_Track6 Stationary_Track1 Stationary_Track2 Stationary_Track3 Stationary_Track4 Stationary_Track5 Stationary_Track6 Stationary_Track7 Stationary_Track8 Stationary_Track9 Stationary_Track10 Stationary_Track11 Stationary_Track12 Stationary_Track13 Stationary_Track14 Stationary_Track15 Stationary_Track16	For all Signals: > 10.0 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter Flexray Diagnoistics	= RUN > 9V = 0 = 1 (True)	See threshold value	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Left Rear Short Range Radar Sensor Module	U026B	This DTC is set by the EOCM when signal supervision by the EOCM on Left Rear Short Range Radar Sensor Module has failed.	Message is not received from controller for Flexray Message: Barrier_1 Barrier_2 Barrier_3 Barrier_4 Object_Header Object_Track1 Object_Track2 Object_Track3 Object_Track4 Object_Track5 Object_Track6 Stationary_Track1 Stationary_Track2 Stationary_Track3 Stationary_Track4 Stationary_Track5 Stationary_Track6 Stationary_Track7 Stationary_Track8 Stationary_Track9 Stationary_Track10 Stationary_Track11 Stationary_Track12 Stationary_Track13 Stationary_Track14 Stationary_Track15 Stationary_Track16	For all Signals: > 10.0 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter Flexray Diagnoistics	= RUN > 9V = 0 = 1 (True)	See threshold value	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Right Rear Short Range Radar Sensor Module	U026C	This DTC is set by the EOCM when signal supervision by the EOCM on Right Rear Short Range Radar Sensor Module has failed.	Message is not received from controller for Flexray Message: Barrier_1 Barrier_2 Barrier_3 Barrier_4 Object_Header Object_Track1 Object_Track2 Object_Track3 Object_Track4 Object_Track5 Object_Track6 Stationary_Track1 Stationary_Track2 Stationary_Track3 Stationary_Track4 Stationary_Track5 Stationary_Track6 Stationary_Track7 Stationary_Track8 Stationary_Track9 Stationary_Track10 Stationary_Track11 Stationary_Track12 Stationary_Track13 Stationary_Track14 Stationary_Track15 Stationary_Track16	For all Signals: > 10.0 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter Flexray Diagnoistics	= RUN > 9V = 0 = 1 (True)	See threshold value	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Center Rear Short Range Radar Sensor Module	U026D	This DTC is set by the EOCM when signal supervision by the EOCM on Center Rear Short Range Radar Sensor Module has failed.	Message is not received from controller for Flexray Message: Barrier_1 Barrier_2 Barrier_3 Barrier_4 Object_Header Object_Track1 Object_Track2 Object_Track3 Object_Track4 Object_Track5 Object_Track6 Stationary_Track1 Stationary_Track2 Stationary_Track3 Stationary_Track4 Stationary_Track5 Stationary_Track6 Stationary_Track7 Stationary_Track8 Stationary_Track9 Stationary_Track10 Stationary_Track11 Stationary_Track12 Stationary_Track13 Stationary_Track14 Stationary_Track15 Stationary_Track16	For all Signals: > 10.0 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter Flexray Diagnoistics	= RUN > 9V = 0 = 1 (True)	See threshold value	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Invalid Data Received From Anti-Lock Brake System Control Module	U0415	Indicates invalid or out dated data was received from the Brake Control Module	ARC or Checksum error on Chassis Expanson CAN Bus any of the following messages: $17D, $0C1, or $0C5.	6 out of 10 failures of ARC or Checksum on any frame	CE Can Communication Bus Voltage The Diagnostic system is not in a short term/state of reset (Code clear in progress, diagnostic reenable in progress, or end of trip processing in progress)	= Active = 9V < Voltage < 16V	0.06 seconds out of a 0.1 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Invalid Data Received From Restraints Control Module	U0452	Indicates invalid or out dated data was received from the Restrain Control Module	ARC or Checksum error on Chassis Expanson CAN Bus any of the following messages: $130 OR $140	6 out of 10 failures of ARC or Checksum on any frame	CE Can Communication Bus Voltage The Diagnostic system is not in a short term/state of reset (Code clear in progress, diagnostic reenable in progress, or end of trip processing in progress)	= Active = 9V < Voltage < 16V	0.06 seconds out of a 0.1 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Invalid Data Received From Active Safety Control Module 1	U053B	Indicates invalid or out dated data was received from From Active Safety Control Module 2 (EOCM2A)	ARC or Checksum error on the following signals: - High Speed Expansion CAN Bus $320 - Chassis Expansion Can Bus $154 - EOCM2B_Operational_Status" frame on FlexRay channel A and B	6 out of failures of 10 ARC or Checksum on any frame	Front Object CAN, Chassis Expansion CAN and FlexRay Communication Bus Voltage The Diagnostic system is not in a short term/state of reset (Code clear in progress, diagnostic reenable in progress, or end of trip processing in progress)	= Active = 9V < Voltage < 16V	0.06 seconds out of a 0.1 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Vehicle Dynamics Sensor 1	U1032	This DTC is set by the EOCM when signal supervision by the EOCM on the Vehicle Dynamics Sensor 1 has failed.	Message is not received from controller for: Message $130 Message $132 Message $134	 > 0.5 seconds > 0.5 seconds > 0.5 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter K_FOCOM_DIAG_ENABLE	= RUN > 9V = 0 = 1 (True)	See threshold value.	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Vehicle Dynamics Sensor 2	U1033	This DTC is set by the EOCM when signal supervision by the EOCM on the Vehicle Dynamics Sensor 2 has failed.	Message is not received from controller for: Message $136 Message $138 Message $140	 > 0.5 seconds > 0.5 seconds > 0.5 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter K_FOCOM_DIAG_ENABLE	= RUN > 9V = 0 = 1 (True)	See threshold value.	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Electronic Brake Control Module on Chassis Expansion CAN Bus	U1833	This DTC is set by the EOCM when signal supervision by the EOCM on the Electronic Brake Control Module on Chassis Expansion CAN Bus has failed.	Message is not received from controller for: Message $0C0 Message $0C1 Message $0C5 Message $170 Message $17D Message $348 Message $34A	 > 0.5 seconds > 0.5 seconds > 0.5 seconds > 0.5 seconds > 5.0 seconds > 2.0 seconds > 2.0 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter K_CECOM_DIAG_ENABLE	= RUN > 9V = 0 = 1 (True)	See threshold value.	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Body Control Module on Low Speed CAN Bus	U184A	This DTC is set by the EOCM when signal supervision by the EOCM on the Body Control Module has failed on Low Speed CAN Bus	Vectra Specific Network Management Data from the BCM is missing	Signal not recieved for 6 out of 10 counts	System Power Mode Battery Voltage Manufacturing Enable Counter K_LSCOM_DIAG_ENABLE	= RUN > 9V = 0 = 1 (True)	0.6 seconds out of a 1 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Active Safety Control Module 1 on Chassis Expansion CAN Bus	U18B6	This DTC is set by the EOCM when signal supervision by the EOCM on the Electronic Power Steering System on High Speed CAN Bus has failed.	Message is not received from controller for: Message $152 Message $315	 > 10.0 seconds > 10.0 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter K_CECOM_DIAG_ENABLE	= RUN > 9V = 0 = 1 (True)	See threshold value.	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Power Steering Control Module on High Speed CAN Bus	U18BA	This DTC is set by the EOCM when signal supervision by the EOCM on the Electronic Power Steering System on High Speed CAN Bus has failed.	Message is not received from controller for: Message $164 Message $1E5	 > 0.5 seconds > 0.5 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter K_CECOM_DIAG_ENABLE	= RUN > 9V = 0 = 1 (True)	See threshold value.	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Power Steering Control Module on Chassis Expansion High Speed CAN Bus	U18BB	This DTC is set by the EOCM when signal supervision by the EOCM on the Electronic Power Steering System on Chassis Expansion Speed CAN Bus has failed.	Message is not received from controller for: Message $164	 > 0.5 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter K_CECOM_DIAG_ENABLE	= RUN > 9V = 0 = 1 (True)	See threshold value.	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Electronic Brake Control Module on High Speed CAN Bus	U18C5	This DTC is set by the EOCM when signal supervision by the EOCM on the Electronic Brake Control Module on High Speed CAN Bus has failed.	Message is not received from controller for: Message $1C7 Message $1E9 Message $214 Message $2F9	 > 1.0 seconds > 1.0 seconds > 2.0 seconds > 2.0 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter K_HSCOM_DIAG_ENABLE	= RUN > 9V = 0 = 1 (True)	See threshold value.	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Lost Communication with Active Safety Control Module 1 on Flexray Bus	U18CA	This DTC is set by the EOCM when signal supervision by the EOCM2A for the EOCM2B on the Flexray bus has failed.	Message is not received from controller for Flexray Message: Secondary_System_Op_Stat	> 10.0 seconds	System Power Mode Battery Voltage Manufacturing Enable Counter FlexRay Diagnostics	= RUN > 9V = 0 = 1 (True)	See threshold value.	Type X, No MIL "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Invalid Data Received from Vehicle Dynamic Sensor 1	U250E	This DTC is set by the EOCM when signal supervision by the EOCM on the Vehicle Dynamics Sensor 1 has failed on Front Object CAN Bus	ARC or Checksum error on Front Object Expanson CAN Bus any of the following messages: $130, $132, or $134	6 out of 10 failures of ARC or Checksum on any frame	FO Can Communication Bus Voltage The Diagnostic system is not in a short term/state of reset (Code clear in progress, diagnostic reenable in progress, or end of trip processing in progress)	= Active = 9V < Voltage < 16V	0.06 seconds out of a 0.1 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Invalid Data Received from Vehicle Dynamic Sensor 1	U250F	This DTC is set by the EOCM when signal supervision by the EOCM on the Vehicle Dynamics Sensor 2 has failed on Front Object CAN Bus	ARC or Checksum error on Front Object Expanson CAN Bus any of the following messages: $136, $138, or $140	6 out of 10 failures of ARC or Checksum on any frame	FO Can Communication Bus Voltage The Diagnostic system is not in a short term/state of reset (Code clear in progress, diagnostic reenable in progress, or end of trip processing in progress)	= Active = 9V < Voltage < 16V	0.06 seconds out of a 0.1 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Control Module - Internal Electronic Failure	U3000	This diagnoistic monitors the calculated results from each Komodos processor to ensure they all match. The specific calculations monitored are within LXCR (Lane Change and Centering Control) variables, LMFR (Lane Mapping Fusion) variables, or TSTR (Target Object Selection and Threat Assessment) variables.	A mismatch is key varables within software rings LXCR, LMFR & TSTR, operating in parallel on other Komodos processors (K1P, K2P, K1R, K2P).	20 mismatches out of 20 counts	Diagnostic will run anytime there is sufficient processor throughput to allow execution of background tasks.		0.2 seconds out of a 0.2 seconds window	Type C, No SVS "Safety Emissions Neutral Diagnostics - Special Type C"
					Diagnoistic Enabled for each software componet (LXCR, LMFR, TSTR)	= Enabled for all software componet		