COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
Internal Control Module Memory	P0601	Check Sum Error	Detection of differences between the result of the checksum calculation executed after IG ON and the correct checksum. If there are differences from the correct checksum value stored in the FLASH ROM, a second calculation is made		Ignition	OFF->ON (only at Transmission computer initialization function)	2 times	2nd
Lost communication with ECM (Engine)	U0100	Frame missing from ECM	No CAN status frame from ECM detected		Diagnostic Service "Disable Norm detected Engine speed Ignition DS Active CAN ²	 A00 rpm once within the driving cycle ON >3 sec TRUE 	4 sec Continuous	2nd
CAN Bus Off Counter Overrun	U0001	CAN controller continuity check	Receiving "BUS OFF" state from CAN controller		Ignition DS Active CAN ²	ON >3 sec TRUE	8 times	2nd
Invalid data from ECM	P1895	Engine Torque signal is indicated invalid	TCM receives Engine Torque Actual Validity	"Invalid"	Diagnostic Service "Disable Norm detected Emergency mode Ignition DS Active CAN ² No DTC set	al Communication" not FALSE ON >3 sec TRUE U0100	4 sec Continuous	2nd
Solenoid S1	P0985 P0986	Circuit continuity check	Short-cut ground Detected signal of the S1 monitor when S1 driver outputs the "ON"signal (12V) Not connected or short-cut Ubatt	"OFF" signal (0V)	DS Active ³ Time after solenoid output changed Emergency mode	TRUE >10 ms FALSE	500 msec Continuous	2nd
			Detected signal of the S1 monitor when S1 driver outputs the "OFF"signal (0V)	"ON" signal (12V)	_			
Solenoid S2	P0973 P0974	Circuit continuity check	Short-cut ground Detected signal of the S2 monitor when S2 driver outputs the "ON"signal (12V) Not connected or short-cut Ubatt	"OFF" signal (0V)	DS Active ³ Time after solenoid output changed Emergency mode	TRUE >10 ms FALSE	500 msec Continuous	2nd
			Detected signal of the S2 monitor when S2 driver outputs the "OFF"signal (0V)	"ON" signal (12V)	-			
Torque Converter Clutch	P0741	Comparison of engine speed and transmission input speed	Converter is slipping with active lock-up on. (Engine Speed - Transmission Input Speed)	> 100rpm	DS_Active ³ Fdetect_inh ⁴ Shift position Time after N-D shifting control ⁹ ends	TRUE FALSE RANGE_D(defined) 8 sec	12 sec Continuous	2nd

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM
					Engine Torque	>= 0 Nm		
					Engine Speed	< 4000 rpm		
					Time after SLU target current (_ir)	3sec		
					>= 1000 mA			
					abs(1- SpeedABS / Transmission	< 10 %		
					Output Speed calculated from			
					Transmission Input Speed)			
					Time after shifting control ⁹ ends	0.5 sec		
					Oil temperature	>= 20°C	-	
					Lock-up	FALSE		
					No DTC set	P2759		
						P0716		
						P0717	_	
						P0721	-	
						P0722		
	P0742		Abs(EngineSpeed - Transmission	< 30 rpm for 2.0 sec continuously	DS Active ³	TRUE	4sec	2nd
			Input Speed)		Fdetect inh ⁴	FALSE	-	
					Shift position	RANGE_D (defined)	-	
					Time after N-D shifting control ⁹ end	1.0 sec	-	
					Time after changing to Shift	8.0 sec		
					position = RANGE_D(defined)			
					Time after shifting control ⁹ ends	0.5 sec		
					EngineTorque_noACC ⁸	>= 60Nm		
					Engine Speed	>1000 rpm	-	
						< 3000 rpm		
					abs(1- SpeedABS / Transmission	<10 %		
					Output Speed calculated from			
					Transmission Input Speed)			
					Oil temperature	>= 20 °C	-	
					Time after SLU pressure = 0 kPa	3sec	-	
					No DTC set	P2759	1	
						P0716	1	
						P0717	1	
						P0721	1	
						P0722		
Pressure solenoid SLU	P2764	Circuit continuity check	Short-cut ground or open		DS Active ³	TRUE	500 ms	2nd
			Current	<23 mA	Emergency mode	FALSE	Continuous	
			(AD	<15)				
					No DTC set	P2763 for 1 sec and over		
	P2762		Terminal short		No Shifting Control ⁹		2,75 sec	2nd
			Error current	> 80 mA	Emergency mode	FALSE	Continuous	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUN
					Oil temperature	> 20°C		
					System voltage change	< 0,2V		
					System voltage	11 -18 V	_	
					SLU Output current target	> 835mA and		
					DS Active ³	constant. TRUE	_	
					DS Active	TROL	_	
					No DTC set	P0711		
						P0712		
						P0713	_	
	P2763		Short-cut Ubatt (+B)		DS Active ³	TRUE	500 ms	2nd
			Measured Current	> 1,333 mA	Emergency mode	FALSE	Continuous	
			(AD	> 1000)				
					No DTC set	P2764 for 1 sec and over		
	P2759		Feed Back Current Stuck(Electrical)		IG voltage	> 10.5 V	1 sec	2nd
			sum ie	>20000	Input AD value	< 1000(1333mA)		
			"ie" is added to "sum_ie" every 10 msec.		Emergency mode	FALSE		
			"ie" : Difference of "ir" and "ifb".		DS_Active ³	TRUE		
			"ir" : Target current					
			"ifb": Feedback current		No DTC set	P2763		
			"sum_ie" is cleared as follows:			P2764		
			(1) or (2) or (3)				_	
			(1): Detection window = FALSE				_	
			(2): -50 mA <= ie <= 50 mA (3): ie value changes from "ie <				_	
			0mA" ("ie >0mA") to "ie >0mA"					
			("ie < 0mA").					
Pressure solenoid SLT	P0962	Circuit continuity check	Short-cut ground or open		DS Active ³	TRUE	500 ms	2nd
	1 0302	Circuit continuity check	Current	<23 mA	Emergency mode	FALSE	Continuous	2110
			(AD	<15)			Continuouo	
			· -		No DTC set	P0963 for 1 sec and over	_	
	P0961		Terminal short		No Shifting Control ⁹		2.75 sec	2nd
			Error current	> 80 mA	Emergency mode	FALSE	Continuous	
					Oil temperature	> 20°C		
					System voltage change	< 0,2V		
					System voltage	11 -18 V	_	
				SLT Output current target	> 835mA and			
					constant.	_		
				DS_Active ³	TRUE	-		
				No DTC set	P0711	-		
						P0712	-	
						P0713	-	
	P0963		Short-cut Ubatt (+B)		DS Active ³	TRUE	500 ms	2nd
			Measured Current	> 1,333 mA	Emergency mode	FALSE	Continuous	
	1		(AD	> 1000)				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM
					No DTC set	P0962 for 1 sec and over		
	P0748		Feed Back Current Stuck(Electrical)		IG voltage	> 10.5 V	1 sec	2nd
			sum_ie	>20000	Input AD value	< 1000(1333mA)		
			"ie" is added to "sum_ie" every 10 msec.		Emergency mode	FALSE		
			"ie" : Difference of "ir" and "ifb".		DS_Active ³	TRUE		
			"ir" : Target current				_	
			"ifb": Feedback current		No DTC set	P0962	_	
			"sum_ie" is cleared as follows:			P0963	_	
			(1) or (2) or (3)				-	
			(1): Detection window = FALSE				-	
			(2): -50 mA <= ie <= 50 mA (3): ie value changes from "ie <				-	
			0mA" ("ie >0mA") to "ie >0mA"					
			("ie < 0mA").					
Timing solenoid SLC1	P0966	Circuit continuity check	Short-cut ground or open		DS Active ³	TRUE	500 msec	2nd
			Current	<23 mA	Emergency mode	FALSE	Continuous	
			(AD	<15)	No DTC set	P0967 for 1 sec and	-	
	P0965		Terminal short		No Shifting Control ⁹	over	2.75 sec	2nd
	F 0303		Error current	> 80 mA	Emergency mode	FALSE	Continuous	2110
					Oil temperature	> 20°C	Contandodo	
					System voltage change	< 0,2V		
					System voltage	11 -18 V		
					SLC1 Output current target	> 835mA and		
					2	constant.	_	
					DS_Active ³	TRUE		
					No DTC set	P0711	_	
						P0712	-	
						P0713		
	P0967		Short-cut Ubatt (+B)		DS Active ³	TRUE	500 msec	2nd
			Measured Current	> 1,333 mA	Emergency mode	FALSE	Continuous	
			(AD	> 1000)	No DTC set	P0966 for 1 sec and	-	
	P0778		Feed Back Current		IG voltage	over > 10.5 V	1 sec	2nd
		Stuck(Electrical)						
			sum ie	>20000	input AD value	< 1000(1333mA)	nA)	
		"ie" is added to "sum_ie" every		Emergency mode	FALSE			
			10 msec.			TRUE	_	
			"ie" : Difference of "ir" and "ifb".		DS_Active ³	INUE		
			"ir" : Target current				1	
			"ifb": Feedback current		No DTC set	P0966		
			"sum ie" is cleared as follows:			P0967	1	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUN
			(1) or (2) or (3)					
			(1): Detection window = FALSE					
			(2): -50 mA <= ie <= 50 mA					
			(3): ie value changes from "ie <0mA" ("ie >0mA") to "ie >0mA"					
			("ie < 0mA").					
Timing solenoid SLC2	P0970	Circuit continuity check	Short-cut ground or open		DS Active ³	TRUE	500 msec	2nd
		on our continuity on ook	Current	<23 mA	Emergency mode	FALSE	Continuous	2110
			(AD	<15)				
					No DTC set	P0971 for 1 sec and		
	P0969		Terminal short		No Shifting Control ⁹	over	2.75 sec	2nd
	. 0000		Error current	> 80 mA	Emergency mode	FALSE	Continuous	2.10
					Oil temperature	> 20°C		
					System voltage change	< 0,2V		
					System voltage	11 -18 V	_	
					SLC2 Output current target	> 835mA and		
						<u>constant.</u> TRUE		
					DS Active ³	IRUE	-	
					No DTC set	P0711	-	
						P0712		
						P0713		
	P0971		Short-cut Ubatt (+B)		DS Active ³	TRUE	500 msec	2nd
			Measured Current	> 1,333 mA	Emergency mode	FALSE	Continuous	
			(AD	> 1000)		D0070 for 4 and and		
					No DTC set	P0970 for 1 sec and over		
	P0798		Feed Back Current		IG voltage	> 10.5 V	1 sec	2nd
			Stuck(Electrical)		ie tellage			
			sum_ie	>20000	Input AD value	< 1000(1333mA)		
			"ie" is added to "sum_ie" every		Emergency mode	FALSE		
			10 msec.		DS Active ³	TRUE	-	
			"ie" : Difference of "ir" and "ifb".					
			"ir" : Target current					
			"ifb": Feedback current		No DTC set	P0970	_	
			"sum_ie" is cleared as follows: (1) or (2) or (3)			P0971	_	
			(1): Detection window = FALSE				-	
			(2): -50 mA <= ie <= 50 mA				1	
			(3): ie value changes from "ie <				1	
			0mA" ("ie >0mA") to "ie >0mA"				1	
			("ie < 0mA").					
Timing solenoid SLC3	P2720	Circuit continuity check	Short-cut ground or open		DS Active ³	TRUE	500 msec	2nd
			Current (AD	<23 mA	Emergency mode	FALSE	Continuous	
				<15)	No DTC set	P2721 for 1 sec and	1	
					10 010 301	1 ZIZI IUI I SEC dIlu	1	
						over		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	
			Error current	> 80 mA	Emergency mode	FALSE	Continuous	
					Oil temperature	> 20°C		
					System voltage change	< 0,2V		
					System voltage	11 -18 V		
					SLC3 Output current target	> 835mA and		
					_	constant.	_	
					DS Active ³	TRUE	-	
					No DTC set	P0711	-	
						P0712		
						P0713		
	P2721		Short-cut Ubatt (+B)		DS_Active ³	TRUE	500 msec	2nd
			Measured Current	> 1,333 mA	Emergency mode	FALSE	Continuous	
			(AD	> 1000)				
					No DTC set	P2720 for 1 sec and		
						over		
	P2716		Feed Back Current Stuck(Electrical)		IG voltage	> 10.5 V	1 sec	2nd
			sum ie	>20000	Input AD value	< 1000(1333mA)		
			"ie" is added to "sum_ie" every	20000	Emergency mode	FALSE	_	
			10 msec.		Line geney meas			
			"ie" : Difference of "ir" and "ifb".		DS_Active ³	TRUE	_	
			"ir" : Target current					
			"ifb": Feedback current		No DTC set	P2720	_	
			"sum_ie" is cleared as follows:		NO DIC Set	P2721	_	
			(1) or (2) or (3)			F 21 21	_	
			(1): Detection window = FALSE				_	
			(2): -50 mA <= ie <= 50 mA					
			(3): ie value changes from "ie <				_	
			0mA" ("ie >0mA") to "ie >0mA"					
			("ie < 0mA").					
Timing solenoid SLB1	P2729	Circuit continuity check	Short-cut ground or open		DS Active ³	TRUE	500 msec	2nd
		-	Current	<23 mA	Emergency mode	FALSE	Continuous	1
			(AD	<15)				
					No DTC set	P2730 for 1 sec and over		
	P2728		Terminal short		No Shifting Control ⁹		2.75 sec	2nd
			Error current	> 80 mA	Emergency mode	FALSE	Continuous	
					Oil temperature	> 20°C		
					System voltage change	< 0,2V		
				System voltage	11 -18 V			
				SLB1 Output current target	> 835mA and			
					constant.	4		
				DS_Active ³	TRUE	-		
					No DTC set	P0711	_	
						P0712		
						P0713		
	P2730		Short-cut Ubatt (+B)		DS Active ³	TRUE	500 msec	2nd

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			Measured Current	> 1,333 mA	Emergency mode	FALSE	Continuous	
			(AD	> 1000)	No DTC set	P2729 for 1 sec and	_	
	P2725		Feed Back Current Stuck(Electrical)		IG voltage	over > 10.5 V	1 sec	2nd
			suck(Electrical) sum_ie "ie" is added to "sum_ie" every 10 msec.	>20000	Input AD value Emergency mode	< 1000(1333mA) FALSE	-	
			"ie" : Difference of "ir" and "ifb". "ir" : Target current		DS_Active ³	TRUE	-	
			"ifb": Feedback current "sum_ie" is cleared as follows: (1) or (2) or (3)		No DTC set	P2729 P2730	-	
			(1): Detection window = FALSE (2): -50 mA <= ie <= 50 mA (3): ie value changes from "ie <				-	
			0mA" ("ie >0mA") to "ie >0mA" ("ie < 0mA").					
iear error, hydraulic fault F	P0729	Rationality	Calculation of actual gear ratio for 6th gear is not correct. (Condition A or Condition B)		No Shifting Control ⁹ Not in neutral control ¹⁰		12 sec Continuous	2nd
			Condition A abs(1-GRCurrent/GRExpected) Condition B	> 20%	Not oarage shifting control ¹¹ (N-D of Throttle (A only) Transmission Output Speed (A)	or N-R) >= 10% >= 500rpm	-	
			abs(1-Gear Ratio Current/ 4th Gear Ratio)	<4%	Transmission Output Speed (B)	>=250rpm	-	
			or abs(1-Gear Ratio Current/ 5th	<4%	Current gear Engine Torque_noACC ⁸ (B only)	6 >=80Nm	-	
			Gear Ratio)		DS_Active ³ Fdetect Inh ⁴	TRUE FALSE	-	
					Shift position Time after changing to Shift	RANGE_D(defined) 8.0 sec	-	
					position = RANGE_D(defined) Time after garage shift control ¹¹ end	1.0 sec	_	
					Time after neutral control ¹⁰ end Time after shifting control ⁹ end Oil temperature	1.0 sec 0.5 sec >= 20°C	-	
				Brake abs(1-SpeedABS/Trans. Output Speed)	OFF < 10%			
					QS_AirSuction ⁵	FALSE		
					No DTC set	P0703 P0716	-	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
						P0717		
						P0721		
	D0721	Rationality	Calculation of actual gear ratio for		Not garage shifting control ¹¹ (N-D c	P0722	12 sec	2nd
	10/51	rationality	1st gear is not correct.		Not in neutral control ¹⁰	n n-rk)	Continuous	2110
							Continuous	
			abo(1, ODO) mont/ and	< 4%	No Shifting Control ⁹			
			abs(1 - GRCurrent/ 2nd GearRatio)	< 4%	Current Gear	GEAR_1ST or GEAR 1STEB		
			or		Transmission Output Speed	1350 rpm >= outRpm		
			-		······································	>= 250 rpm		
			abs(1 - GRCurrent/ 3rd	< 4%	EngineTorque_noACC ⁸	>=100Nm		
			GearRatio)			(GEAR 1ST)		
1			or		EngineTorque_noACC ⁸	>= 80 Nm		
			abs(1 - GRCurrent/ 4th GearRatio)	< 4%	DS_Active ³	(GEAR 1STEB) TRUE		
					Fdetect_Inh ⁴	FALSE	-	
					Shift position	RANGE_D(defined)	-	
					Time after changing to Shift position = RANGE D(defined)	8.0 sec		
					Time after garage shift control ¹¹ end	1.0 sec		
					Time after neutral control ¹⁰ end	1.0 sec		
					Time after shifting control ⁹ end	0.5 sec		
					Oil temperature	>= 20°C		
					Brake abs(1-SpeedABS/Trans.Output	OFF < 10%	-	
					Speed)	< 1078		
					QS_AirSuction ⁵	FALSE		
					No DTC set	P0703		
1						P0703 P0716		
1						P0717		
1						P0721		
					-	P0722		
	P0732	Rationality	Calculation of actual gear ratio for		No Shifting Control ⁹		12 sec	2nd
			2nd gear is not correct.		Not in neutral control ¹⁰		Continuous	
			Condition A		Not garage shifting control ¹¹ (N-D c			
1			abs(1-GRCurrent/GRExpected)	>20%	Throttle (A only)	>= 10%		
		C	Condition B		Transmission Output Speed (A)	>= 500rpm		
			abs(1-Gear Ratio Current/ 1st Gear Ratio)	<4%	Transmission Output Speed (B)	>=250rpm		
			or		Current gear	2		
			abs(1-Gear Ratio Current/ 3rd Gear Ratio)	<4%	Engine Torque_noACC ⁸ (B only)	>=80Nm		
			or		DS Active ³	TRUE	-	
			abs(1-Gear Ratio Current/ 4th Gear Ratio)	<4%	Fdetect_Inh ⁴	FALSE		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			or		Shift position	RANGE D(defined)		
			abs(1-Gear Ratio Current/ 6th	<4%	Time after changing to Shift	8.0 sec	-	
			Gear Ratio)		position = RANGE D(defined)		-	
					Time after garage shift control ¹¹ end	1.0 sec		
					Time after neutral control ¹⁰ end	1.0 sec		
					Time after shifting control ⁹ end	0.5 sec	-	
					Oil temperature	>= 20°C		
					Brake	OFF	_	
					abs(1-SpeedABS/Trans. Output Speed)	< 10%		
					QS_AirSuction ⁵	FALSE		
l					No DTC set	P0703	1	
						P0716		
						P0717	-	
						P0721	-	
	D 0700	Deffectell			0	P0722	10	0.1
	P0733	Rationality	Calculation of actual gear ratio for		No Shifting Control ⁹			2nd
			3rd gear is not correct. (Condition A or Condition B)		Not in neutral control ¹⁰		Continuous	
			Condition A		Not garage shifting control ¹¹ (N-D o	or N-R)		
				>20%	Throttle (A only)	>= 10%		
			Condition B		Transmission Output Speed (A)	>= 500rpm		
			abs(1-Gear Ratio Current/ 1st Gear Ratio)	<4%	Transmission Output Speed (B)	>=250rpm	-	
			or		Current gear	3		
			abs(1-Gear Ratio Current/ 4th Gear Ratio)	<4%	Engine Torque_noACC ⁸ (B only)	>=80Nm		
			or		DS Active ³	TRUE		
			abs(1-Gear Ratio Current/ 5th Gear Ratio)	<4%	Fdetect_Inh ⁴	FALSE		
					Shift position	RANGE_D(defined)		
					Time after changing to Shift position = RANGE D(defined)	8.0 sec	-	
					Time after garage shift control ¹¹ end	1.0 sec	-	
					Time after neutral control ¹⁰ end	1.0 sec	1	
					Time after shifting control ⁹ end	0.5 sec	1	
					Oil temperature	>= 20°C]	
					Brake	OFF	4	
				abs(1-SpeedABS/Trans. Output Speed)	< 10%			
					QS AirSuction ⁵	FALSE	1	
						D0702	-	
					No DTC set	P0703 P0716		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
						P0721	_	
	D0704	Detionality				P0722	40	2nd
	P0734	Rationality	Calculation of actual gear ratio for 4th gear is not correct. (Condition		No Shifting Control ⁹		12 sec	∠na
			A or Condition B)		Not in neutral control ¹⁰		Continuous	
			Condition A		Not garage shifting control ¹¹ (N-D o	or N-R)		
			abs(1-GRCurrent/GRExpected)	>20%	Throttle (A only)	>= 10%		
			Condition B		Transmission Output Speed (A)	>= 500rpm		
			abs(1-Gear Ratio Current/ 1st Gear Ratio)	<4%	Transmission Output Speed (B)	>=250rpm	-	
			or		Current gear	4		
			abs(1-Gear Ratio Current/ 5th Gear Ratio)	<4%	Engine Torque_noACC ⁸ (B only)	>=80Nm		
			or		DS Active ³	TRUE		
			abs(1-Gear Ratio Current/ 6th Gear Ratio)	<4%	Fdetect_Inh⁴	FALSE		
					Shift position	RANGE_D(defined)		
					Time after changing to Shift	8.0 sec		
					position = RANGE D(defined)	1.0	_	
					Time after garage shift control ¹¹ end	1.0 sec	_	
					Time after neutral control ¹⁰ end	1.0 sec		
					Time after shifting control ⁹ end	0.5 sec		
					Oil temperature	>= 20°C		
					Brake	OFF	_	
					abs(1-SpeedABS/Trans. Output	< 10%		
					Speed) QS_AirSuction ⁵	FALSE	-	
					QS_AIISUCIION	I ALOL		
					No DTC set	P0703	_	
						P0705	_	
						P0717	-	
						P0721		
						P0722		
	P0735	Rationality	Calculation of actual gear ratio for		No Shifting Control ⁹		12 sec	2nd
		5th gear is not correct. (Condition A or Condition B)		Not in neutral control ¹⁰		Continuous		
			Condition A		Not garage shifting control ¹¹ (N-D o	or N-R)		
			abs(1-GRCurrent/GRExpected)	>20%	Throttle (A only)	>= 10%		
			Condition B		Transmission Output Speed (A)	>= 500rpm		
			abs(1-Gear Ratio Current/ 4th Gear Ratio)	<4%	Transmission Output Speed (B)	>=250rpm		
			or		Current gear	5		
			abs(1-Gear Ratio Current/ 6th Gear Ratio)	<4%	Engine Torque_noACC ⁸ (B only)	>=80Nm		
					DS_Active ³	TRUE		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Fdetect_Inh ⁴	FALSE		
					 Shift position	RANGE D(defined)	-	
					Time after changing to Shift	8.0 sec		
					position = RANGE D(defined)		-	
					Time after garage shift control ¹¹	1.0 sec		
					end			
					Time after neutral control ¹⁰ end	1.0 sec		
					Time after shifting control ⁹ end	0.5 sec		
					Oil temperature	>= 20°C	-	
					Brake	OFF		
					abs(1-SpeedABS/Trans. Output	< 10%		
					Speed)			
					QS_AirSuction ⁵	FALSE		
					No DTC set	P0703	-	
						P0716		
					_	P0717	-	
						P0721 P0722		
Engine speed signal	P0725	Signal from ECM stated as	Engine Speed Validity	"Invalid"	Diagnostic Service "Disable Norma		4 sec	2nd
		unreliable			detected		1000	2110
					Ignition	ON >3 sec	Continuous	
					DS_Active_CAN ²	TRUE		
					Emergency mode	FALSE		
					No DTC set	U0100		
Transmission Range	P0707	Voltage low	POS1 Voltage or POS2 Voltage	< 0.127 (AD value=26) V	Battery voltage	6.0 V < Battery Voltage	200ms	2nd
Sensor Circuit					Diamagia Canting made	< 18 V		
	P0708	Voltage high	Input POS1 Voltage or Input	> 4.87 (AD value=997)V	Diagnosis Service mode Diagnosis Service mode	FALSE FALSE	200 ms	2nd
	FU/U0	Voltage nigh	POS2 Voltage	> 4.67 (AD value=997)v	Battery voltage	6.0 V < Battery Voltage		2110
			1 002 Voltage		Ballery vollage	< 18 V	Continuous	
	P0706	Signal out of range	Input POS1 Voltage + Input	<= 5V -0.29V or >= 5V +0.29V	Diagnosis Service mode	FALSE	200 ms	2nd
			POS2 Voltage		Battery voltage	6.0 V < Battery Voltage	Continuous	
						< 18 V		
Output speed sensor circui	P0722		No pulse		Not in neutral control ¹⁰		Dependent of	2nd
			Number of pulses from		No Shifting Control ⁹		Speed	
			Transmission Output Speed		Not garage shifting control ¹¹ (N-D)			
			Sensor	0				
			Number of pulses from	16	DS Active ³	TRUE	1	
			Transmission Input Speed Sensor		Emergency mode	FALSE	1	
			P P		Shift position	RANGE D(defined)		
					Time since change from P,R or N		1	
					range to others if vehicle speed			
					>= 66km/h and oil temperature			
	1				>20°C	2.5sec		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM
					Time since change from P,R or N range to others if vehicle speed <			
					66km/h and oil temperature <=			
					20°C	10sec		
					SpeedABS	> 300 rpm	-	
					No DTC set	P0501		
						P0706		
						P0707		
						P0708	-	
						P0716 P0717		
						P0748	-	
						P0778	-	
						P0798		
						P0961		
						P0962		
						P0963		
						P0965	-	
						P0966 P0967		
						P0967 P0969	-	
						P0909	-	
						P0971		
						P0973		
						P0974		
						P0985		
						P0986		
						P1895 P2159	-	
						P2716	-	
						P2719	-	
						P2720		
						P2721		
						P2725		
						P2728		
						P2729	-	
						P2730 U0001		
						U0121	-	
	P0721		Range/Performance, wrong pulse		Not garage shifting control ¹¹ (N-D)		10 sec	2nd
			1-SpeedABS/Transmission	> 15 %	No Shifting Control ⁹		1	
			Output Speed		CurrentGear	>= 2ND	1	
					1-SpeedABS/ Trans. Output		1	
					Speed	< 5%		
					Time after shifting control	8 sec	1	
							1	
					Time after changing to Position	8 sec		
	1				Shift position	RANGE_D(defined)		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Engine speed	> 400rpm		
					Speed ABS	>= 30 km/h		
					Spinning ⁶	FALSE		
					DS_Active ³	TRUE	_	
					DS_Active			
					Emergency mode	FALSE	-	
					No DTC set	P0501	-	
						P0706		
						P0707		
						P0708		
						P0711	_	
						P0712		
						P0713	_	
						P0725	_	
						P0741	_	
						P0742		
						P0748		
						P0778		
						P0798		
						P0961		
						P0962		
						P0963	_	
						P0965	_	
						P0966		
						P0967		
						P0969		
						P0970	_	
						P0971		
						P0973	_	
						P0974		
						P0985	_	
						P0986		
						P1820		
						P1895		
						P2159		
						P2716	1	
						P2719	1	
						P2720	1	
						P2721	1	
						P2725	1	
						P2728	1	
						P2729	1	
						P2730	1	
						P2759	1	
						P2762	1	
						P2763	1	
						P2764	1	
						U0001	1	
						U0121	1	
ransmission input speed	P0717		No pulse		No Shifting Control ⁹	-	Dependent of	2nd

persor Not putess from Transmission Ingu Speed Semicor DS, Active ³ TRUE No of putess from Transmission Ingu Speed Semicor 0 DS, Active ³ TRUE Output Speed Semicor 0 DS, Active ³ TRUE Output Speed Semicor 0 DS, Active ³ TRUE Output Speed Semicor 24 Energency mode FASE Output Speed Semicor 24 Transmission (Output Speed Semicor 26 Time since change from P.R or N range to others Verifiels speed >= 68km hand ol temperature =20°C 200 gae 20°C 2.56cc Time since change from P.R or N range to others Verifiels speed 20°C 106cc 10600 10000 10000 100000 20°C 106cc 100000 20°C 106cc 100000 100000 1000000 1000000 20°C 106cc 100000 100000 10000000 1000000 100000 10000000 1000000 1000000 10000000000 1000000 1000000000000000000000000000000000000	COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
P2725 P2728	sensor			Input Speed Sensor No of pulses from Transmission		DS_Active ³ Emergency mode Trans. Output Speed * CurrentGearRatio Shift position CurrentGear Time since change from P,R or N range to others if vehicle speed >= 66km/h and oil temperature >20°C No DTC set	TRUE FALSE > 600 rpm RANGE_D(defined) >= 2nd gear 2.5sec 2.5sec 10sec P0501 P0706 P0721 P0722 P0748 P0778 P0963 P0965 P0966 P0967 P0968 P0971 P0973 P0974 P0985 P0986 P1895 P2159 P2716 P2720 P2721 P2725	Speed	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
						U0121		
	P0716		Wrong Pulse		No Shifting Control ⁹		10 sec	2nd
			1-speedABS/Transmission Input	> 15 %	Not garage shifting control ¹¹ (N-D)			
			Speed		1-SpeedABS/Trans. Output			
					Speed	< 5 %		
					1-SpeedABS/Engine Speed Time after shifting control	< 5 % 8 sec		
					Time after changing to Position	8 sec		
					switch = RANGE D	0.300		
					Gear	>= 2ND		
						other than P and N and		
					Range	R		
					Engine speed	> 400rpm FALSE		
					Spinning ⁶	TRUE		
					DS_Active ³			
					LockUpActive Emergency mode	TRUE FALSE		
					Speed ABS	> 30 km/h		
					No DTC set	U0001		
						P0501		
						P0706 P0707		
						P0708		
						P0711		
						P0712		
						P0713		
						P0721		
						P0722 P0725		
						P0723		
						P0742		
						P0748		
						P0778		
						P0798		
						P0961 P0962		
						P0963		
						P0965		
						P0966		
						P0967		
						P0969		
						P0970 P0971		
						P0973		
						P0974		
						P0985		
						P0986		
						P1820		
						P1895		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
						P2159		
						P2716		
						P2719		
						P2720		
						P2721 P2725		
						P2725 P2728		
						P2729		
						P2730		
						P2759		
						P2762		
						P2763	-	
						P2764		
						U0121		
Transmission oil	P0711	Rationality	Oil temperature change less than	10 (AD value)	Oil temp	< 20°C	10 min	2nd
temperature sensor			- · · · · · · · · · · · · · · · · · · ·		DS Active ³	TRUE		
					AD value of oil temperature	> 10		
					AD value of oil temperature	< 1000		
					Emergency mode	FALSE	-	
					Range	≠ (P, R or N)		
					Vehicle Speed	> 40km/h once		
					No DTC set	P0706		
						P0707		
						P0708	1	
	P0712	Circuit continuity check	Short-cut ground		DS Active ³	TRUE	300sec	2nd
	-		AD value of Oil Temp	< 10 (More than 200 °C).		-		-
	P0713	Circuit continuity check	Short-cut Ubat or open circuit		DS Active ³	TRUE	12 sec	2nd
			AD value of Oil temperature	> 1000 (-43 °C)	DriveTime	> 10 min		
Invalid signal from ECM	P1820	Accelerator pedal position signal is invalid	Accelerator Position Validity	"Invalid"	Diagnostic Service "Disable Normal Communication" not detected		4 sec	2nd
					Ignition	ON > 3sec	-	
					DS_Active_CAN ²	TRUE		
					Emergency mode	FALSE		
						TALOL	-	
					No DTC set	U0100		
Neutral condition	P1701		Step 1:		Not garage shifting control ¹¹ (N-D c		Step1:	2nd
			abs(Engine Speed - Transmission			((N- (X)	Step1.	
			Input Speed)	-	Not in neutral control ¹⁰		at D range:	
			Transmission Input Speed (at D	> Transmission Output Speed x			3.3 sec if (0 <= X	
			range)		No Shifting Control ⁹		<= 1500)	
				+400rpm	DS_Active ³	TRUE		
			Transmission Input Speed (at R	> Transmission Output Speed x		FALSE (except P0966)		
			range)	(reverse gear ratio at RANGE_R)	Fdetect_Inh ⁴			
				+1000rpm			1.3 sec if (1501 <=	
			Step 2:		Oil temperature	>0°C	X <= 3000)	
			Transmission Input Speed	<200rpm	Shift position	RANGE_D or		
			Engine Speed	>600rpm		RANGE_R (defined)	0.8 sec if (3001 <=	
					Time after changing to shift	1.0sec	X)	
	1				position = RANGE D or			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Time after garage shifting end	1.0sec	at R range:	
					Time after neutral control end	1.0sec	1.8 sec if (0 <= Y	
					Time after shifting control end	0.5sec	<= 1500)	
					Transmission Output Speed	<=500rpm		
					SpeedABS	<=500rpm	1.3 sec if (1501 <=	
					Lockup	FALSE	Y <= 3000)	
					Current gear	1 or 2 or 3 or 4		
					QS_AirSuction ⁵	FALSE	0.8 sec if (3001 <=	
							Y)	
					No DTC set	P0716		
						P0717		
						P0721	X = inRpm -	
						P0722	outRpm X (1st	
							gear ratio at	
							RANGE_D)	
							Y = inRpm -	
							outRpm X (reverse	
							gear ratio at	
							RANGE_R)	
							Step 2:	
							0.1sec	
Neutral control	P1704				DS_Active ³	TRUE	0.3sec	2nd
			C1 apply control	(T))) (Q)) (RANGE_D(defined)	0.0000	2110
			Transmission Input Speed	>= (Transmission Input Speed at	Shift position		-	
				apply start + 400rpm +	Fdetect_Inh ⁴	FALSE	-	
			C1 pressure	>=3.0kg/cm ²	Oil temperature	>=10°C	_	
					QS_AirSuction ⁵	FALSE	_	
						D0710	_	
					No DTC set	P0716	-	
						P0717	-	
						P0721 P0722	_	
						1 0/22		
¹⁾ Q_NORMAL								
Q_NORMAL means that no	failure is	detected						
²⁾ DS_Active_CAN								
DS_Active_CAN = TRUE w detection is fulfilled for 2.0 s	hen the sta	art condition for CAN failure lously.						
		ermission condition for CAN						
failure detection is not fulfille	ed.							
Start Condition for CAN fa	ailure dete	ection:						
gnition ON and	-							
10.2V < Battery Voltage <	-			1	1	1	1	1

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
Not in service mode and	-							
eading EEPROM finish								
Permission condition for C	AN failur	e detection:						
.0V < Battery Voltage < 18V and								
9.0V < Battery Voltage < 189 Not in service mode	v and							
NOT IN SERVICE MODE								
³⁾ DS_Active								
DS_Active = TRUE when the fulfilled for 2.0 sec continuou		dition for failure detection is						
DS_Active = FALSE when the detection is not fulfilled.		sion condition for failure						
Start Condition for failure	detection	:						
Ignition ON and								
10.2V < Battery Voltage < 18								
Not in service mode and Reading EEPROM finish a	and							
Egrpm > 400rpm and Egrpm		RMAL ¹						
Permission condition for fa	ailure det	ection:						
Ignition ON and								
9.0V < Battery Voltage < 18	/ and							
Not in service mode and								
Earom > 400rom and Earom	= Q NOF	RMAL ¹						
⁴⁾ Fdetech_Inh = TRUE if:								
In Emergency mode or								
spinning ⁶ = TRUE or								
within 10.0 sec after spinning	g detection	n end or 6, P0966, P0967, P0970, P0971, P	0700 00704 0700 0700 00000 1					
		6, P0966, P0967, P0970, P0971, P P0562, P0563, U0001, U0100, P1						
5)QS_AirSuction : Quick sto failure misdetection for Air st								
6) Spinning								
Spinning = 1 if Transversal a signal)	occeleratio	n > 0.7G (input from ABS						
Spinning = 0 if Transversal a Continuously. (input from AE		n parameter < 0.7G for 2sec.						
7)								
⁷⁾ Wheel spin condition	-							
(1) 300 rpm < outRpm < 300	0rpm							

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
(2) Egtorque_noACC > 0Nm								
(3) ABS (vehicle front wheel average speed) > 5.0 km/h	s average	speed - vehicle rear wheels						
(4) Throttle > 70 % (5) outRpmSpeed < -20 rpm	/sec							
{(1)and(2)and(3)}or{ (1)and(msec	4)and(5)}	continuously detected for 300						
After that, Wheel spin condit	ion = TRL	JE continuously 10000 msec						
⁸⁾ EngineTorque_noACC								
Engine output torque, accele	eration ine	rtia torque not included.						
		e transmission is in between applied pressure has reached						
¹⁰⁾ "Neutral Control" Neutral Control is activated i range D with the brake press released.								
¹¹⁾ "Garage Shifting"	¹¹⁾ "Garage Shifting"							
"Garage Shifting Control" is activated when the range selector changes from N to D or R until appropriate Gear Ratio is detected.								