Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		reshold /alue	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
Transmission Control Module (TCM)	P0601	Transmission Electro- Hydraulic Control Module Read Only Memory	Incorrect program/calibrations checksum	= TRUE	Boolean			>= 5 Fail Counts	One Trip
					Disable Conditions:	MIL not Illuminated for DTC's:			
Transmission Control Module (TCM)	P0603	Transmission Electro- Hydraulic Control Module Long Term Memory Reset	Non-volatile memory (static or dynamic) checksum failure at Powerup	= TRUE	Boolean			Runs Continously	One Trip
					Disable Conditions:	MIL not Illuminated for DTC's:			
Transmission Control Module (TCM)	P0604	Transmission Electro- Hydraulic Control Module Random Access Memory	RAM Read/Write Failure (Single Word)	= TRUE	Boolean			>= 5 Fail Counts = 16 Sample Counts	One Trip
					Disable Conditions:	MIL not Illuminated for DTC's:			
Transmission Control Module (TCM)	P062F	Transmission Electro- Hydraulic Control Module Long Term Memory Performance	TCM Non-Volatile Memory bit Incorrect flag at Powerdown	= TRUE	Boolean			Runs Continously	One Trip
					Disable Conditions:	MIL not Illuminated for DTC's:			

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		eshold alue	Secondary Malfunction		Enable Conditions			Tiı Requ		Mil Illum.
Transmission Control Module (TCM)	P0634	Transmission Electro- Hydraulic Control Module Internal Temperature Too High	Fail Case 1 Substrate Temperature	>= 142.10150	5 ℃					>=	5	Fail Time (Sec)	One Trip
			Fail Case Substrate Temperature		°C					>=	2	Fail Time (Sec)	
			Ignition Voltage	>= 18	Volts								ľ
			Note: either fail case can set the DTC										
						Ignition Voltage Lo Ignition Voltage Hi Substrate Temp Lo Substrate Temp Hi		8.59961 31.999 0 170	Volts Volts °C °C				
						Substrate Temp Between Temp Range for Time		0.25	Sec				
						P0634 Status is	¥	Test Failed This Key On or Fault Active					
					Disable Conditions:		TCM: None ECM: None						
High Side Driver 1	P0658	Actuator Supply Voltage Circuit Low	The HWIO reports a low voltage (open or ground short) error flag	= TRUE	Boolean					>=	4	Fail Counts	One Trip
										out of	6	Sample Counts	
						P0658 Status is not	=	Test Failed This Key On or Fault					
						High Side Driver 1 On	=	Active True	Boolean				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			me uired	Mil Illum.
				Disable Conditions:	DTC's:	TCM: None ECM: None				
Transmission Control Module (TCM)	P0667	TCM Internal Temp (substrate) Sensor Circuit Range/Performance	If transmission oil temp to substrate temp Δ If TCM substrate temp to power up temp Δ	supporting documents Refer to Table 20 in						Two Trips
			Both conditions above required to increment fail counter Note: table reference temp = to the median temp of trans oil temp, substrate temp and				>= Out of	3000 3750	Fail Counts (100ms loop) Sample Counts	
			power up temp. Non-continuous (intermittent) fail conditions will delay resetting fail counter until				>=	700	(100ms loop) Pass Counts (100ms loop)	-
							Out of	875	Sample Counts (100ms loop)	
					Engine Torque Signal Valid Accelerator Position Signal Valid Ignition Voltage to Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for	= TRUE Boolean = TRUE Boolean >= 8.59961 Volts <= 31.999 Volts >= 400 RPM <= 7500 RPM >= 5 Sec				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions		Time Required	Mil Illum.
					Brake torque active	=	FALSE			
					Below describes the brake torque entry criteria					
					Engine Torque Throttle		90 30.0003	N*m Pct		
					Transmission Input Speed	<=	200	RPM		
					Vehicle Speed Transmission Range	¥	8 Park	Kph		
					Transmission Range PTO		Neutral Not			
					Set Brake Torque Active TRUE if above conditions		Active 7	sec		
					are met for: Below describes the brake torque exit criteria					_
					Brake torque exit criteria Brake torque entry criteria	_	Not Met			
							Clutch Hydrauli			
					Clutch hydraulic pressure	¥	c Air Purge Event			
					Clutch used to exit brake torque active		CeTFTD _e_C3_ RatlEnbl			
					The above clutch pressure is greater than this value for one loop	>=	600	kpa		
					Set Brake Torque Active FALSE if above	>=	20	Sec		
					conditions are met for:		Test			
					P0667 Status is	¥	Failed This Key On or Fault			
							Active			

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0658, P0668, P0669, P06AD, P06AE, P0716, P0712, P0713, P0717, P0722, P0723, P0962, P0963, P0966, P0967, P0970, P0971, P215C, P2720, P2721, P2729, P2730 ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304,		
Transmission Control Module (TCM)	P0668	TCM internal temperature (substrate) thermistor failed at a low voltge	Type of Sensor Used If TCM Substrate Temperature Sensor = Direct Proportional and Temp If TCM Substrate Temperature Sensor = Indirect Proportional and Temp Either condition above will satisfy the fail conditions	ctProp		P0305. P0306. P0307. P0308. >= 8.59961 Volts <= 31.999 Volts >= 400 RPM <= 7500 RPM >= 5 Sec Test Failed This Kay	>= 60 Fail Timer (Sec)	Two Trips

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thresho Value		Secondary Malfunction		Enable Conditions			Tir Requ		Mil Illum.
						Disable Conditions:	DTC's:							
Transmission Control Module (TCM)	P0669	TCM internal temperature (substrate) thermistor failed at a high voltage	Type of Sensor Used If TCM Substrate Temperature Sensor = Direct Proportional and Temp If TCM Substrate Temperature Sensor = Indirect Proportional and	ctPi	eDire rop .9 %									Two Trips
			Temp Either condition above will satisfy the fail conditions				Ignition Voltage Lo Ignition Voltage Hi	>= <=	8.59961 31.999	Volts Volts	>=	60	Fail Timer (Sec)	
							Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for	>=	400 7500 5	RPM RPM Sec				
							P0669 Status is	¥	Test Failed This Key On or Fault Active					
							For Hybrids, below conditions must also be met Estimated Motor Power		0	kW				
							Loss Estimated Motor Power Loss greater than limit for time Lost Communication with	>=	0	Sec				
							Hybrid Processor Control Module Estimated Motor Power Loss Fault	=	FALSE FALSE					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions		Tir Requ		Mil Illum.
				Disable Conditions:	DTC's:	TCM: P0716, P0717, P0722, P0723 ECM: None				
Transmission Control Module (TCM)	P06AC	TCM Power-up Temp Sensor Circuit Range/Performance	If TCM power-up temp to substrate temp Δ If transmission oil temp to power up temp Δ	supporting documents Refer to Table 18 in co						Two Trips
			Both conditions above required to increment fail counter Note: table reference temp = to the median temp of trans oil temp, substrate temp and power up temp. Non-continuous (intermittent) fail conditions				>= Out of	3000 3750	Fail Counts (100ms loop) Sample Counts (100ms loop) Pass Counts	
			(intermittent) fail conductors will delay resetting fail counter until		Engine Torque Signal		>= Out of	700 875	Sample Counts (100ms loop)	
					Valid Accelerator Position Signal Valid Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi	<ul> <li>= TRUE Boolean</li> <li>= TRUE Boolean</li> <li>&gt;= 8.59961 Volts</li> <li>&lt;= 31.999 Volts</li> <li>&gt;= 400 RPM</li> <li>&lt;= 7500 RPM</li> </ul>				

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary Malfunction		Enable		Time	Mil
System	Code	Description	Criteria	Value			Conditions		Required	Illum.
					Engine Speed is within	>=	5	Sec		
					the allowable limits for	~-		000		
					Brake torque active	=	FALSE			_
					Below describes the					
					brake torque entry criteria					
					Engine Torque	>=	90	N*m		
					Throttle	>=	30.0003	Pct		
					Transmission Input Speed	<=	200	RPM		
					Vehicle Speed	<=	8	Kph		
					Transmission Range	≠	Park			
					Transmission Range	¥	Neutral			
							Not			
					PTO	=	Active			
					Set Brake Torque Active					
					TRUE if above conditions	>=	7	sec		
					are met for:					
					Below describes the					
					brake torque exit criteria					
					Brake torque entry	=	Not Met			
					criteria					
							Clutch			
							Hydrauli			
					Clutch hydraulic pressure	≠	c Air			
							Purge Event			
							CeTFTD			
					Clutch used to exit brake		_e_C3_			
					torque active	=	_e_cs_ RatlEnbl			
					The above clutch		NauLIDI		1	
					pressure is greater than	>=	600	kpa		
					this value for one loop	-	000	npu		
					Set Brake Torque Active					
					FALSE if above	>=	20	Sec		
					conditions are met for:		-		1	
							Test		1	
							Failed		1	
						≠	This Key		1	
					P06AC Status is	₹	On or		1	
							Fault		1	
							Active		1	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
				Disable Conditions:	DTC's:	TCM: P0658, P0668, P0669, P06AD, P06AE, P0716, P0712, P0713, P0717, P0722, P0723, P0962, P0963, P0966, P0967, P0970, P0971, P215C, P2720, P2721, P2729, P2730 ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Transmission Control Module (TCM)	P06AD	TCM power-up thermistor circuit voltage low	Power Up Temp	<= -59 °C	Instition Voltoge Le	0.50004 Valka	>= 60 Fail Time (Sec)	Two Trips
					Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for	>= 8.59961 Volts <= 31.999 Volts >= 400 RPM <= 7500 RPM >= 5 Sec Test		
					P06AD Status is	Failed This Key On or Fault Active		
					For Hybrids, below conditions must also be met			
					Estimated Motor Power Loss Estimated Motor Power Loss greater than limit for			
					Lost Communication with Hybrid Processor Control Module			

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions		ïme quired	Mil Illum.
					Estimated Motor Power Loss Fault	= FALSE			
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0716, P0717, P0722, P0723			
						ECM: None			
Transmission Control Module (TCM)	P06AE	TCM power-up thermistor circuit voltage high	Power Up Temp	>= 164 °C			>= 60	Fail Time (Sec)	Two Trips
					Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for P06AE Status is	>= 8.59961 Volts <= 31.999 Volts >= 400 RPM <= 7500 RPM >= 5 Sec Test Failed ≠ This Key On or Fault Active			
				Disable Conditions:	DTC's:	TCM: None ECM: None			
Transmission Fluid Temperature Sensor (TFT)	P0711	Trans Fluid Temp Sensor Circuit Range/Performance	lf transmission oil temp to substrate temp Δ	supporting documents					Two Trips
			lf transmission oil temp to power up temp Δ	Refer to Table 18 in ₀C supporting documents					
			Both conditions above required to increment fail counter				>= 3000	Fail Counts (100ms loop)	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			ime uired	Mil Illum.
			Note: table reference temp = to the median temp of trans oil temp, substrate temp and power up temp.				Out of	3750	Sample Counts (100ms loop)	
			Non-continuous (intermittent) fail conditions will delay resetting fail counter until				>=	700	Pass Counts (100ms loop)	
							Out of	875	Sample Counts (100ms loop)	
					Engine Torque Signal Valid Accelerator Position	= TRUE Boolean				
					Signal Valid Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi	= TRUE Boolean >= 8.59961 Volts <= 31.999 Volts >= 400 RPM <= 7500 RPM				
					Engine Speed is within the allowable limits for Brake torque active	>= 5 Sec = FALSE				
					Below describes the brake torque entry criteria					
					Engine Torque Throttle Transmission Input Speed	>= 90 N*m >= 30.0003 Pct <= 200 RPM				
					Vehicle Speed Transmission Range Transmission Range PTO	≠ Park				
					Set Brake Torque Active TRUE if above conditions are met for: Below describes the	>= 7 sec				
					brake torque exit criteria Brake torque entry criteria	= Not Met				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					Clutch hydraulic pressure	Purge		
					Clutch used to exit brake torque active	= _e_C3_ RatlEnbl		
					The above clutch pressure is greater than this value for one loop Set Brake Torque Active	>= 600 kpa		
					FALSE if above conditions are met for:	>= 20 Sec Test Failed		
					P0711 Status is	This Koy		
				Disable Conditions	: DTC's:	TCM: P0658, P0668, P0669, P06AD, P06AE, P0716, P0712, P0713, P0717, P0722, P0723, P0962, P0963, P0966, P0967, P0970, P0971, P215C, P2720, P2721, P2729, P2730		
						ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Transmission Fluid Temperature Sensor (TFT)	P0712	Transmission fluid temperature thermistor failed at a low voltage	Type of Sensor Used	CeTFTI_e_ = VoltageDire ctProp		F0401, F042L		Two Trips

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			If Transmission Fluid Temperature Sensor = Direct Proportional and Temp If Transmission Fluid Temperature Sensor = Indirect Proportional and	C= -74 ·0				
			Temp Either condition above will satisfy the fail conditions					il Time Sec)
					Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for	<= 31.999 Volts >= 400 RPM <= 7500 RPM		
					P0712 Status is	Test Failed This Kov		
					For Hybrids, below conditions must also be met Estimated Motor Power			
					Estimated Motor Power Loss greater than limit for time	>= 0 kw		
					Lost Communication with Hybrid Processor Control Module	= FALSE		
					Estimated Motor Power Loss Fault	= FALSE		
				Disab Condition				
						ECM: None		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		reshold Value	Secondary Malfunction		Enable Conditions			Tiı Requ		Mil Illum.
Transmission Fluid Temperature Sensor (TFT)		Transmission fluid temperature thermistor failed at a high voltage	Type of Sensor Used If Transmission Fluid Temperature Sensor = Direct Proportional and Temp	CeTFTI_ = VoltageD ctProp >= 174	e_ lire								Two Trips
			If Transmission Fluid Temperature Sensor = Indirect Proportional and Temp Either condition above will	<= 174	٥C							Fail Time	-
			satisfy the fail conditions			Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed is within Engine Speed is within the allowable limits for	>= <= >= >=	8.59961 31.999 400 7500 5 Test	Volts Volts RPM RPM Sec	>=	60	(Sec)	
						P0713 Status is	¥	Failed This Key On or Fault Active					
					Disable Conditions:	DTC's:	TCM: P07 P0722, P0 ECM: Non	723	0717,				
Transmission Input Speed Sensor (TISS)	P0716	Input Speed Sensor Performance	Transmission Input Speed Sensor Drops		RPM					>=	0.8	Fail Time (Sec)	One Trip
						Engine Torque is Engine Torque is Engine Speed Engine Speed s within the allowable limits for Vehicle Speed is Throttle Position is		0 8191.88 400 7500 5 10 0	N*m N*m RPM RPM Sec Kph Pct				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		eshold alue	Secondary Malfunction		Enable Conditions			Tin Requ		Mil Illum.
						 Transmission Input Speed is	>=	0	RPM				
						The previous requirement has been satisfied for	>=	0	Sec				
						The change (loop to loop) in transmission input speed is	<	8191.88	RPM/Loop				
						The previous requirement has been satisfied for	>=	0	Sec				
						Throttle Position Signal Valid	=	TRUE	Boolean				
						Engine Torque Signal Valid	=	TRUE	Boolean				
						Ignition Voltage	>= <=	8.59961 31.999 Test	Volts Volts				
						P0716 Status is not	=	Failed This Key On or Fault Active					
					Disable Conditions:	DTC's:	P0974 ECM: P01	01, P0102, I					
Transmission Input Speed Sensor (TISS)	P0717	Input Speed Sensor Circuit Low Voltage	Fail Case Transmission Input Speed	is < 33	RPM		P0121, P0	)122, P0123		>=	4.5	Fail Time (Sec)	One Trip
			Fail Case         When P0722 DTC Statue           2         equal to Test Failed and Transmission Input Speed	d < 653.125	RPM	Controller uses a single power supply for the speed sensors	=	1	Boolean				
						Engine Torque is Engine Torque is Vehicle Speed	>= <= >=	120 8191.88 12	N*m N*m Kph				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					Engine Torque Signal Valid Ignition Voltage Ignition Voltage Engine Speed Engine Speed is within the allowable limits for P0717 Status is not	>= 8.59961 Volts <= 31.999 Volts >= 400 RPM <= 7500 RPM >= 5 Sec Test Failed This Koy		
				Disable Conditions:	DTC's:	TCM: P0722, P0723 ECM: P0101, P0102, P0103		
Transmission Output Speed Sensor (TOSS)	P0722	Output Speed Sensor Circuit Low Voltage	Transmission Output Speed Sensor Raw Speed		P0722 Status is not	Test Failed This Key On or Fault Active	>= 4.5 Fail Time (Sec)	One Trip
					Transmission Input Speed Check Engine Torque Check Throttle Position Transmission Fluid Temperature Disable this DTC if the	= TRUE Boolean = TRUE Boolean >= 8.00018 Pct >= -40 ℃ = 1 Boolean		
					PTO is active Engine Torque Signal Valid Throttle Position Signal Ignition Voltage is Ignition Voltage is Engine Speed is	= TRUE Boolean = TRUE Boolean >= 8.59961 Volts		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions		Time Required	Mil Illum.
					Engine Speed is Engine Speed is within the allowable limits for	<= >=	7500 5	RPM Sec		
					Enable_Flags Defined Below					-
					The Engine Torque Check is TRUE, if either of the two following conditions are TRUE					
					Engine Torque Condition					
					Range Shift Status	¥	Range shift complete d	ENUM		
					Transmission Range is	=	Park or Neutral	N 14		
					Engine Torque is Engine Torque is	>= <=	8191.75 8191.75	N*m N*m		
					Engine Torque Condition					
					Engine Torque is Engine Torque is	>= <=	54 8191.75	N*m N*m		
					The Transmission Input Speed (TIS) Check is TRUE, if either of the two following conditions are TRUE					
					TIS Check Condition 1 Transmission Input Speed is	>=	653.125	RPM		
					Transmission Input Speed is	<=	5350	RPM		
					TIS Check Condition 2					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		eshold /alue	Secondary Malfunction		Enable Conditions				me uired	Mil Illum.
						Engine Speed without the brake applied is Engine Speed with the brake applied is Engine Speed is Controller uses a single power supply for the speed sensors Powertrain Brake Pedal is Valid	>= >= = =	3200 3200 8191.88 1 TRUE	RPM RPM RPM Boolean Boolean				
					Disable Conditions:	DTC's:	TCM: P071 ECM: P010 P0121, P01	1, P0102, F	P0103,				
Transmission Output Speed Sensor (TOSS)	P0723	Output Speed Sensor Circuit Intermittent	Transmission Output Speed Sensor Raw Speed Output Speed Delta	>= 105	RPM RPM					>= >=	0 0	Enable Time (Sec) Enable Time (Sec) Output	Trip
			Output Speed Drop		RPM					>=	1.5	Speed Drop Recovery Fail Time (Sec)	
			Transmission Range is	= Driven range (R,I	D)								
						 Range_Disable OR	=	FALSE	See Below				
						Neutral_Range_Enable And Neutral_Speed_Enable are TRUE concurrently	=		See Below See Below				
						Transmission_Range_En able	=	TRUE	See Below				

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary		Enable		Time	Mil
System	Code	Description	Criteria	Value	Malfunction		Conditions		Required	Illum.
					Transmission_Input_Spe ed_Enable	=	TRUE	See Below		
					No Change in Transfer Case Range (High <-> Low) for	>=	5	Seconds		
					P0723 Status is not	=	Test Failed This Key On or Fault Active			
					Disable this DTC if the PTO is active	=	1	Boolean		
					Ignition Voltage is	>=	8.59961	Volts		
					Ignition Voltage is	<=	31.999	Volts		
					Engine Speed is	>=	400	RPM		
					Engine Speed is	<=	7500	RPM		
					Engine Speed is within the allowable limits for	>=	5	Sec		
					Enable_Flags Defined					_
					Below					
					Transmission_Input_Spe ed_Enable is TRUE when either TIS Condition 1 or TIS Condition 2 is TRUE:					
					TIS Condition 1 is TRUE					
					when both of the			Enable		
					following conditions are satsified for	>=	0	Time (Sec)		
					Input Speed Delta Raw Input Speed	<= >=	4095.88 500	RPM RPM		
					TIS Condition 2 is TRUE when ALL of the next two conditions are satisfied					
					Input Speed	=	0	RPM		
					A Single Power Supply is used for all speed sensors	=	TRUE	Boolean		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions		Time Required	Mil Illum.
		•							
					Neutral_Range_Enable is				
					TRUE when any of the				
					next 3 conditions are				
					TRUE				
					Transmission Range is		ENUM		
						Reverse			
					Transmission Range is	= Neutral	ENUM		
					Transmission Range is	l ransito	LINOW		
						nal			
						Neutral/			
					Transmission Range is	= _Drive	ENUM		
					r anomiotion range io	Transluc	LITOIN		
						nal			
					And when a drop occurs				
					Loop to Loop Drop of				
					Transmission Output	> 650	RPM		
					Speed is				
									_
					Range_Disable is TRUE				
					when any of the next				
					three conditions are				
					TRUE				
					Transmission Range is	= Park	ENUM		
						Park/Re			
					Transmission Range is	= verse	ENUM		
						Tansio			
						nal			
						ON			
					Input Clutch is not		ENUM		
						Applied)			
				<b> </b>	Neutral One ed Exchiele			l	_
					Neutral_Speed_Enable is			1	
					TRUE when All of the	> 1.5	Seconds		
					next three conditions are			1	
					satsified for			1	
					Transmission Output	> 130	RPM	1	
					Speed			1	
					The loop to loop change		DDM	1	
					of the Transmission	< 20	RPM	1	
			1	I	Output Speed is				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					The loop to loop change of the Transmission Output Speed is	> -10 RPM	İ	
					Transmission_Range_En able is TRUE when one of the next six conditions is TRUE			
					Transmission Range is	= Neutral ENUN Reverse/	1	
					Transmission Range is	nal	1	
					Transmission Range is	nal	1	
						Table Based Time Please		
					Time since a driven range (R,D) has been selected	Refer to >= Table 21 Sec in supporti ng		
					Transmission Output Speed Sensor Raw Speed	>= 500 RPM		
					Output Speed when a fault was detected	500 PPM		
						TCM: P0973, P0974, P0976,		
				Conditions:		P0977 ECM: P0101, P0102, P0103, P0121, P0122, P0123		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions				me uired	Mil Illum.
Torque Converter Clutch (TCC)	ï	TCC System Stuck OFF	TCC Pressure Either Condition (A) or (B) Must be Met	>= 750 Kpa					>=	2	Enable Time (Sec)	Two Trips
			(A) TCC Slip Error @ TCC On Mode	Refer to					>=	5	Fail Time (Sec)	
			(B) TCC Slip @ Lock On Mode	>= 130 RPM					>=	5	Fail Time (Sec)	
			If Above Conditions Have been Met, and Fail Timer Expired, Increment Fail Counter						>=	2	TCC Stuck Off Fail Counter	
					TCC Mode	=	On or Lock					
					Ignition Voltage Lo Ignition Voltage Hi	>= <=	8.59961 31.999 400	Volts Volts RPM				
					Engine Speed Engine Speed Engine Speed is within	>= <=	7500	RPM				
					the allowable limits for Engine Torque Lo	>=	5 50	Sec N*m				
					Engine Torque Hi Throttle Position Lo	<= >=	8191.88 8.00018	N*m Pct				
					Throttle Position Hi 2nd Gear Ratio Lo 2nd Gear Ratio High	<= >= <=	99.9985 2.19482 2.52515	Pct Ratio Ratio				
					3rd Gear Ratio Lo 3rd Gear Ratio High	>= <=	1.42285	Ratio Ratio				
					4th Gear Ratio Lo 4th Gear Ratio High	>= <=	1.06946 1.23047	Ratio Ratio				
					5th Gear Ratio Lo 5th Gear Ratio Hi	>= <=	0.79053	Ratio Ratio				
					6th Gear Ratio Lo 6th Gear Ratio High Transmission Fluid	>= <=	0.62305 0.71692	Ratio Ratio				
					Temperature Lo Transmission Fluid	>=	-6.6563	°C				
					Temperature Hi PTO Not Active	<=	130 TRUE	⁰C Boolean				
					Engine Torque Signal Valid	=	TRUE	Boolean				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria			eshold alue	Secondary Malfunction		Enable Conditions			Tir Requ		Mil Illum.
							Throttle Position Signal Valid	=	TRUE	Boolean				
							Dynamic Mode	=	FALSE Test	Boolean				
							P0741 Status is	¥	Failed This Key On or Fault Active					
						Disable Conditions:			716, P0717, I P0742, P2763					
								P0106, P P0172, P P0202, P	0101, P0102, 0107, P0108 0174, P0175 0203, P0204 0207, P0208	, P0171, , P0201, , P0205,				
								P0301, P	0302, P0303 0306, P0307	, P0304,				
Torque Converter Clutch (TCC)	P0742	TCC System Stuck ON	TCC Slip Speed	>=	-50	RPM								One Trip
			TCC Slip Speed	<=	13	RPM								
											>=	1.5	Fail Time (Sec)	
			If Above Conditions Have been Met, and Fail Timer Expired, Increment Fail Counter								>=	6	Fail Counter	
							TCC Mode	=	Off					
							Enable test if Cmnd Gear = 1stFW and value true	=	1	Boolean				
							Enable test if Cmnd Gear = 2nd and value true	=	0	Boolean				
							Engine Speed Hi Engine Speed Lo Vehicle Speed HI	<= >= <=	6000 500 511	RPM RPM KPH				

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary Malfunction		Enable		Time	Mil Illum.
System	Code	Description	Criteria	Value			Conditions	KPH	Required	ilium.
					Vehicle Speed Lo Engine Torque Hi	>= <=	1 8191.88	Nm		
					Engine Torque Lo	>=	80	Nm		
					Current Range	/_ ≠	Neutral	Range		
					Current Range	<i>7</i> ≠	Reverse	Range		
					Transmission Sump			-		
					Temperature	<=	130	°C		
					Transmission Sump	>=	18	°C		
					Temperature	-	10	Ũ		
					Throttle Position Hyst	>=	5.00031	Pct		
					High					
					AND					
					Max Vehicle Speed to	<=	8	KPH		
					Meet Throttle Enable					
					Once Hyst High has been					
					met, the enable will remain while Throttle	>=	2.00043	Pct		
					Position					
					Disable for Throttle					
					Position	>=	75	Pct		
					Disable if PTO active					
					and value true	=	1	Boolean		
					Disable if in D1 and value					
					true	=	1	Boolean		
					Disable if in D2 and value					
					true	=	1	Boolean		
					Disable if in D3 and value					
					true	=	1	Boolean		
					Disable if in D4 and value					
					true	=	1	Boolean		
					Disable if in D5 and value		4	Deeleen		
					true	=	1	Boolean		
					Disable if in MUMD and		1	Boolean		
					value true	=	1	Doolean		
					Disable if in TUTD and	=	1	Boolean		
					value true	-	1	Boolean		
					4 Wheel Drive Low	=	FALSE	Boolean		
					Active	-	I ALOL	Dooicall		
					Disable if Air Purge	=	0	Boolean		
					active and value false					
					RVT Diagnostic Active		FALSE	Boolean		
					Ignition Voltage	>=	8.59961	V		
					Ignition Voltage	<=	31.999	V		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Thres Val		Secondary Malfunction		Enable Conditions				me uired	Mil Illum.
Jystem	Code	Description	Unterta			Vehicle Speed Engine Speed Engine Speed	<= >= <=	511 400 7500	KPH RPM RPM		noq		
						Engine Speed is within the allowable limits for	>=	5	Sec				
						Engine Torque Signal Valid	=	TRUE	Boolean				
						Throttle Position Signal Valid	=	TRUE Test	Boolean				
						P0742 Status is	¥	Failed This Key On or Fault Active					
					Disable Conditions:	DTC's:	P0723, P0	)741, P2763,	P2764				
							P0106, P0 P0172, P0 P0202, P0 P0206, P0 P0301, P0	101, P0102, I 0107, P0108, 0174, P0175, 0203, P0204, 0207, P0208, 0302, P0303, 0306, P0307, 042E	P0171, P0201, P0205, P0300, P0304,				
Mode 2 Multiplex Valve	P0751	Shift Solenoid Valve A Stuck Off	Commaned Gear Slip	>= 400	RPM								Two Trips
			Commanded Gear Gear Ratio	= 1st Lock <= 1.2095947	rpm					>=	0.2	Fail Tmr	
			Gear Ratio If the above parameters are	>= 1.0943604						=	5	Fail Counts	
			true							¥	0	Neutral Timer (Sec) Fail Timer	
										>= >=	0.3 8	(Sec) Counts	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions		Time Required	Mil Illum.
					Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo	<=	8.59961 31.999 400	Volts Volts RPM		
					Engine Speed Hi		7500	RPM		
					Engine Speed is within		5	Sec		
					the allowable limits for		5	Sec		
					Transmission Fluid Temperature		-6.6563	°C		
					Range Shift State	=	Range Shift Complet ed	ENUM		
					TPS OR	>=	0.50049	%		
					Output Speed		67	RPM		
					Throttle Position Signal Valid from ECM		TRUE	Boolean		
					Engine Torque Signal Valid from ECM, High side driver is enabled	=	TRUE	Boolean		
					High-Side Driver is Enabled	_	TRUE	Boolean		
					Input Speed Sensor fault		FALSE	Boolean		
					Output Speed Sensor fault	=	FALSE	Boolean		
					Default Gear Option is not present		TRUE			
				Disable Conditions:		TCM: P07 <sup>-</sup> P0723, P1		20722,		
						P0106, P0 P0172, P0 P0202, P0 P0206, P0 P0301, P0	01, P0102, F 107, P0108, 174, P0175, 203, P0204, 207, P0208, 302, P0303, 306, P0307, 42E	P0171, P0201, P0205, P0300, P0304,		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
Mode 2 Multiplex Valve	P0752	Shift Salanaid Value A Study	Gear Box Slip					One Trip
			Commanded Gear Commanded Gear has Achieved 1st Locked OR 1st	s				
			Free-Wheel OR 2nd with Mode 2 Sol. Commanded On If the above parameters are	h = TRUE Boolean d n				
			true				Please Refer to >= Table 16 in Supporting Timer (Sec)	)
			Command 4th Gear once Output Shaft Speed				Documents	
			If Gear Ratio	0>= 3.8256836				
			And Gear Ratio	o <= 4.2283936				
							>= 1.5 Fail Timer (Sec) >= 5 Counts	
					Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed is within Engine Speed is within	>= 8.59961 Volt <= 31.999 Volt >= 400 RPI <= 7500 RPI	s s A A	
					the allowable limits for High-Side Driver is Enabled			
					Throttle Position Signal Valid from ECM	= TRUE Boole		
					Output Speed OR TPS			
					Range Shift State	Range		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					Transmission Fluid Temperature Input Speed Sensor fault Output Speed Sensor fault Default Gear Option is not present	>= -6.6563 °C = FALSE Boolean = FALSE Boolean = TRUE		
				Disable Conditions:		TCM: P0716, P0717, P0722, P0723, P182E		
						ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Mode 2 Multiplex Valve	P0756	Shift Solenoid Valve B Stuck Off	Fail Case Commanded Gear	= 1st Locked				One Trip
			Gear Box Slip				Please Refer to Table 5 in Supporting Documents	
			Commanded Gear Previous Gear Ratio	= 1st Locked Gear <= 2.4821777				
				>= 2.2458496				
			If the above parameters are true				>= 1 sec >= 3 counts	
					Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi	>= 8.59961 Volts <= 31.999 Volts >= 400 RPM <= 7500 RPM		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		eshold alue	Secondary Malfunction		Enable Conditions		Time Required	Mil Illum.
						Engine Speed is within the allowable limits for	>=	5	Sec		
						Output Speed OR	>=	67	RPM		
						TPS	>=	0.50049 Range	%		
						Range Shift State	=	Shift Complet ed	ENUM		
						Transmission Fluid Temperature	>=	-6.6563	٥C		
						High-Side Driver is Enabled	=	TRUE	Boolean		
						Throttle Position Signal Valid from ECM	=	TRUE	Boolean		
						Input Speed Sensor fault Output Speed Sensor	=	FALSE	Boolean		
						fault Default Gear Option is	=	FALSE	Boolean		
						not present	=	TRUE			
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P07 P0723, P <sup>7</sup>		0722,		
							P0106, P0 P0172, P0	01, P0102, F 0107, P0108, 0174, P0175, 0203, P0204,	P0171, P0201,		
							P0206, P0 P0301, P0	207, P0208, 302, P0303, 306, P0307,	P0300, P0304,		
Variable Bleed Solenoid (VBS)	P0776	Pressure Control (PC) Solenoid B Stuck Off [C35R]	Fail Case         Case: Steady State 3rd           1         Gear								One Trip
			Commanded Gear		Gear						
			Gearbox Slip	>= 400	RPM						

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
							Please Refer to >= Table 16 in Supporting Documents	
			Command 4th Gear once Output Shaft Speed	<= 400 RPM				
			If Gear Ratio	>= 1.0943604				
			And Gear Ratio	<= 1.2095947				
							>= 3 Fail Timer (Sec)	
			It the above condiations are true, Increment 3rd gear fail counter				>= 3 3rd Gear Fai Counts	I
			and C35R Fail counter				>= 14 or 3-5R Clutch Fail Counts	
			Fail Case Case: Steady State 5th Gear					
			Commanded Gear	= 5th Gear				
			Gearbox Slip	>= 400 Rpm			Please Refer to Table 5 in Supporting Documents	
			Intrusive Test: Command 6th Gear	Please			Documents	
			If attained Gear=6th gear Time	refer to Table 2 in Shift Time				
			It the above condiations are true, Increment 5th gear fail counter				>= 3 5th Gear Fai Counts	I
			and C35R Fail counter				>= 14 or 3-5R Clutch Fail Counts	
					PRNDL State defaulted inhibit RVT	= FALSE Boolean = FALSE Boolean		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	;	Time Required	Mil Illum.
		Decemption			IMS fault pending indication	EALSE	Boolean		
					TPS validity flag		Boolean		
					Hydraulic System Pressurized		Boolean		
					Minimum output speed for RVT	5- 67	RPM		
					A OR B (A) Output speed enable		RPM		
					(B) Accelerator Pedal enable	>= 0.500/0			
					Common Enable Criteria Ignition Voltage Lo Ignition Voltage Hi	>= 8.59961	Volts Volts		
					Engine Speed Lo	>= 400	RPM		
					Engine Speed Hi		RPM		
					Engine Speed is within the allowable limits for		Sec		
					Throttle Position Signal valid		Boolean		
					HSD Enabled Transmission Fluid	S- 6 6562	Boolean ⁰C		
					Temperature Input Speed Sensor fault		Boolean		
					Output Speed Sensor fault	= FALSE			
					Default Gear Option is not present				
				Disable	MIL not Illuminated for	TCM: P0716, P0717,	P0722,		
				Conditions:	DTC's:	P0723, P182E			
						ECM: P0101, P0102, P0106, P0107, P0108 P0172, P0174, P0175	, P0171,		
						P0202, P0203, P0204 P0206, P0207, P0208 P0301, P0302, P0303	, P0205, , P0300,		
						P0305, P0306, P0307 P0401, P042E			

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
Variable Bleed Solenoid (VBS)	P0777	Pressure Control (PC) Solinoid B Stuck On [C35R] (Steady State)						One Trip
			Attained Gear slip	>= 400 RPM				
			If the Above is True for Time	Table 4 in supporting documents				
			Intrusive test: (CBR1 clutch exhausted)					
			Gear Ratio	<= 1.6086426				
			Gear Ratio	>= 1.4554443				
			If the above parameters are true					
							>= 1.1 Fail Timer (Sec)	
							>= 2 Fail Count in 1st Gear or	١
							>= 3 Total Fail Counts	
			<u>Fail Case</u> Case: Steady State 2nd 2 gear					
			Max Delta Output Speed Hysteresis	Based value Please				

Component/	Fault	Monitor Strategy	Malfunction	Threshold Value	Secondary Malfunction	Enable Conditions	Time	Mil Illum.
System	Code	Description	Criteria	Table	Manufiction	Conditions	Required	mum.
				Based				
				value				
			Min Delta Output Speed					
			Hysteresis	>= Refer to Table 23 in				
				supporting				
				documents				
				Table				
				Based				
				Time				
			If the Above is True for Time	>= Please Refer to Sec				
				Table 17 in				
				supporting				
				documents				
			Intrusive test: (CB26 clutch exhausted)					
			Gear Ratio	<= 1.6086426				
			Gear Ratio	>= 1.4554443				
			If the above parameters are true					
							Fail Timer	
							>= 1.1 (Sec)	
							>= 3 Fail Count i	
							Zhù Gear	
							or Total Fail	
							>= 3 Counts	
			Fail Case Case: Steady State 4th gear					
			3					
				Table Based				
				value				
			Max Delta Output Speed	Please rpm/acc				
			Hysteresis	Refer to				
				Table 22 in				
				supporting documents				
				documento	8			

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
			Min Delta Output Speed Hysteresis					
			If the Above is True for Time	Table Based Time				
			Intrusive test: (C1234 clutch exhausted)	documents				
			Gear Ratio	<= 0.8946533				
			Gear Ratio	>= 0.8094482				
			If the above parameters are true					
							>= 1.1 Fail Timer (Sec) >= 3 Fail Count 4th Gear	'n
							or >= 3 Total Fail Counts	
			Fail Case Case: Steady State 6th gear					
			∸ Max Delta Output Speed Hysteresis	Table Based value Please Refer to Table 22 in supporting documents				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable onditions			Ti Req	me uired	Mil Illum.
			Min Delta Output Speed Hysteresis	Table Based value Please rpm/coo								
			If the Above is True for Time	Table Based Time Please Sec Refer to Table 17 in supporting								
			Intrusive test: (CB26 clutch exhausted) Gear Ratio						>=	1.1	Fail Timer (Sec)	
			Gear Ratio If the above parameters are	>= 0.8094482					>=	3	counts	
			true						>=	1.1	Fail Timer (Sec)	
									>=	3	Fail Count in 6th Gear or	
					PRNDL State defaulted	=	FALSE	Boolean	>=	3	Total Fail Counts	
					inhibit RVT IMS fault pending indication	=	FALSE FALSE	Boolean Boolean				
					output speed TPS validity flag HSD Enabled		0 TRUE TRUE	RPM Boolean Boolean				
					Hydraulic_System_Press urized A OR B (A) Output speed enable	= >=	TRUE 67	Boolean Nm				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		shold alue	Secondary Malfunction		Enable Conditions		Time Required	Mil Illum.
						(B) Accelerator Pedal enable Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed is within the allowable limits for	, , , , , , , , , , , , , , , , , , ,	0.50049 8.59961 31.999 400 7500 5	Nm Volts RPM RPM Sec		
						if Attained Gear=1st FW Accelerator Pedal enable	>=	5.00031	Pct		
						if Attained Gear=1st FW Engine Torque Enable if Attained Gear=1st FW	>=	5	Nm		
						Engine Torque Enable Transmission Fluid	<=	8191.88	Nm ⁰C		
						Temperature Input Speed Sensor fault Output Speed Sensor fault	=	FALSE FALSE	Boolean Boolean		
					Disable Conditions:		TCM: P07 P0723, P1	16, P0717, P 82E	0722,		
							P0106, P0 P0172, P0 P0202, P0 P0206, P0 P0301, P0	01, P0102, F 1107, P0108, 1174, P0175, 1203, P0204, 1207, P0208, 1302, P0303, 1306, P0307, 142E	P0171, P0201, P0205, P0300, P0304,		
Variable Bleed Solenoid (VBS)	P0777	Pressure Control (PC) Solenoid B StuckOn [C35R] (Dymanic)	Primary Offgoing Clutch is exhausted (See Table 12 in Supporting Documents for Exhaust Delay Timers) Primary Oncoming Clutch Pressure Command Status	= TRUE _ Maximum							One Trip

Component/	Fault	Monitor Strategy	Malfunction	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Criteria Primary Offgoing Clutch Pressure Command Status	Clutch = exhaust command	manufectori	Conditions	Required	
			Range Shift Status	Initial ≠ Clutch Control				
			Attained Gear Slip	<= 40 RPM				
			If the above conditions are true run appropriate Fail 1 Timers Below: fail timer 1					
			(3-1 shifting with Closed Throttle)	>= 0.5 Fail Time (Sec)				
			fail timer 1 (3-2 shifting with Throttle) fail timer 1	>= 0.2998047				
			(3-2 shifting with Closed Throttle)	>= 0.5 Fail Time (Sec)				
			fail timer 1 (3-4 shifting with Throttle) fail timer 1	>= 0.2998047				
			(3-4shifting with Closed Throttle)	>= 0.5 Fail Time (Sec)				
			fail timer 1 (3-5 shifting with Throttle)	>= 0.2998047				
			fail timer 1 (3-5 shifting with Closed Throttle)	>=       0.5        Fail Time (Sec)				
			fail timer 1 (5-3 shifting with Throttle)	>= 0.2998047				
			fail timer 1 (5-3 shifting with Closed Throttle)	>= 0.5 Fail Time (Sec)				
			fail timer 1 (5-4 shifting with Throttle)	>= 0.2998047				
			fail timer 1 (5-4 shifting with Closed) Throttle)	>= 0.5 Fail Time (Sec)				
			fail timer 1 (5-6 shifting with Throttle)	>= 0.2998047 Fail Time (Sec)				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable onditions			Tim Requi		Mil Illum.
			fail timer 1 (5-6 shifting with Closed Throttle)	>= 0.5 Fail Time (Sec)								
			If Attained Gear Slip is Less than Above Cal Increment Fail Timers						Ti 1 Se T >= F R S	Fotal Fail me = (Fail + Fail 2) ee Enable Fimers for Fail Timer 1, and Reference upporting Table 15 for Fail Timer 2	Sec	
			If fail timer is greater than threshold increment corresponding gear fail counter and total fail counter									
			3rd gear fail counter						>=	3	3rd gear fail counts OR	
			5th gear fail counter						>=	3	5th gear fail counts OR	
			Total fail counter						>=	5	total fail counts	
					TUT Enable temperature Input Speed Sensor fault		-6.6563 FALSE	°C Boolean				
					Output Speed Sensor		FALSE	Boolean				
					fault Command / Attained							
					Gear High Side Driver ON	Ŧ	1st TRUE	Boolean Boolean				
					output speed limit for		100	RPM				
					TUT input speed limit for TUT	>=	150	RPM				
					PRNDL state defaulted	=	FALSE	Boolean				
					IMS Fault Pending Service Fast Learn Mode		FALSE FALSE	Boolean Boolean				
					Contract Edular Mode	_		Looioun				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					HSD Enabled Default Gear Option is not present	– TPLIE		
				Disable Conditions:		TCM: P0716, P0717, P0722, P0723, P182E		
						ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Variable Bleed Solenoid (VBS)	P0796	Pressure Control (PC) Solenoid C Stuck Off [C456] (Steady State)	Fail Case 1 Case: Steady State 4th Gear					One Trip
			Gear slip	>= 400 RPM			Please See Table 5 For Neutral Neutral Timer (Sec) Time Cal	
			Intrusive test: commanded 5th gear	Please				
			lf attained Gear <i>≠</i> 5th for time					
			if the above conditions have been met Increment 4th Gear Fail Counter	Documenta			>= 3 4th Gear Fail Count	
			and C456 Fail Counters				>= 14 OR C456 Fail Counts	
			Fail Case Case: Steady State 5th Gear					

ons	Required Please See Table 5 For Neutra Neutral Timer (S Time Cal	
	>= 3 5th Gear Couni OR	
	>= 14 C456 F Counts	
	Table 5 For Neutra	
	Count OR	
	>= 14 Counts	
E Boolean	oolean	
S	SE B	>=     Please See Table 5 For Neutral Time Cal     Neutral Timer (Se Time Cal       >=     3     6th Gear I Count       >=     3     6th Gear I Count       >=     14     C456 Fa Counts       .SE     Boolean     5

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions		Time Required	Mil Illum.
					TPS validity flag Hydraulic System	_	TRUE TRUE	Boolean Boolean		
					Pressurized Minimum output speed for RVT		67	RPM		
					A OR B (A) Output speed enable	>=	67	RPM		
					(B) Accelerator Pedal enable Common Enable Criteria	>=	0.50049	Pct		
					Ignition Voltage Lo Ignition Voltage Hi	>= <=	8.59961 31.999	Volts Volts		
					Engine Speed Lo Engine Speed Hi Engine Speed is within	<=	400 7500	RPM RPM		
					the allowable limits for Throttle Position Signal valid	_	5 TRUE	Sec Boolean		
					HSD Enabled Transmission Fluid	=	TRUE -6.6563	Boolean ⁰C		
					Temperature Input Speed Sensor fault OutputSpeed Sensor	=	FALSE	Boolean		
					fault Default Gear Option is	=	FALSE TRUE	Boolean		
					not present					
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P07 P0723, P <sup>2</sup>	16, P0717, F 82E	90722,		
							01, P0102, F			
						P0172, P0 P0202, P0	)107, P0108, )174, P0175, )203, P0204,	P0201, P0205,		
						P0301, P0 P0305, P0	)207, P0208, )302, P0303, )306, P0307,	P0304,		
						P0401, P0	)42E			

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
Variable Bleed Solenoid (VBS)	1	Pressure Control (PC) Solenoid C Stuck On [C456] (Steady State)	Fail Case <u>1</u> Case: Steady State 1st					One Trip
			Attained Gear slip	>= 400 RPM				
			If the Above is True for Time	Table 4 in supporting documents				
			Intrusive test: (CBR1 clutch exhausted)					
			Gear Ratio	<= 1.2095947				
			Gear Ratio	>= 1.0943604				
			If the above parameters are true					
							>= 1.1 Fail Timer (Sec)	
							>= 2 Fail Count ir 1st Gear or	ו
							>= 3 Total Fail Counts	
			Fail Case         Case Steady State 2nd					
			= Max Delta Output Speed Hysteresis					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions		Time Required	Mil Illum.
			Min Delta Output Speed Hysteresis						
			If the Above is True for Time	Table Based Time Please Sec Refer to Table 17 in supporting					
			Intrusive test: (CB26 clutch exhausted) Gear Ratio	documents <= 1.2095947					
				>= 1.0943604					
			If the above parameters are true						
							>= 1.	1 Fail Timer (Sec)	
							>= 3	Fail Count ir 2nd Gear	1
							>= 3	or Total fail counts	
			Fail Case 3 Case Steady State 3rd						-
			Max Delta Output Speed Hysteresis						

Component/	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions		Pa	ïme quired	Mil Illum.
System	Lode	Description	Min Delta Output Speed Hysteresis	Table Based value Please Refer to Table 23 in supporting		Conditions			40100	
			If the Above is True for Time	Table 17 in supporting						
			Intrusive test: (C35R clutch exhausted) Gear Ratio							
			Gear Ratio If the above parameters are	>= 1.0943604						
			true				:	>= 1.1	Fail Timer (Sec)	
								>= 3 OR >= 3	Fail Count in 3rd Gear Total Fail Counts	
					PRNDL State defaulted inhibit RVT IMS fault pending	= FALSE	Boolean Boolean Boolean		Counts	
					indication output speed TPS validity flag HSD Enabled	>= 0 = TRUE	RPM Boolean Boolean			
					Hydraulic_System_Press urized A OR B (A) Output speed enable		Boolean Nm			

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	shold Ilue	Secondary Malfunction		Enable Conditions		Time Required	Mil Illum.
-					(B) Accelerator Pedal enable	>=	0.50049	Nm		
					Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi	>= <= >= <=	8.59961 31.999 400 7500	Volts Volts RPM RPM		
					Engine Speed is within the allowable limits for	>=	5	Sec		
					if Attained Gear=1st FW Accelerator Pedal enable	>=	5.00031	Pct		
					if Attained Gear=1st FW Engine Torque Enable	>=	5	Nm		
					if Attained Gear=1st FW Engine Torque Enable Transmission Fluid	<=	8191.88	Nm		
					Temperature Input Speed Sensor fault	>=	-6.6563 FALSE	⁰C Boolean		
					Output Speed Sensor laut Output Speed Sensor fault	=	FALSE	Boolean		
					Default Gear Option is not present	=	TRUE			
				Disable Conditions:		TCM: P07 P0723, P1		0722,		
						P0106, P0 P0172, P0 P0202, P0 P0206, P0	01, P0102, F 0107, P0108, 0174, P0175, 0203, P0204, 0207, P0208,	P0171, P0201, P0205, P0300,		
							)302, P0303, )306, P0307, )42E			
Variable Bleed Solenoid VBS)	P0797	Pressure Control (PC) Solenoid C Stuck On [C456] (Dynamic)	Primary Offgoing Clutch is exhausted (See Table 11 in Supporting Documents for Exhaust Delay Timers) Primary Oncoming Clutch	Boolean						One Trip
			Pressure Command Status							

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
			Primary Offgoing Clutch Pressure Command Status Range Shift Status	command Initial				
			Attained Gear Slip					
			If the above conditions are true increment appropriate Fail 1 Timers Below: fail timer 1 (4-1 shifting with throttle) fail timer 1 (4-2 shifting without throttle) fail timer 1 (4-2 shifting with uthrottle) fail timer 1 (4-3 shifting with throttle) fail timer 1 (4-3 shifting with throttle) fail timer 1 (5-3 shifting with throttle) fail timer 1 (5-3 shifting with uthrottle) fail timer 1 (5-3 shifting without throttle) fail timer 1 (5-3 shifting with throttle) fail timer 1 (5-3 shifting with throttle) fail timer 1 (5-3 shifting without throttle) fail timer 1 (6-2 shifting with throttle) fail timer 1	$\begin{array}{l} >= 0.2998047 & Fail Time \\ (Sec) \\ >= 0.5 & Fail Time \\ (Sec) \\ >= 0.2998047 & Fail Time \\ (Sec) \\ >= 0.5 & Fail Time \\ (Sec) \\ >= 0.2998047 & Fail Time \\ (Sec) \\ >= 0.2998047 & Fail Time \\ (Sec) \\ >= 0.2998047 & Fail Time \\ (Sec) \\ >= 0.5 & Fail Time \\ (Sec) \\ >= 0.2998047 & Fail Time \\ (Sec) \\ = 0.2998047 & Fail T$				
l			(6-2 shifting without throttle)	>= 0.5 (Sec)				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions			Tin Requ		Mil Illum.
			If Attained Gear Slip is Less than Above Cal Increment Fail Timers						Ti 1 Si 7 >= F R S	Fotal Fail me = (Fai + Fail 2) ee Enable Timers for Fail Timer 1, and Reference upporting Table 15 for Fail Timer 2	sec	
			If fail timer is greater than threshold increment corresponding gear fail counter and total fail counter									
			4th gear fail counter						>=	3	Fail Counter From 4th Gear OR	
			5th gear fail counter						>=	3	Fail Counter From 5th Gear OR	
			6th gear fail counter						>=	3	Fail Counter From 6th Gear OR	
			Total fail counter						>=	5	Total Fail Counter	
					TUT Enable temperature Input Speed Sensor fault Output Speed Sensor fault	>= = =	-6.6563 FALSE FALSE	⁰C Boolean Boolean				
					Command / Attained Gear	¥	1st	Boolean				
					High Side Driver ON output speed limit for	= >=	TRUE 100	Boolean RPM				
					TUT input speed limit for TUT PRNDL state defaulted	>= =	150 FALSE	RPM Boolean				

Component/ System	Fault Code	Monitor Strategy Description		Malfunction Criteria		reshold Value	Secondary Malfunction	Enable Conditions		Time Required	Mil Illum.
í.							IMS Fault Pending	= FALSE	Boolean		
							Service Fast Learn Mode	= FALSE	Boolean		
							HSD Enabled	= TRUE	Boolean		
							MIL not Illuminated for		P0722,		
						Conditions:	DTC's:	P0723, P182E			
									20400		
								ECM: P0101, P0102, F P0106, P0107, P0108			
								P0172, P0174, P0175	P0201,		
								P0202, P0203, P0204 P0206, P0207, P0208			
								P0301, P0302, P0303 P0305, P0306, P0307			
								P0401, P042E	, FU300,		
Top Lip Top Down Switt	ah		Fail Case	Tap Up Switch Stuck in the							Special
Tap Up Tap Down Swite (TUTD)	P0815	Upshift Switch Circuit	<u>1</u>	Up Position in Range 1 Enabled		Boolean					No MIL
				Tap Up Switch Stuck in the							
				Up Position in Range 2 Enabled		Boolean					
				Tap Up Switch Stuck in the							
				Up Position in Range 3 Enabled		Boolean					
				Tap Up Switch Stuck in the							
				Up Position in Range 4 Enabled		Boolean					
				Tap Up Switch Stuck in the							
				Up Position in Range 5 Enabled		Boolean					
				Tap Up Switch Stuck in the							
				Up Position in Range 6 Enabled		Boolean					
				Tap Up Switch Stuck in the							
				Up Position in Neutral Enabled		Boolean					
				Tap Up Switch Stuck in the	1	Boolean					
				Up Position in Park Enabled	- '	Doolean					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Threshold Value	Secondary Malfunction	Enable Conditions		ime uired	Mil Illum.
System	Coue	Description	Tap Up Switch Stuck in the Up Position in Reverse Enabled	= 0			Contractions			
			Tap Up Switch ON	= TRL	JE Boolean			>= 1	Fail Time (Sec)	
			Fail Case         Tap Up Switch Stuck in the           2         Up Position in Range 1           Enabled	= 1	Boolean					
			Tap Up Switch Stuck in the Up Position in Range 2 Enabled	= 1	Boolean					
			Tap Up Switch Stuck in the Up Position in Range 3 Enabled	= 1	Boolean					
			Tap Up Switch Stuck in the Up Position in Range 4 Enabled Tap Up Switch Stuck in the	= 1	Boolean					
			Up Position in Range 5 Enabled Tap Up Switch Stuck in the	= 1	Boolean					
			Up Position in Range 6 Enabled Tap Up Switch Stuck in the	= 1	Boolean					
			Up Position in Neutral Enabled Tap Up Switch Stuck in the							
			Up Position in Park Enabled Tap Up Switch Stuck in the Up Position in Reverse	= 0						
			Enabled Tap Up Switch ON NOTE: Both Failcase1 and					>= 600	Fail Time	
			Failcase 2 Must Be Met						(Sec)	

Component/	Fault	Monitor Strategy	Malfunction		Threshold	Secondary Malfunction	Enable	Time	Mil
System	Code	Description	Criteria		Value	Time Since Last Range Change Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi	>= 8.59961 Volts <= 31.999 Volts >= 400 RPM <= 7500 RPM	Required	
						Engine Speed is within the allowable limits for P0815 Status is	>= 5 Sec Test Failed This Kov		
					Disable Conditions:		Fault Active TCM: P0816, P0826, P182E, P1876, P1877, P1915, P1761		
							ECM: None		
Tap Up Tap Down Switch (TUTD)	P0816	Downshift Switch Circuit	Fail Case         Tap Down Switch Stuck in           1         the Down Position in Range           1         Enable           1         Tap Down Switch Stuck in	e = d n	0 Boolean				Special No MIL
			the Down Position in Rang 2 Enable	d	0 Boolean				
			Tap Down Switch Stuck in the Down Position in Rang 3 Enable	e = d	0 Boolean				
			Tap Down Switch Stuck ii the Down Position in Rang 4 Enable	e = d	0 Boolean				
			Tap Down Switch Stuck in the Down Position in Rang 5 Enable	e = d	0 Boolean				
			Tap Down Switch Stuck in the Down Position in Rang 6 Enable	e =	0 Boolean				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria			eshold alue	Secondary Malfunction	Enable Conditions		Time Require		Mil Illum.
System	Coue	Description	Tap Down Switch Stuck in			uiuc		Conditions		Require		
			the Down Position in Range Neutral Enabled	=	1	Boolean						
			Tap Down Switch Stuck in									
			the Down Position in Range	=	1	Boolean						
			Park Enabled									
			Tap Down Switch Stuck in the Down Position in Range	=	0	Boolean						
			Reverse Enabled									
			Tap Down Switch ON	=	TRUE	Boolean			>=	1	sec	
			Fail Case Tap Down Switch Stuck in									-
			2 the Down Position in Range	=	1	Boolean						
			1 Enabled Tap Down Switch Stuck in									
			the Down Position in Range	=	1	Boolean						
			2 Enabled									
			Tap Down Switch Stuck in the Down Position in Range	_	1	Boolean						
			3 Enabled	-		Doolean						
			Tap Down Switch Stuck in			5						
			the Down Position in Range 4 Enabled	=	1	Boolean						
			Tap Down Switch Stuck in									
			the Down Position in Range	=	1	Boolean						
			5 Enabled Tap Down Switch Stuck in									
			the Down Position in Range	=	1	Boolean						
			6 Enabled Tap Down Switch Stuck in									
			the Down Position in Neutral	=	0	Boolean						
			Enabled									
			Tap Down Switch Stuck in the Down Position in Park	_	0	Boolean						
			Enabled	=	U	DUDIEATI						
			Tap Down Switch Stuck in									
			the Down Position in Reverse Enabled	=	0	Boolean						
			Tap Down Switch ON	=	TRUE	Boolean						
			NOTE: Both Failcase1 and						>=	600	sec	
			Failcase 2 Must Be Met							500	000	-

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Thresho Value		Secondary Malfunction		Enable Conditions			Tim Requi		Mil Illum.
						Time Since Last Range Change Ignition Voltage Lo Ignition Voltage Hi	>= >= <=	1 8.59961 31.999	Enable Time (Sec) Volts Volts				
						Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for	<- >= <= >=	400 7500 5 Test	RPM RPM Sec				
						P0816 Status is	¥	Failed This Key On or Fault Active					
					Disable Conditions:	DTC's:	TCM: P0815 P1876, P187 ECM: None						
Tap Up Tap Down Switc (TUTD)	<sup>h</sup> P0826	Up and Down Shift Switch Circuit	TUTD Circuit Reads Invalid Voltage		oolean					>=	60	Fail Time (Sec)	Special No MIL
(/						Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for		8.59961 31.999 400 7500 5	Volts Volts RPM RPM Sec			()	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		eshold alue	Secondary Malfunction		Enable Conditions			Tiı Requ	me uired	Mil Illum.
						P0826 Status is	¥	Test Failed This Key On or Fault Active					
					Disable Conditions:	DTC's:	TCM: P1761 ECM: None						
Variable Bleed Solenoid (VBS)	P0961	Pressure Control (PC) Solenoid A Control Circuit Rationality Test (Line Pressure VBS)	The HWIO reports an invalid voltage (out of range) error flag	= TRUE	Boolean					>=	4.4	Fail Time (Sec)	Two Trips
										out of	5	Sample Time (Sec)	
						Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable limits for	,	8.59961 31.999 400 7500 5	Volts Volts RPM RPM Sec				
					Disable Conditions:	DTC's:	TCM: None ECM: None						
Variable Bleed Solenoid (VBS)	P0962	Pressure Control (PC) Solenoid A Control Circuit Low Voltage (Line Pressure VBS)	The HWIO reports a low voltage (ground short) error flag	= TRUE	Boolean					>=	1.5	Fail Time (Sec)	One Trip
										out of	1.875	Sample Time (Sec)	
						Ignition Voltage Ignition Voltage Engine Speed Engine Speed is within the allowable limits for	) =	8.59961 31.999 400 7500 5	Volts Volts RPM RPM Sec				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		eshold alue	Secondary Malfunction		Enable conditions			Tir Requ		Mil Illum.
					Disable Conditions:	DTC's:	TCM: None ECM: None						
Variable Bleed Solenoid (VBS)	P0963	Pressure Control (PC) Solenoid A Control Circuit High Voltage (Line Pressure VBS)	The HWIO reports a high voltage (open or power short) error flag	= TRUE	Boolean					>= out	4.4	Fail Time (Sec) Sample Time	Two Trips
						Ignition Voltage Ignition Voltage Engine Speed Engine Speed is within the allowable limits for	,= ,= ,= ,= ,=	8.59961 31.999 400 7500 5	Volts Volts RPM RPM Sec	of	5	(Sec)	
					Disable Conditions:	DTC's:	TCM: None ECM: None						
Variable Bleed Solenoid (VBS)	P0966	Pressure Control (PC) Solenoid B Control Circuit Low Voltage (C35R VBS)	The HWIO reports a low voltage (ground short) error flag	= TRUE	Boolean					>=	0.3	Fail Time (Sec)	One Trip
						Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable limits for		8.59961 31.999 400 7500 5	Volts Volts RPM RPM Sec	out of	0.375	Sample Time (Sec)	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		eshold alue	Secondary Malfunction		Enable Conditions			Tir Requ		Mil Illum.
						P0966 Status is not	=	Test Failed This Key On or Fault Active					
					Disable Conditions:	MIL not Illuminated for DTC's:							
Variable Bleed Solenoid (VBS)	P0967	Pressure Control (PC) Solenoid B Control Circuit High Voltage (C35R VBS)	The HWIO reports a high voltage (open or power short) error flag	= TRUE	Boolean					>=	0.3	Fail Time (Sec)	One Trip
		(,								out of	0.375	Sample Time (Sec)	•
						Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable limits for	<= >= <=	8.59961 31.999 400 7500 5 Test Failed	Volts Volts RPM RPM Sec				
						P0967 Status is not	=	This Key On or Fault Active					
					Disable Conditions:	MIL not Illuminated for DTC's:							
Variable Bleed Solenoid (VBS)		Pressure Control (PC) Solenoid C Control Circuit Low Voltage (C456/CBR1 VBS)	The HWIO reports a low voltage (ground short) error flag		Boolean					>=	0.3	Fail Time (Sec)	One Trip
										out of	0.375	Sample Time (Sec)	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
				Disable Conditions:		On or         Fault           Active         >=           >=         8.59961         Volts           <=		
Variable Bleed Solenoid (VBS)	P0971	Pressure Control (PC) Solenoid C Control Circuit High Voltage (C456/CBR1 VBS)	The HWIO reports a high voltage (open or power short) error flag	= TRUE Boolean			>= 0.3 Fail Time (Sec) out 0.375 Sample Time	One Trip
				Disable Conditions:		On or         Fault           Active         >=           >=         8.59961         Volts           <=	of 0.375 (Sec)	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		shold lue	Secondary Malfunction		Enable Conditions				me uired	Mil Illum.
Shift Solinoid		Shift Solenoid A Control Circuit Low (Mode 2 Solenoid)	The HWIO reports a low voltage (ground short) error flag	 TRUE	Boolean					>=	1.2	Fail Time (Sec)	One Trip
										out of	1.5	Sample Time (Sec)	-
						P0973 Status is not Ignition Voltage Ignition Voltage Engine Speed Engine Speed is within the allowable limits for	= <= >= <= >=	Test Failed This Key On or Fault Active 8.59961 31.999 400 7500 5	Volts Volts RPM RPM Sec				
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						
Shift Solinoid	P0974	Shift Solenoid A Control Circuit High (Mode 2 Solenoid)	The HWIO reports a high voltage (open or power short) error flag	 TRUE	Boolean					>=	1.2	Fail Time (Sec) Sample Time	Two Trips
										out of	1.5	(Sec)	
						P0974 Status is not	=	Test Failed This Key On or Fault Active					
						Ignition Voltage Ignition Voltage Engine Speed Engine Speed is within the allowable limits for	>= <= >= <=	8.59961 31.999 400 7500 5	Volts Volts RPM RPM Sec				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		eshold alue	Secondary Malfunction		Enable Conditions				me uired	Mil Illum.
					Disable Conditions:	MIL not Illuminated for DTC's:							
Mode 3 Multiplex Valve	P0977	Shift Solenoid B Control Circuit High (Mode 3 Solenoid)	The HWIO reports a high voltage (open or power short) error flag	= TRUE	Boolean					>= out	1.2 1.5	Sec	One Trip
					Disable Conditions:	DTC's:	<= >= <= >= TCM: None	Test Failed This Key On or Fault Active 8.59961 31.999 400 7500 5	Volts Volts RPM RPM Sec	of	1.5	360	
Tap Up Tap Down Switch (TUTD)	P1761	Tap Up and Down switch signal circuit (rolling count)	Rolling count value received from BCM does not match expected value	= TRUE	Boolean					>=	3 10	Fail Counter Sample Timer (Sec)	Special No MIL
						Tap Up Tap Down Message Health Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for		TRUE 400 7500 5	Boolean RPM RPM Sec			(060)	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions		Tim Requi		Mil Illum.
				Disable Conditions	DTC's:			·		
Internal Mode Switch (IMS)	P182E	Internal Mode Switch - Invalid Range	Fail Case 1 Current range Previous range	1110) CeTRGR_e ≠ _PRNDL_D Range						One Trip
			Previous range	rive6 CeTRGR_e ≠ _PRNDL_D Range rive4						
			Range Shift State	= Range Shift Completed ENUM						
			Absolute Attained Gear Slip	<= 50 rpm						
			Attained Gear	<= Sixth						
			Attained Gear	>= First						
			Throttle Position Available	= TRUE						
			Throttle Position	>= 8.0001831 pct						
			Output Speed	>= 200 rpm						
			Engine Torque	>= 50 Nm						
			Engine Torque	<= 8191.75 Nm						
			If the above conditions are met then Increment Fail Timer				>=	1	Fail Seconds	
			If Fail Timer has Expired then Increment Fail Counter				>=	5	Fail Counts	
			Fail Case Output Speed	<= 70 rpm						

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions		Time Required	Mil Illum.
		2000.19.001	The following PRNDL sequence events occur in this exact order:						
			PRNDL state	= Drive 6 (bit state 0110) Range					
			PRNDL state = Drive 6 for	>= 1 Sec					
			PRNDL state	Transition 8 = (bit state Range 0111)					
			PRNDL state	= Drive 6 (bit state 0110) Transition 1					
			PRNDL state						
			Above sequencing occurs in	<= 1 Sec					
			Neutral Idle Mode If all conditions above are met Increment delay Timer						
			If the below two conditions are met Increment Fail Timer				>=	3 Fail Secon	ds
			delay timer	>= 1 Sec					
			Input Speed	>= 400 Sec					
			If Fail Timer has Expired then Increment Fail Counter				>=	2 Fail Coun	is
			Fail Case 3 Current range	Transition = 13 (bit state Range 0010)	Previous range	CeTRG ≮ R_e_PR NDL_Dri ve1			
			Engine Torque	>= -8192 Nm	Previous range	CeTRG ≠ R_e_PR NDL_Dri ve2			
			Engine Torque	<= 8191.75 Nm	IMS is 7 position configuration		olean		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			If the above conditions are met then, Increment Fail Timer		If the "IMS 7 Position config" = 1 then the "previous range" criteria above must also be satsified when the "current range" =		>= 0.225 Seconds	
			If Fail Timer has Expired then Increment Fail Counter Fail Case	Transition	"Transition 13" Disable Fail Case 4 if last		>= 15 Fail Counts	-
			4 Current range		positive range was Drive 6 and current range is transition 8 Set inhibit bit true if			
			Inhibit bit (see definition)	= FALSE	PRNDL = 1100 (rev) or 0100 (Rev-Neu transition 11) Set inhibit bit false if PRNDL = 1001 (park)			
			Steady State Engine Torque	>= 100 Nm				
			Steady State Engine Torque	<= 8191.75 Nm				
			If the above conditions are met then Increment Fail Timer				>= 0.225 Seconds	
			If the above Condtions have been met, Increment Fail Counter Fail Case				>= 15 Fail Counts	_
			Fail Case         Throttle Position Available           5         The following PRNDL sequence events occur in this exact order:	= TRUE Boolean				
			PRNDL State	Reverse = (bit state Range 1100) Transition				
			PRNDL State	= 11 (bit state Range 0100)				
			PRNDL State	= Neutral (bit state 0101) Range				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
<b>C</b> Jotom		2000.p.co.		Transition e = 11 (bit state Range 0100)				
			Above sequencing occurs in	n <= 1 Sec				
			Then delay timer increments	S				
			Delay timer	r>= 5 sec				
			Range Shift State	e = Range Shift Complete				
			Absolute Attained Gear Slip	o <= 50 rpm				
			Attained Gear	r <= Sixth				
			Attained Gear	r>= First				
			Throttle Position	n>= 8.0001831 pct				
			Output Speed	d>= 200 rpm				
			If the above conditions are met Increment Fail Timer				>= 20 Seconds	
			Fail Case_ 6 Current range	e = lllegal (bit state 0000 or 1000 or 0001)	A Open Circuit Definition (flag set false if the following conditions are met):			
			and	d	Current Range	Transitio		
			A Open Circuit (See Definition)		or			
					Last positive state or	Neutral ≠ (bit state 0101)		
					Previous transition state	Transitio ≠ n 8 (bit state 0111)		
					Fail case 5 delay timer	= 0 sec		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
		Docompilan	If the above Condtions are met then, Increment Fail timer				>= 6.25 Seconds	
			Fail Case       Z       Current PRNDL State	PRNDL circuit ABCP = Range 1101				-
			and	PRNDL				
			Previous PRNDL state	= ABCP Range =1111				
			Input Speed Reverse Trans Ratio					
			Reverse Trans Ratio	>= 3.2741699 ratio				
			If the above Condtions are met then, Increment Fail timer				>= 6.25 Seconds	
			P182E will report test fail when any of the above 7 fail cases are met					-
					Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within	<= 31.999 Volts >= 400 RPM <= 7500 RPM		
					the allowable limits for Engine Torque Signal Valid			

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria			shold Ilue	Secondary Malfunction		Enable Conditions			Tin Requ		Mil Illum.
						Disable Conditions:	DTC's:	TCM: P071 P0723, P07 P077D ECM: P010 P0106, P01 P0172, P01 P0202, P02 P0206, P02 P0301, P03 P0305, P03 P0401, P04	C0, P07BF 01, P0102, I 07, P0108, 74, P0175, 03, P0204, 07, P0208, 02, P0303, 06, P0307,	, P077C, P0103, P0171, P0201, P0205, P0300, P0304,				
Internal Mode Switch (IMS)	P1915	Internal Mode Switch Does Not Indicate Park/Neutral (P/N) During Start	PRNDL State is The following events must occur Sequentially		Park or Neutral	Enumeration								One Trip
			Initial Engine speed	<=	50	RPM					>=	0.25	Enable Time (Sec)	
			Then Engine Speed Between Following Cals										(Sec)	
			Engine Speed Lo Hist	>=	50	RPM								
			Engine Speed Hi Hist	<=	480	RPM					>=	0.06875	Enable Time (Sec)	
			Then Final Engine Speed	>=	525	RPM								
			Final Transmission Input Speed		100	RPM					>=	1.25	Fail Time (Sec)	
							DTC has Ran this Key Cycle?	=	FALSE	Boolean			()	
							Ignition Voltage Lo Ignition Voltage Hi	>= <=	6 31.999	V V				
							Ignition Voltage Hyst High (enables above this value)	>=	5	V				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		eshold alue	Secondary Malfunction		Enable Conditions			Tir Requ		Mil Illum.
						Ignition Voltage Hyst Low (disabled below this value) Transmission Output Speed	<=	2 90	V rpm				
						P1915 Status is	¥	Test Failed This Key On or Fault Active					
					Disable Conditions:	DTC's:							
Transmission Control Module (TCM)	P2534	Ignition Switch Run/Start Position Circuit Low	thresholds below)	= FALSE	Boolean								One Trip
			Ignition Voltage High Hyst (run crank goes true when above this value)	5	Volts					>=	280	Fail Counts (25ms loop)	
			Ignition Voltage Low Hyst (run crank goes false when below this value)	2	Volts					Out of	280	Sample Counts (25ms loop)	
						ECM run/crank active status available ECM run/crank active status	=	TRUE TRUE	Boolean Boolean				
					Disable Conditions:	DTC's:							
Transmission Control Module (TCM)	P2535	Ignition Switch Run/Start Position Circuit High	thresholds below)	= TRUE	Boolean								One Trip
			Ignition Voltage High Hyst (run crank goes true when above this value)	5	Volts					>=	280	Fail Counts (25ms loop)	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		shold Ilue	Secondary Malfunction	(	Enable Conditions			Tim Requi		Mil Illum.
			Ignition Voltage Low Hyst (run crank goes false when below this value)	2	Volts					Out of	280	Sample Counts (25ms loop)	
						ECM run/crank active status available ECM run/crank active status	=	TRUE FALSE	Boolean Boolean				
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						
Variable Bleed Solenoid (VBS)	P2714	Pressure Control (PC) Solenoid D Stuck Off [CB26]	Fail Case Case: Steady State 2nd 1 Gear								lease See		One Trip
			Gear slip	>= 400	RPM					>=	able 5 For Neutral Time Cal	Neutral Timer (Sec)	
			Intrusive test: commanded 3rd gear	Table Based									
			If attained Gear = 3rd for Time	Time >= Please see Table 2 in Supporting	1								
			If Above Conditions have been met	Documents	3								
			Increment 2nd gear fail count							>=	3	2nd Gear Fail Count or	
			and CB26 Fail Count							>=	14	CB26 Fail Count	
			2 Case: Steady State 6th Gear Gear slip	>= 400	RPM					>= <sup>T</sup>	lease See able 5 For Neutral Time Cal		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions				me uired	Mil Illum.
	Goue	Description	Intrusive test: commanded 5th gear									
				Documents								
			If Above Conditions have been met, Increment 5th gear fail counter						>=	3	5th Gear Fail Count	
			and CB26 Fail Count						>=	14	or CB26 Fail	
					PRNDL State defaulted	=	FALSE	Boolean			Count	
					inhibit RVT	=	FALSE	Boolean				
					IMS fault pending indication	=	FALSE	Boolean				
					TPS validity flag	=	TRUE	Boolean				
					Hydraulic System Pressurized	=	TRUE	Boolean				
					Minimum output speed for RVT	>=	0	RPM				
					A OR B (A) Output speed enable	>=	67	RPM				
					(B) Accelerator Pedal enable	>=	0.50049	Pct				
					Common Enable Criteria		0 50004	) / - lt -				
					Ignition Voltage Lo Ignition Voltage Hi	>= <=	8.59961 31.999	Volts Volts				
					Engine Speed Lo	>=	400	RPM				
					Engine Speed Hi	<=	7500	RPM				
					Engine Speed is within the allowable limits for	>=	5	Sec				
					Throttle Position Signal valid	=	TRUE	Boolean				
					HSD Enabled	=	TRUE	Boolean				
					Transmission Fluid Temperature	>=	-6.6563	°C				
					Input Speed Sensor fault	=	FALSE	Boolean				
					Output Speed Sensor fault	=	FALSE	Boolean				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	1	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
						Default Gear Option is not present	= TRUE		
				Co	Disable onditions:		TCM: P0716, P0717, P0722, P0723, P182E		
							ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Variable Bleed Solenoid (VBS)	P2715	Pressure Control (PC) Solenoid D Stuck On [CB26] (Dynamic)	Primary Offgoing Clutch is exhausted (See Table 13 in Supporting Documents for Exhaust Delay Timers) Primary Oncoming Clutch Pressure Command Status Primary Offgoing Clutch Pressure Command Status	= TRUE Boo = Maximum pressurized Clutch Clutch	blean				One Trip
			Range Shift Status Attained Gear Slip	Initial ≠ Clutch Control	M				
			If above coditons are true, increment appropriate Fail 1 Timers Below: fail timer 1 (2-1 shifting with throttle) fail timer 1 (2-1 shifting without throttle) fail timer 1 (2-3 shifting with throttle) fail timer 1 (2-3 shifting without throttle)	>= 0.2998047 Fail >= 0.5 Fail >= 0.2998047 Fail >= 0.2998047 Fail	I Time ec) I Time ec) I Time				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Tim Requi	
			fail timer 1 (2-4 shifting with throttle) fail timer 1 (2-4 shifting without throttle) fail timer 1 (6-4 shifting with throttle) fail timer 1 (6-5 shifting with throttle) fail timer 1	$\begin{array}{r} \text{Sec} \text{ on } \text{Sec} \text{Sec} \text{ on } \text{Sec} $			Total Fail	
			If Attained Gear Slip is Less than Above Cal Increment Fail Timers				>= Total Pail Time = (Fail 1 + Fail 2) See Enable Timers for Fail Timer 1, and Reference Supporting Table 15 for Fail Timer 2	sec
			If fail timer is greater than threshold increment corresponding gear fail counter and total fail counter					
			2nd gear fail counter				>= 3	Fail Counter From 2nd Gear OR
			6th gear fail counter				>= 3	Fail Counter From 6th Gear OR
			total fail counter				>= 5	Total Fail Counter
					TUT Enable temperature Input Speed Sensor fault	>= -6.6563 ⁰C = FALSE Boolea	1	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Thres Val		Secondary Malfunction		Enable Conditions		Time Required	Mil Illum.
						Output Speed Sensor fault	=	FALSE	Boolean		
						Command / Attained Gear	¥	1st	Boolean		
						High Side Driver ON output speed limit for	=	TRUE	Boolean		
						TUT	>=	100	RPM		
						input speed limit for TUT PRNDL state defaulted	>= =	150 FALSE	RPM Boolean		
						IMS Fault Pending		FALSE	Boolean		
						Service Fast Learn Mode	=	FALSE	Boolean		
						HSD Enabled	=	TRUE	Boolean		
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0716, P0723, P182		0722,		
							ECM: P0101		0103		
							P0106, P010	7, P0108,	P0171,		
							P0172, P017 P0202, P020				
							P0206, P020 P0301, P030				
							P0305, P030	6, P0307,			
	ļ	Pressure Control (PC)	Fail Case				P0401, P042	E			One
Variable Bleed Solenoid (VBS)	P2715	Solenoid D Stuck On [CB26] (Steady State)	<u>1</u> Case: Steady State 1st								Trip
			Attained Gear slip	>= 400	RPM						
			If the Above is True for Time		Enable Time						
				Refer to Table 4 in supporting documents	(Sec)						
			Intrusive test: (CBR1 clutch exhausted)								

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			Gear Ratio	<= 2.4821777				
			Gear Ratio	>= 2.2458496				
			If the above parameters are true					
			liue				>= 1.1 Fail Timer	
							>= 1.1 (Sec) >= 5 Fail Count in	1
							or	
							>= 5 Total Fail Counts	
			Fail Case Case: Steady State 3rd					
				Table Based				
			Mary Dalka Orderst Orders	value				
			Max Delta Output Speed Hysteresis	Refer to				
				Table 22 in supporting				
				documents Table				
				Based value				
			Min Delta Output Speed Hysteresis	Please				
				Table 23 in supporting				
				documents				
				Table Based				
			If the Above is True for Time	Time Please >= Defecto Sec				
				>= Refer to Table 17 in				
				supporting documents				
			Intrusive test: (C35R clutch exhausted)					
				<= 2.4821777				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
				>= 2.2458496				
			If the above parameters are true					
							>= 1.1 Fail Timer (Sec)	
							>= 3 Fail Count in 3rd Gear	1
							or Total Fail	
			Fail Case Case: Steady State And				>= 5 Counts	-
			Fail Case         Case: Steady State 4rd           3         Gear					
				Table Based				
			Max Delta Output Speed	value Please rpm/coc				
			Hysteresis	>= Refer to Table 22 in				
				supporting				
				documents Table				
				Based value				
			Min Delta Output Speed Hysteresis	Please mm (acc				
				Table 23 in				
				supporting documents				
				Table Based				
				Time Please Soc				
			If the Above is True for Time	>= Please Sec Refer to Table 17 in				
				supporting				
			Intrusive test:	documents				
			(C1234 clutch exhausted)					
			Gear Ratio	<= 0.7003174				
			Gear Ratio	>= 0.633667				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			If the above parameters are true					
							>= 1.1 Fail Timer (Sec)	
							>= 3 Fail Count in 4th Gear	l I
							>= 5 Or Counts	
			Fail Case 4 Case: Steady State 5th Gear					1
			– Max Delta Output Speed Hysteresis	Table Based value Please Refer to Table 22 in supporting documents				
			Min Delta Output Speed Hysteresis	Table Based value Please Refer to Table 23 in supporting documents				
			If the Above is True for Time	Table Based Time Please Refer to Table 17 in supporting documents				
			Intrusive test: (C35R clutch exhausted)					
			Gear Ratio	<= 0.7003174				
				>= 0.633667				
			If the above parameters are true					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditio	IS		Tiı Requ	me uired	Mil Illum.
-		•						>=	1.1	Fail Timer (Sec)	
								>=	3	Fail Count in 5th Gear or	
								>=	5	Total Fail Counts	
					PRNDL State defaulted inhibit RVT IMS fault pending	= FALS	Boolean				
					indication output speed	= FALS >= 0	Boolean RPM				
					TPS validity flag HSD Enabled	= TRUE					
					Hydraulic_System_Press urized A OR B	= 160	Boolean				
					<ul><li>(A) Output speed enable</li><li>(B) Accelerator Pedal</li></ul>	>= 67 >= 0.5004	Nm 9 Nm				
					enable Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi	>= 8.5996 <= 31.99 >= 400	1 Volts				
					Engine Speed is within the allowable limits for	>= 5	Sec				
					if Attained Gear=1st FW Accelerator Pedal enable	>= 5.0003	1 Pct				
					if Attained Gear=1st FW Engine Torque Enable	>= 5	Nm				
					if Attained Gear=1st FW Engine Torque Enable Transmission Fluid						
					Temperature Input Speed Sensor fault						
					Output Speed Sensor fault	= FALS	Boolean				
					Default Gear Option is not present	= TRUE					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		eshold alue	Secondary Malfunction	Enable Conditions		Tiı Requ		Mil Illum.
					Disable Conditions:	DTC's:	TCM: P0716, P0717, P0722, P0723, P182E ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E				
Variable Bleed Solenoid (VBS)		Pressure Control (PC) Solenoid D Control Circuit Low (CB26 VBS)	The HWIO reports a low voltage (ground short) error flag	= TRUE	Boolean			>= out	0.3 0.375	Fail Time (Sec) Sample Time	One Trip
					Disable Conditions:	DTC's:	On or         Fault           Active         >=           >=         8.559961         Volts           <=	of	0.375	(Sec)	
Variable Bleed Solenoid (VBS)	P2721	Pressure Control (PC) Solenoid D Control Circuit High (CB26 VBS)	The HWIO reports a high voltage (open or power short) error flag	= TRUE	Boolean			>= out of	0.3 0.375	Fail Time (Sec) Sample Time (Sec)	One Trip

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum
		Completi			P2721 Status is not	Test Failed This Key		
					Ignition Voltage Ignition Voltage Engine Speed Engine Speed is within the allowable limits for	>= 8.59961 Volts <= 31.999 Volts >= 400 RPM <= 7500 RPM		
				Disable Conditions:	DTC's:			
Variable Bleed Solenoid (VBS)	P2723	Pressure Control (PC) Solenoid E Stuck Off	Fail Case Case: Steady State 1st Gear Gear slip Intrusive test: commanded 2nd gear				Please See Table 5 For Neutral Neutral Timer (Sec) Time Cal	One Trip
			If attained Gear ≠ 2nd for Time If Above Conditions have been met, Increment 1st	Please refer to Table 3 in Supporting Documents			>= 3 1st Gear Fai	il
			gear fail counter and C1234 fail counter Fail Case Case: Steady State 2nd 2 Gear				>= 3 Count or C1234 >= 14 Clutch Fail Count	

Compo Syste		Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
		Gear slip	>= 400 RPM			Please See Table 5 For Neutral Neutral Timer (Sec) Time Cal	
		Intrusive test: commanded 3rd gear					
		If attained Gear ≠ 3rd for Time					
		If Above Conditions have been met, Increment 2nd gear fail counter				>= 3 2nd Gear Fail Count	
		and C1234 fail counter				or C1234 >= 14 Clutch Fail Count	
		Fail Case     Case: Steady State 3rd       3     Gear       Gear slip				Please See Table 5 For Neutral Neutral Timer (Sec)	
		Intrusive test: commanded 4th gear	Please			Time Cal	
		If attained Gear ≠ 4th for time	Supporting Documents				
		If Above Conditions have been met, Increment 3rd gear fail counter				>= 3 3rd Gear Fail Count or	
		and C1234 fail counter				C1234 >= 14 Clutch Fail Count	
		Fail Case Case: Steady State 4th Gear					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions			Tim Requi		Mil Illum.
			Gear slip						>= <sup>Ta</sup>	ease See able 5 For Neutral Time Cal		
			Intrusive test: commanded 5th gear	·								
			If attained Gear = 5th For Time									
			If Above Conditions have been met, Increment 4th gear fail counter						>=	3	4th Gear Fail Count	
			and C1234 fail counter						>=	14	or C1234 Clutch Fail Count	
					PRNDL State defaulted inhibit RVT	=	FALSE FALSE	Boolean Boolean				
					IMS fault pending indication	=	FALSE	Boolean				
					TPS validity flag Hydraulic System	=	TRUE TRUE	Boolean Boolean				
					Pressurized Minimum output speed	=						
l					for RVT A OR B	>=	0	RPM				
					<ul><li>(A) Output speed enable</li><li>(B) Accelerator Pedal</li></ul>	>=	67	RPM Pct				
					enable Common Enable Criteria	>=	0.50049					
					Ignition Voltage Lo Ignition Voltage Hi	>= <=	8.59961 31.999	Volts Volts				
					Engine Speed Lo	>=	400	RPM				
					Engine Speed Hi	<=	7500	RPM				
					Engine Speed is within the allowable limits for	>=	5	Sec				
					Throttle Position Signal valid	=	TRUE	Boolean				
					HSD Enabled	=	TRUE	Boolean				1
					Transmission Fluid Temperature	>=	-6.6563	°C				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					Input Speed Sensor fault Output Speed Sensor fault Default Gear Option is not present	= FALSE Boolean = FALSE Boolean - TRUE		
				Di Condit	able MIL not Illuminated for ons: DTC's:	TCM: P0716, P0717, P0722, P0723, P182E		
						ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Variable Bleed Solenoid (VBS)		Pressure Control (PC) Solenoid E Stuck On (Dynamic)	Primary Offgoing Clutch is exhausted (See Table 10 in Supporting Documents for Exhaust Delay Timers) Primary Oncoming Clutch Pressure Command Status Primary Offgoing Clutch Pressure Command Status Range Shift Status	= TRUE Boolean Maximum pressurized Clutch = exhaust command Initial				One Trip
			Attained Gear Slip If the above conditions are true increment appropriate Fail 1 Timers Below: fail timer 1 (2-6 shifting with throttle) fail timer 1 (2-6 shifting without throttle)	<= 40 RPM				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
		·	fail timer 1 (3-5 shifting with throttle)	>= 0.2998047 sec				
			fail timer 1 (3-5 shifting without throttle)	>= 0.5 sec				
			(4-5 shifting with throttle)	>= 0.2998047 sec				
			fail timer 1 (4-5 shifting without throttle)	>= 0.5 sec				
			fail timer 1 (4-6 shifting with throttle)	>= 0.2998047 sec				
			fail timer 1 (4-6 shifting without throttle)	>= 0.5 sec				
			If Attained Gear Slip is Less than Above Cal Increment Fail Timers				Total Fail Time = (Fail 1 + Fail 2) See Enable Timers for Fail Timer 1, and Reference Supporting Table 15 for Fail Timer 2	
			If fail timer is greater than threshold increment corresponding gear fail counter and total fail counter					
			2nd gear fail counter				Fail Count >= 3 From 2nd Gear	
			3rd gear fail counter				Fail Count >= 3 From 3rc Gear	
			4th gear fail counter				Fail Count >= 3 From 4th Gear	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Thres Val		Secondary Malfunction		Enable Conditions			Time Requir		Mil Illum.
			total fail counter							>=	5	Total Fail Counter	
						TUT Enable temperature Input Speed Sensor fault Output Speed Sensor	>= =	-6.6563 FALSE FALSE	°C Boolean Boolean				
						fault Command / Attained	¥	1st	Boolean				
						Gear High Side Driver ON	=	TRUE	Boolean				
						output speed limit for TUT	>=	100	RPM				
						input speed limit for TUT PRNDL state defaulted IMS Fault Pending	>= = =	150 FALSE FALSE	RPM Boolean Boolean				
						Service Fast Learn Mode	=	FALSE	Boolean				
						HSD Enabled	=	TRUE	Boolean				
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P07 P0723, P <sup>-</sup>		P0722,				
							P0106, P0 P0172, P0 P0202, P0 P0206, P0 P0301, P0	01, P0102, F 0107, P0108, 0174, P0175, 0203, P0204, 0207, P0208, 0302, P0303, 0306, P0307, 042E	P0171, P0201, P0205, P0300, P0304,				
Variable Bleed Solenoid (VBS)	P2724	Pressure Control (PC) Solenoid E Stuck On (Steady State)	Fail Case 1 Case: 5th Gear										One Trip
			Max Delta Output Speed Hysteresis		rpm/sec								

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary Malfunction	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
	1 1			Table				
	1 1			Based				
	1 1		Min Dalta Outrat Oracad	value				
	1 1		Min Delta Output Speed					
	1 1		Hysteresis	Table 23 in				
	1 1			supporting				
	1 1			documents				
	1 1			Table				
	1 1			Based				
	1 1			Time				
	1 1		If the Above is True for Time	>= Please Sec				
	1 1			Refer to				
	1 1			Table 17 in				
	1 1			supporting documents				
	1 1		Intrusive test:					
	1 1		(C35R clutch exhausted)					
	1 1							
	1 1		Gear Ratio	<= 1.2095947				
			Gear Batio	>= 1.0943604				
	1 1		If the above parameters are true					
	1 1		lide				Fail Timer	
	1 1						>= 1.1 (Sec)	
	1 1						Fail Count i	n
	1 1						>= 3 5th Gear	
	1 1						OR	
	1 1						>= 3 Total Fail	
	1 1						>= 3 Counts	_
	1 1		Fail Case Case: 6th Gear					
	1 1		2					
				Table				
				Based value				1
			Max Delta Output Speed	Diseas				1
			Hysteresis	>= Refer to rpm/sec				1
			Typtoroolo	Table 22 in				
				supporting				1
				documents				

Mil I Illum.
Fail Timer (Sec) ail Count in
6th Gear OR Total Fail
Counts

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		shold lue	Secondary Malfunction		Enable Conditions			Tiı Requ		Mil Illum.
						(B) Accelerator Pedal enable	>=	0.50049	Nm				
						Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi	>= <= >= <=	8.59961 31.999 400 7500	Volts Volts RPM RPM				
						Engine Speed is within the allowable limits for	>=	5	Sec				
						if Attained Gear=1st FW Accelerator Pedal enable	>=	5.00031	Pct				
						if Attained Gear=1st FW Engine Torque Enable if Attained Gear=1st FW	>=	5	Nm				
						Engine Torque Enable Transmission Fluid	<=	8191.88	Nm				
						Temperature Input Speed Sensor fault	>=	-6.6563 FALSE	⁰C Boolean				
						Output Speed Sensor fault	=	FALSE	Boolean				
						Default Gear Option is not present	=	TRUE					
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P07 P0723, P1	′16, P0717, F I82E	90722,				
							P0106, P0 P0172, P0 P0202, P0 P0206, P0	01, P0102, F 0107, P0108, 0174, P0175, 0203, P0204, 0207, P0208,	P0171, P0201, P0205, P0300,				
								)302, P0303, )306, P0307, )42E					
/ariable Bleed Solenoic VBS)	<sup>1</sup> P2729	Pressure Control (PC) Solenoid E Control Circuit Low (C1234 VBS)	The HWIO reports a low voltage (ground short) error flag	= TRUE	Boolean					>=	0.3	Fail Time (Sec)	One Trip
										out of	0.375	Sample Time (Sec)	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
				Disabi	P2729 Status is not Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable limits for	Test         Failed           Failed         This Key           On or         Fault           Active         Sep961           >=         8.59961         Volt           <=		
				Conditions				
Variable Bleed Solenoid (VBS)	P2730	Pressure Control (PC) Solenoid E Control Circuit High (C1234 VBS)	The HWIO reports a high voltage (open or power short) error flag	= TRUE Boolean			>= 0.3 Fail Time (Sec) out 0.375 Sample Time of 0.375 (Sec)	One Trip e
					P2730 Status is not Ignition Voltage Ignition Voltage	On or Fault Active >= 8.59961 Volt <= 31.999 Volt		
					Engine Speed Engine Speed Engine Speed is within the allowable limits for	<= 7500 RPM		
				Disabl Conditions				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		reshold Value	Secondary Malfunction	Enable Conditio	s			me uired	Mil Illum.
Variable Bleed Solenoid (VBS)	P2763	Torque Converter Clutch Pressure High	The HWIO reports a low pressure/high voltage (open or power short) error flag	= TRUE	Boolean				>=	4.4	Fail Time (Sec)	Two Trips
									out of	5	Sample Time (Sec)	
						P2763 Status is not Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable limits for High Side Driver Enabled	>= 8.5996 <= 31.99 >= 400 <= 7500 >= 5	y 1 Volt Volt RPM RPM Sec				
					Disable Conditions:	MIL not Illuminated for DTC's:		Dooldan				
Variable Bleed Solenoid (VBS)	P2764	Torque Converter Clutch Pressure Control Solenoid Control Circuit Low	The HWIO reports a high pressure/low voltage (ground short) error flag	= TRUE	Boolean				>= out of	4.4 5	Fail Time (Sec) Sample Time (Sec)	One Trip
						P2764 Status is not Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable limits for High Side Driver Enabled	<= 31.99 >= 400 <= 7500 >= 5	y 1 Volt Volt RPM RPM Sec			(Sec)	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		reshold /alue	Secondary Malfunction	Enable Conditions			me uired	Mil Illum.
					Disable Conditions:	DTC's:					
Communication	U0073	Controller Area Network Bus Communication Error	CAN Hardware Circuitry Detects a Low Voltage Error	= TRUE	Boolean			>=	62	Fail counts (≈ 10 seconds)	One Trip
			Delay timer	>= 0.1125	sec			Out of	70	Sample Counts (≈ 11 seconds)	
						Stabilization delay Ignition Voltage Ignition Voltage Power Mode	>= 8.59961 Volt <= 31.999 Volt			,	
					Disable Conditions:	DTC's:					
Communication	U0100	Lost Communications with ECM (Engine Control Module)	CAN messages from ECM are not received by the TCM	= TRUE	Boolean			>=	12	sec	One Trip
						Stabilization delay Ignition Voltage Ignition Voltage Power Mode	>= 8.59961 Volt <= 31.999 Volt				
					Disable Conditions:	DTC's:					

# 16 OBDG07A Diagnostic 2D Tables - TCM (6 Speed Common)

# Supporting Documents

Table 1	Axis	0.00	64.00	128.00	192.00	256.00	320.00	384.00	448.00	512.00 N*m
	Curve	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00 RPM
Table 2	Axis	-6.67	-6.66	40.00 °C						
	Curve	409.59	2.00	2.00 Sec						
	ourro	100.00	2.00	2.00 000						
Table 3	🗖			10.00						
	Axis	-6.67 409.59	-6.66	40.00 ℃ 4.00 Sec						
	Curve	409.59	4.00	4.00 Sec						
Table 4										
	Axis	-6.67	-6.66	40.00 °C						
	Curve	409.59	2.00	2.00 Sec						
Table 5										
	Axis	-6.67	-6.66	40.00 °C						
	Curve	409.59	3.00	3.00 Sec						
Table 6										
10000	Axis	-6.67	-6.66	40.00	80.00	120.00 °C				
	Curve	409.00	3.60	1.60	1.40	1.40 Sec				
Table 7										
	Axis	-6.67	-6.66	40.00	80.00	120.00 °C				
	Curve	409.00	3.40	1.40	1.30	1.20 Sec				
		· · · ·		·	· ·					
<b>T</b> 1 1 0										
Table 8	Axis	-6.67	-6.66	40.00	80.00	120.00 °C				
	Curve	409.00	3.60	1.60	1.50	1.40 Sec				
Table 9										
	Axis Curve	-6.67 409.00	-6.66 3.30	40.00 1.30	80.00 1.20	120.00 ⁰C 1.10 Sec				
	Guive	409.00	3.30	1.50	1.20	1.10 300				
Table 10										
	Axis	-40.00	-20.00	0.00	30.00	110.00 °C				
	Curve	3.03	1.86	1.00	0.75	0.58 Sec				

# 16 OBDG07A Diagnostic 2D Tables - TCM (6 Speed Common)

Table 11				Supporting	g Documen	<u>ts</u>				
	Axis	-40.00	-20.00	0.00	30.00	110.00 °C				
	Curve	1.72	1.11	0.60	0.36	0.22 Sec				
Table 12										
	Axis Curve	-40.00 2.12	-20.00 1.39	0.00	30.00 0.64	110.00 ⁰C 0.33 Sec				
	Guive	2.12	1.00	0.04	0.04	0.00 000				
Table 13										
	Axis	-40.00 2.51	-20.00	0.00	30.00	110.00 °C				
	Curve	2.51	0.95	0.50	0.29	0.13 Sec				
Table 14										
<u></u>	Axis	-40.00	-20.00	0.00	30.00	110.00 °C				
	Curve	2.97	0.82	0.47	0.20	0.13 Sec				
Table 15										
	Axis	-40.00	-30.00	-20.00	-10.00	0.00	10.00	20.00	30.00	40.00 °C
	Curve	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00 Sec
Table 16	Axis	-6.67	-6.66	40.00 °C						
	Curve	409.59	2.50	2.50 Sec						
Table 17	Axis	-6.67	-6.66	40.00 °C						
	Curve	0.40	0.35	0.30 Sec						
Table 18	Avia	-40.10	-40.00	-20.00	0.00	30.00	60.00	100.00	149.00	149.10 °C
	Axis Curve	256.00	50.00	45.00	0.00 40.00	34.00	25.00	20.00	20.00	256.00 °C
Table 19					1					
	Axis Curve	-40.10 256.00	-40.00 50.00	-20.00 45.00	0.00	30.00 34.00	60.00 25.00	100.00 20.00	149.00 20.00	149.10 °C 256.00 °C
		200.00				000	20.00	20.00	20.00	
Table 20										
	Axis	-40.10	-40.00	-20.00	0.00	30.00	60.00	100.00	149.00	149.10 °C
	Curve	256.00	10.00	8.00	8.00	8.00	8.00	8.00	8.00	256.00 °C

# 16 OBDG07A Diagnostic 2D Tables - TCM (6 Speed Common)

# Supporting Documents

Table 21	_				-
	Axis	-40.00	-20.00	40.00	°C
	Curve	5.00	3.00	1.00	Sec
	-				
Table 22					
_	Axis	-6.67	-6.66	40.00	°C
	Curve	8191.75	8191.75	8191.75	RPM/Sec
-					
Table 23					
	Axis	-6.67	-6.66	40.00	°C
	Curve	8191.75	8191.75	8191.75	RPM/Sec
	Axis Curve Axis	-6.67 8191.75 -6.67	-6.66 8191.75 -6.66	40.00 8191.75 40.00	⁰C RPM/Sec ⁰C

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions		Time Required	Mil Illum.
Transmission Control Module (TCM)	C1251	The lateral accleration signal is stuck at a high magnitude in range	Lateral accleration magnitude	<= 3.849999905 g's						Special No MIL
(ICM)		at a nigh magnitude in range	Lateral accleration magnitude	>= 0.529999971 g's						NO WILL
			Lateral accleration magnitude is	>= 75 Sec						
			within the range above for	>= 75 380						
					Lateral accleration magnitude	<=	3.8499999	g's		
					Lateral accleration magnitude	>=	0.53	y s g's		
					Lateral accleration magnitude	~-				
					is within the range above for	>=	60	Sec		
					Diagnostic shifting override		FALSE	Deeleen		
					command	=	FALSE	Boolean		
							1st through			
					Attained Gear State	=	6th			
					Attained Gear Slip	<=	100	RPM		
					Attained ocar onp	-	Clutch to			
					T		Clutch			
					Transmission Type	=	Transmissi			
							on			
					High Side Driver 1 On	=	TRUE	Boolean		
					Vehicle Speed	>=	15	kph		
					Lateral acceleration stuck in	=	1	Boolean		
					range diagnostic enable Battery Voltage	<=	31.999023	Volts		
					Battery Voltage	>=	9 9	Volts		
					Battery voltage is within the					
					allowable limits for	>=	0.1	Sec		
					Ignition Voltage	<=	31.999023	Volts		
					Ignition Voltage	>=	9	Volts		
					Service Fast Learn (SFL) Mode	=	FALSE	Boolean		
					Ignition voltage and SFL					
					conditions met for	>=	0.1	Sec		
										1 1

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Thi N	eshold /alue	Secondary Malfunction		Enable Conditions				me uired	Mil Illum.
					Disable Conditions:	DTC's:	(P0716, P071	7, P0721, P072 0, P077B, P072	22, P0723,				
Mode Switch	P071A	Transmission Mode Switch A Circuit	Tow Haul Mode Switch state	= TRUE	Boolean					>=	600	Fail Time (Sec)	Special No MIL
						Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for	>= <= >= <= >=	8.5996094 31.999023 400 7500 5	Volts Volts RPM RPM Sec				
					Disable Conditions:	DTC's:	TCM: P1762 ECM: None						
Mode Switch	P1762	Transmission Mode Switch Signal Circuit (rolling count)	Rolling count value received from BCM does not match expected value		Boolean					>=	3	Fail Counter	Special No MIL
										>	10	Sample Timer (Sec)	
						Pattern Switch Message Health	=	TRUE	Boolean				
						Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for	>= <= >=	400 7500 5	RPM RPM Sec				
					Disable Conditions:		TCM: None ECM: None						

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		reshold /alue	Secondary Malfunction		Enable Conditions			Tim Requi		Mil Illum.
Transmission Control Module (TCM)	P0561	Battery to ignition voltage performance error at the TCM for an extended period of time.	delta = ABS(TCM battery voltage - TCM ignition voltage)	>= 3	Volts					=	40	Fail counts (100ms loop)	One Trip
										Out of	50	Sample Counts (100ms loop)	
						battery to ignition voltage performance diagnostic enable calibration	=	1					
						TCM has battery voltage circuit	=	1	Boolean				
						Service mode \$04 active and end of trip pocessing active	=	FALSE	Boolean				
						Ignition Voltage Hyst Hi (enabled above this value)	>	5	Volts				
						Ignition Voltage Hyst Lo disabled below this value)	<=	2	Volts				
					Disable Conditions:	MIL not Illuminated for DTC's:							
							ECM: None						
Transmission Control Module (TCM)	P0601	Transmission Electro-Hydraulic Control Module Read Only Memory	Incorrect program/calibrations checksum	= TRUE	Boolean					>=	5	Fail Counts (background task continuous)	One Trip
						NVM write error diagnotic enable	=	1	Boolean				
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0601						
					Conditions:		ECM: None						
Transmission Control Module (TCM)	P0603	Transmission Electro-Hydraulic Control Module Long-Term Memory Reset	Non-volatile memory (static or dynamic) checksum failure at controller initialization		Boolean					С	Runs Continously		One Trip
						not programmed diagnotic enable	=	1	Boolean				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		reshold Value	Secondary Malfunction	c	Enable Conditions			Tiı Requ		Mil Illum.
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0603 ECM: None						
Transmission Control Module (TCM)		Transmission Electro-Hydraulic Control Module Random Access Memory	secondary micro processor RAM error OR	= IKUE	Boolean							1000 ms cont.	One Trip
			dual store RAM write time out error	· = TRUE	Boolean					>	175	seconds (interrupt driven based on calling functions)	
			OR system RAM fault	: = TRUE	Boolean					>=	3	counts (controller initialization and background task continuous)	
			cashe RAM fault	: = TRUE	Boolean					>=	3	counts (controller initialization and background task continuous)	ć
			secondary micro processor micro code error	. = TRUE	Boolean					>=	3	counts (controller initialization and background task continuous)	
			OR write attempt occurred during RAM lock		Boolean	Service mode \$04 active or end of trip processing active		FALSE	Boolean	>	65534	counts (background task continuous)	)

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Threshold Value	Secondary Malfunction		Enable Conditions				me uired	Mil Illum.
			main processor RAM circuit hardware failure	= TRL	E Boolean	RAM diagnotic test enable	=	1	Boolean	>=	5	counts (controller initialization)	
			OR			hardware reset source is controller power up reset	=	TRUE	Boolean			·	
			main processor flash EPROM circuit hardware failure	= TRL	E Boolean	flash EPROM diagnotic test enable	=	1	Boolean	>=	5	counts (controller initialization)	
			OR			hardware reset source is controller power up reset	=	TRUE	Boolean			Initializationy	
			OR main processor memory stack failure	= TRL	E Boolean	Service mode \$04 active and end of trip pocessing active	=	FALSE	Boolean	>=	5	counts (100 msec continuous)	
			OR			main processor memory stack test enable	=	1	Boolean			····,	
			secondary processor memory stack failure	= TRL	E Boolean	secondary processor memory stack test enable	=	1	Boolean	>=	5	counts (12.5 msec continuous)	
			OR secondary micro processor remedial action active on request	= FALS	SE Boolean					>=	1	counts (controller power up, 12.5 ms continuous)	<b>7</b>
			OR main processor ROM first test complete	= FALS	SE Boolean					>=	35	counts (12.5 msec continuous)	
			OR secondary processor to main processor seed sequence fault OR	= TRL	E Boolean					>=	0.5	seconds	
			seed sequence error	≠ FALS	SE Boolean	program sequence watch communication fault	=	FALSE	Boolean	>=	3	counts (12.5 msec continuous)	
						main processor to secondary processor serial peripheral interface error	=	FALSE	Boolean	>=	17	counts (12.5 msec continuous)	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions			Time Requir		Mil Illum.
-					seed sequence test enable	=	see table 50 in supporting documents	Boolean				
			OR		battery voltage ignition voltage	> >=	11 11	Volts volts				
			seed key fault current loop	= TRUE Boolean	seed key test enable	=	see table 50 in supporting documents	Boolean				
					seed key fault previous loop Service mode \$04 active and	=	TRUE	Boolean				
			OR		end of trip processing active	=	FALSE	Boolean				
			normalize 0-5 volt (absolute value (analog to digital test voltage commanded - actual analog to digital voltage feedback))	> 3.298950195 percent	analog to digital voltage test enabled	=	1	Boolean	>=	3	counts (50 msec continuous)	
					ignition voltage	>=	7	Volts	>=	8	counts (50 msec continuous)	
					analog to digital voltage channel enabled	=	see Table 46 in supporting documents	Boolean				
					analog to digital test voltage command	=	see Table 47 in supporting documents	Volts	>=	0.2	seconds	
			OR		Service mode \$04 active and end of trip processing active	=	FALSE	Boolean				
			arithmatic logic unit 1 test pass	= FALSE Boolean	arithmatic logic unit test enable	=	1	Boolean	i	at controller nitialization, nen 12.5 ms cont.		
					arithmatic logic unit 1 test pass previous loop	=	FALSE	Boolean				
					Service mode \$04 active and end of trip processing active A and B and C must occur	=	FALSE	Boolean				
					A: starter motor engaged	=	TRUE	Boolean				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		eshold /alue	Secondary Malfunction		Enable Conditions		Time Required	Mil Illum.
						B: ignition voltage	<=	11	Volts		
						C: starter motor engaged time	<	0.025	sec		
						A and B must occur A: ignition voltage B: ignition low voltage time	<= >=	6.40917969 2.50E-02	Volts sec	at controller	
			arithmatic logic unit 2 test pass	= FALSE	Boolean	arithmatic logic unit test enable	=	1	Boolean	initialization, then 12.5 ms cont.	
						arithmatic logic unit 1 test pass previous loop	=	FALSE	Boolean		
						Service mode \$04 active and end of trip processing active A and B and C must occur	=	FALSE	Boolean		
						A: starter motor engaged B: ignition voltage	= <=	TRUE 11	Boolean Volts		
						C: starter motor engaged time	<	0.025	sec		
			OR secondary processor arithmatic logic unit fault OR	= TRUE	Boolean						
			clock test fail current loop	= TRUE	Boolean	clock test enable	=	1	Boolean	at controller initialization, then 12.5 ms cont.	
						clock test fail previous loop	=	TRUE	Boolean		
						Service mode \$04 active and end of trip processing active A and B and C must occur	=	FALSE	Boolean		
						A: starter motor engaged B: ignition voltage	= <=	TRUE 11	Boolean Volts		
						C: starter motor engaged time	<	0.025	sec		
			OR			A and B must occur A: ignition voltage B: ignition low voltage time	<= >=	6.40917969 2.50E-02	Volts sec		
			configuration register test fail current loop		Boolean	configuration register test enable	=	1	Boolean	at controller initialization, then 12.5 ms cont.	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions		Time Required	Mil Illum.
					configuration register test fail previous loop Service mode \$04 active and	=	TRUE FALSE	Boolean Boolean		
					end of trip processing active A and B and C must occur A: starter motor engaged B: ignition voltage	= <=	TRUE 11	Boolean Volts		
					C: starter motor engaged time	<	0.025	sec		
					A and B must occur A: ignition voltage B: ignition low voltage time	<= >=	6.40917969 2.50E-02	Volts sec		
			OR secondary processor configuration register fault OR A or B occur	= TRUE Boolean						
			A: direct memeory access (DMA) read/write test result	≠ FALSE Boolean	flash data transfer test enable	=	1	Boolean	normal controller initialization	
			B: direct memeory access (DMA) read/write value	≠ \$5AA5A55A hexadecimal value	flash data transfer test enable	=	1	Boolean	normal controller initialization	
			software uses DMA peripheral function to write and read \$5AA5A55A to flash memory locations to verify each flash		running reset	=	FALSE	Boolean		
			memory location		normal power up reset	=	TRUE	Boolean		
			secondary micro processor detects main micor processor SPI fault	= TRUE Boolean						
			OR A or B or C or D occur		seed and key store fault test enable	=	0	Boolean		
			A: last 6.25 msec seed and key time	see Table 48 > in supporting sec documents						
			B: last 12.5 msec seed and key time	see Table 48 > in supporting sec documents						

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
, , , , , , , , , , , , , , , , , , ,			C: last 50 msec seed and key time	see Table 48 > in supporting sec documents				
			D: last lores engine interrupt seed and key time					
			OR					
			A or B or C or D occur		prgram sequence watch test enable	see 3D_Table 1 in supporting documents		
			A: 6.25 msec program sequence fault fail count					
			B: 12.5 msec program sequence fault fail count	<pre>see Table 49 &gt;&gt; in supporting documents </pre> counts (50 msec continuous on 12.5 msec time interrupt)				
			C: 50 msec program sequence fault fail count	<pre>see Table 49 &gt;= in supporting documents</pre>				
			D: engine lores interrupt program sequence fault fail count	counts (on see Table 49 execution of >= in supporting engine lores documents interrupts ECM only)				
			OR secondary processor reports SPI communication fault	= TRUE Boolean	Service mode \$04 active and end of trip processing active secondary processor reports	= FALSE Boolean		
			OR		SPI communication fault previous loop	= TRUE Boolean		
			SPI valid messsage received by main micro processor	= FALSE Boolean				
							= previous SPI message type	
					A and B and C must occur			

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		eshold ′alue	Secondary Malfunction		Enable Conditions			Tin Requ		Mil Illum.
						A: starter motor engaged B: ignition voltage	= <=	TRUE 11	Boolean Volts				
						C: starter motor engaged time	<	0.025	sec				
						SPI message checksum fault	≠	FASLE	Boolean				
					Disable Conditions:	MIL not Illuminated for DTC's:							
Internal TCM Processor Integrity Fault	P0606	Transmission Electro-Hydraulic Control Module Processor Integrity	main processor RAM circuit hardware failure	= TRUE	Boolean	RAM diagnotic test enable	=	1	Boolean	>=	5	counts (controller initialization)	One Trip
			OR			hardware reset source is controller power up reset	=	TRUE	Boolean				
			main processor flash EPROM circuit hardware failure	= TRUE	Boolean	flash EPROM diagnotic test enable	=	1	Boolean	>=	5	counts (controller initialization)	
			OR			hardware reset source is controller power up reset	=	TRUE	Boolean			,	
			main processor memory stack failure	= TRUE	Boolean	Service mode \$04 active and end of trip pocessing active	=	FALSE	Boolean	>=	5	counts (100 msec continuous)	
			OR			main processor memory stack test enable	=	1	Boolean			continuous)	
			secondary processor memory stack failure OR		Boolean	secondary processor memory stack test enable	=	1	Boolean	>=	5	counts (12.5 msec continuous)	
			secondary micro processor remedial action active on request	= FALSE	Boolean					>=	1	counts (controller power up, 12.5 ms continuous)	
			OR main processor ROM first test complete OR	= FALSE	Boolean					>=	35	counts (12.5 msec continuous)	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions			Tir Requ		Mil Illum.
			secondary processor to main processor seed sequence fault OR	t = TRUE Boolean					>=	0.5	seconds	
			seed sequence error	r ≠ FALSE Boolean	program sequence watch communication fault	=	FALSE	Boolean	>=	3	counts (12.5 msec continuous)	
					main processor to secondary processor serial peripheral interface error	=	FALSE	Boolean	>=	17	counts (12.5 msec continuous)	
					seed sequence test enable	=	see table 50 in supporting documents	Boolean				
			OR	2	battery voltage ignition voltage	> >=	11 11	Volts volts				
			seed key fault current loop	= TRUE Boolean	seed key test enable	=	see table 50 in supporting documents	Boolean				
					seed key fault previous loop	=	TRUE	Boolean				
			OR	R	Service mode \$04 active and end of trip processing active	=	FALSE	Boolean				
			normalize 0-5 volt (absolute value (analog to digital test voltage commanded - actual analog to digital voltage feedback))	> 3.298950195 percent	analog to digital voltage test enabled	=	1	Boolean	>=	3	counts (50 msec continuous)	
					ignition voltage	>=	7	Volts	>=	8	counts (50 msec continuous)	
					analog to digital voltage channel enabled	=	see Table 46 in supporting documents	Boolean				
					analog to digital test voltage command	=	see Table 47 in supporting documents	Volts	>=	0.2	seconds	
			OR	2	Service mode \$04 active and end of trip processing active	=	FALSE	Boolean				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		eshold /alue	Secondary Malfunction		Enable Conditions		Time Required	Mil Illum.
			arithmatic logic unit 1 test pass	= FALSE	Boolean	arithmatic logic unit test enable	=	1	Boolean	at controller initialization, then 12.5 ms cont.	
						arithmatic logic unit 1 test pass previous loop	=	FALSE	Boolean		
						Service mode \$04 active and end of trip processing active A and B and C must occur	=	FALSE	Boolean		
						A: starter motor engaged B: ignition voltage	= <=	TRUE 11	Boolean Volts		
						C: starter motor engaged time	<	0.025	sec		
						A and B must occur A: ignition voltage B: ignition low voltage time	<= >=	6.40917969 2.50E-02	Volts sec	at controller	
			arithmatic logic unit 2 test pass	= FALSE	Boolean	arithmatic logic unit test enable	=	1	Boolean	initialization, then 12.5 ms cont.	
						arithmatic logic unit 1 test pass previous loop	=	FALSE	Boolean		
						Service mode \$04 active and end of trip processing active A and B and C must occur	=	FALSE	Boolean		
						A: starter motor engaged B: ignition voltage	= <=	TRUE 11	Boolean Volts		
						C: starter motor engaged time	<	0.025	sec		
			OR secondary processor arithmatic logic unit fault OR	= TRUE	Boolean						
			UK							at controller	
			clock test fail current loop	= TRUE	Boolean	clock test enable	=	1	Boolean	initialization, then 12.5 ms cont.	
						clock test fail previous loop Service mode \$04 active and	=	TRUE FALSE	Boolean Boolean		
						end of trip processing active A and B and C must occur A: starter motor engaged	=	TRUE	Boolean		
						B: ignition voltage	= <=	11	Volts		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Thresh Valu		Secondary Malfunction		Enable Conditions		Time Required	Mil Illum.
						C: starter motor engaged time	<	0.025	sec		
			OR			A and B must occur A: ignition voltage B: ignition low voltage time	<= >=	6.40917969 2.50E-02	Volts sec		
			CR configuration register test fail current loop	= TRUE E	Boolean	configuration register test enable	=	1	Boolean	at controller initialization, then 12.5 ms cont.	
						configuration register test fail previous loop	=	TRUE	Boolean		
						Service mode \$04 active and end of trip processing active	=	FALSE	Boolean		
						A and B and C must occur A: starter motor engaged B: ignition voltage	= <=	TRUE 11	Boolean Volts		
						C: starter motor engaged time	<	0.025	sec		
						A and B must occur A: ignition voltage B: ignition low voltage time	<= >=	6.40917969 2.50E-02	Volts sec		
			OR secondary processor configuration register fault OR A or B occur	= TRUE E	Boolean						
			A: direct memeory access (DMA) read/write test result	≠ FALSE E	Boolean	flash data transfer test enable	=	1	Boolean	normal controller initialization	
			B: direct memeory access (DMA) read/write value		hexadecimal value	flash data transfer test enable	=	1	Boolean	normal controller initialization	
			software uses DMA peripheral function to write and read \$5AA5A55A to flash memory locations to verify each flash			running reset	=	FALSE	Boolean	n intanzauori	
			memory location OR			normal power up reset	=	TRUE	Boolean		
			secondary micro processor detects main micor processor SPI fault	= TRUE E	Boolean						

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			OR A or B or C or D occur A: last 6.25 msec seed and key time	see Table 48 > in supporting sec	seed and key store fault test enable	= 0 Boolean		
			B: last 12.5 msec seed and key time	documents see Table 48 > in supporting sec documents see Table 48				
			C: last 50 msec seed and key time D: last lores engine interrupt seed and key time	<ul> <li>in supporting sec documents see Table 48</li> <li>in supporting sec documents</li> </ul>				
			OR A or B or C or D occur		prgram sequence watch test enable	see 3D_Table 1 in supporting documents		
			A: 6.25 msec program sequence fault fail count	see Table 49 >= in supporting documents counts (50 msec continuous on 6.25 msec time interrupt)				
			B: 12.5 msec program sequence fault fail count	<pre>see Table 49 in supporting documents</pre>				
			C: 50 msec program sequence fault fail count	<pre>&gt;= in supporting documents</pre> counts (50 msec continuous)				
			D: engine lores interrupt program sequence fault fail count					
					Service mode \$04 active and end of trip processing active	= FALSE Boolean		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		eshold alue	Secondary Malfunction		Enable Conditions			Time Require		Mil Illum.
						secondary processor reports SPI communication fault previous loop	=	TRUE	Boolean				
						A and B and C must occur A: starter motor engaged B: ignition voltage		TRUE 11	Boolean Volts				
						C: starter motor engaged time	<	0.025	sec				
						SPI message checksum fault	¥	FASLE	Boolean				
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						
Indicates that the TCM has detected an internal processor integrity fault	P062F	Transmission Electro-Hydraulic Control Module Long Term Memory Performance	TCM Non-Volatile Memory read or write error	= TRUE	Boolean					cont	ery roller ization		One Trip
						NVM write error diagnotic enable	=	1	Boolean				
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P062F ECM: None						
High Side Driver 1	P0658	Actuator Supply Voltage Circuit Low	The HWIO reports a low voltage (ground short) error flag		Boolean					>=	6	Fail Counts (6.25 msec continuous)	One Trip
										out 23 of 23	395	Sample Counts (6.25 msec continuous)	
						actuator supply voltage circuit low enable calibration Service mode \$04 active and		1	Pooloan				
						end of trip pocessing active	=	FALSE	Boolean				l I

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions		Time Required		Mil Illum.
					P0658 Status is not	= Test Failed This Key On or Fault Active				
					P0658 Status is not	Test Failed This Key On or Fault Active				
					Service Fast Learn (SFL) Mode VBS Failsafe		Boolean			
					High Side Driver 1 On		Boolean			
				Disabl Conditions		TCM: None ECM: None				
Transmission Fluid Temperature Sensor (TFT)	P0711	transmission fluid temperature sensor rationality	Fail Case 1 transmission fluid temperature warm up test transmission fluid temperature raw					see Table 26 >= in supporting documents	seconds	Two Trips
					transmission fluid temperature sensor performance diagnsotic enable calibration	= 1	Boolean			
					P0712 and P0713 Battery Voltage Battery Voltage	<= 31.9990234 >= 9	Volts Volts			
					Battery voltage is within the allowable limits for	>= 0.1	Sec			
					Ignition Voltage Ignition Voltage	<= 31.9990234 >= 9	Volts Volts			
					Service Fast Learn (SFL) Mode VBS Failsafe	- ENISE	Boolean			
					Ignition voltage and SFL conditions met for	>= 0.1	Sec			

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions			Tir Requ		Mil Illum.
					transmission fluid temperature warm up test calibration enable	=	1	Boolean				
					driver accelerator pedal position valid	=	TRUE	Boolean				
					driver accelerator pedal position	>=	5	%				
					engine torque valid	=	TRUE	Boolean				
					engine torque steady state raw	>=	50	N*m				
					engine speed valid engine speed	= >=	TRUE 500	Boolean RPM				
					P0722, P0723, P077C, P077D	¥	Fault Active					
					Vehicle Speed	>=	10	KPH				
					P2809 TCC stuck on fault fault status	¥	Test Failed This Key On or Fault Active					
					transmission fluid temperature	>=	-40	°C				
					transmission fluid temperature	<=	150	°C				
					engine coolant temperature valid	=	TRUE	Boolean				
					engine coolant temperature engine coolant temperature	>= <=	-40 150	°C °C				
			Fail Case 2 transmission fluid temperature intermittent delta temperature test transmission fluid temperature delta (100 ms loop to loop)	t >= 10 °C					>=	8	seconds (100 ms cont.)	
									>=	12	seconds (100 ms cont.)	
					transmission fluid temperature sensor performance diagnsotic enable calibration	=	1	Boolean				
					P0712 and P0713 Battery Voltage	≠ <=	Fault Active 31.9990234	Volts				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions			Time equired	Mil Illum.
					Battery Voltage Battery voltage is within the allowable limits for	>= >=	9 0.1	Volts Sec		·	
					Ignition Voltage Ignition Voltage Service Fast Learn (SFL) Mode	<= >=	31.9990234 9	Volts Volts			
					VBS Failsafe Ignition voltage and SFL	= >=	FALSE 0.1	Boolean Sec			
					conditions met for transmission fluid temperature intermittent delta temperature test calibration enable	=	1	Boolean			
			Fail Case 3 transmission fluid temperature stuck		propulsion system active	=	TRUE	Boolean	<b></b>		_
			transmission nuid temperature delta transmission fluid temperature delta (100 ms loop to loop)	<= 0 °C					>= 300	seconds (100 ms cont.)	
					transmission fluid temperature sensor performance diagnsotic enable calibration	=	1	Boolean			
					P0712 and P0713 Battery Voltage Battery Voltage	≠ <= >=	Fault Active 31.9990234 9	Volts Volts			
					Battery voltage is within the allowable limits for	>=	0.1	Sec			
					Ignition Voltage Ignition Voltage	<= >=	31.9990234 9	Volts Volts			
					Service Fast Learn (SFL) Mode VBS Failsafe Ignition voltage and SFL	=	FALSE	Boolean			
					conditions met for transmission fluid temperature	>=	0.1	Sec			
					stuck in range test calibration enable	=	1	Boolean			
					propulsion system active	=	TRUE	Boolean			
					transmission fluid temperature	<=	150	°C			
					transmission fluid temperature	>=	-40	°C			
											$\bot$

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			ime uired	Mil Illum.
						TCM: P0716, P0712, P0713, P0717, P0722, P0723, P077C, P077D, P02809 ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E				
Transmission Fluid Temperature Sensor (TFT)	P0712	Transmission fluid temperature sensor failed at a low voltage	If Transmission Fluid Temperature Sensor Raw Resistance	<= 47.45000076 Ohms			>= out	10 12	Fail Time (Sec) Sample Time	Two Trips
				Disable Conditions:	trans fluid temp sensor low voltage diagnostic enable Battery Voltage Battery Voltage Battery voltage is within the allowable limits for Ignition Voltage Ignition Voltage Service Fast Learn (SFL) Mode VBS Failsafe Ignition voltage and SFL conditions met for MIL not Illuminated for DTC's:	= 1 Boolean  <= 31.9990234 Volts  >= 9 Volts  >= 0.1 Sec  <= 31.9990234 Volts  >= 9 Volts  = FALSE Boolean  >= 0.1 Sec	of		(Sec)	
Transmission Fluid Temperature Sensor (TFT)	P0713	Transmission fluid temperature sensor failed at a high voltage	If Transmission Fluid Temperature Sensor Raw Resistance	>= 105445 Ohms			>= out of	10 12	Fail Time (Sec) Sample Time (Sec)	Two Trips
					trans fluid temp sensor high voltage diagnostic enable Battery Voltage Battery Voltage	= I Boolean <= 31.9990234 Volts				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions			Tim Requi		Mil Illum.
					Battery voltage is within the allowable limits for	>=	0.1	Sec				
					Ignition Voltage	<=	31.9990234	Volts				
					Ignition Voltage	>=	9	Volts				
					Service Fast Learn (SFL) Mode		FALSE	Boolean				
					VBS Failsafe							
					Ignition voltage and SFL conditions met for	>=	0.1	Sec				
					conditions met for							
				Dicabl	e MIL not Illuminated for DTC's:	TCM: Nono						
				Conditions		I CIVI. NUTIC						
						ECM: None						
			Abolute Value Of Transmission									One Trip
Transmission Input Speed	P0716	Input Speed Sensor Performance	Input Speed Sensor Delta (loop to	>= 850 RPM								One mp
Sensor (TISS)	1 0/10	input opecu ochour i chomanec	loop)	2 000 NI M								
			17						>=	1.5	seconds	
									>=	5	fail events	
					speed sensor processing	=	time based					
					Service mode \$04 active and end of trip pocessing active	=	FALSE	Boolean				
					transmission input speed							
					sensor performance diagnostic	=	1	Boolean				
					enable							
					Ignition Voltage Hyst Hi	>	5	Volts				
					(enabled above this value) Ignition Voltage Hyst Lo							
					disabled below this value)	<=	2	Volts				
					Service Fast Learn (SFL) Mode		541.05					
					VBS Failsafe	=	FALSE	Boolean				
					Ignition Voltage Max (disabled	<=	31.9990234	Volts				
					above this value)		0117770201	<b>FORD</b>				
					Ignition Voltage Min (enabled above this value)	>=	9	Volts				
					· ·		Test Failed					
					P0717 Status is not	=	Test Falled This Key On					
							inis koj oli					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions		Time Required	Mil Illum.
					P07BF Status is not	=	Test Failed This Key On			
					P07C0 Status is not	=	Test Failed This Key On			
					last valid transmission input speed	>	148	RPM		
					OR transmission input speed raw	>=	148	RPM		
					transmssion input speed last valid or raw timer	>=	2	Seconds		
					transmission input speed sensor performance test complete (initialized to FALSE set to TRUE when P0716 fails)	=	FALSE	Boolean		
					transmission hydraulic system pressurized	=	TRUE	Boolean		
					driver accelerator pedal position available	=	TRUE	Boolean		
					engine torque inaccurate	=	FALSE	Boolean		
					Transmission Output Speed Sensor Raw Speed	>=	230	RPM		
					driver accelerator pedal position	>=	5.00030518	Pct		
					engine actual torque steady state raw	<=	8191.875	N*m		
					engine actual torque steady state raw	>=	30	N*m		
					P0716 Status is not	=	Test Failed This Key On or Fault Active			

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
				Disabl Conditions		TCM: P0716, P0717, P07BF, P07C0 ECM: P0101, P0102, P0103, P0121, P0122, P0123		
Transmission Input Speed Sensor (TISS)	P0717	Input Speed Sensor Circuit Low Voltage	Fail Case 1         Transmission Input Speed is           OR         OR           Fail Case 2         P0722 DTC Status is Test Failed           This Key On and and controller uses single power feed         Transmission Input Speed is	R d rr d < 175 RPM			>= 4 Fail Time (Sec)	One Trip
					Controller uses a single power supply for the speed sensors speed sensor processing Service mode \$04 active and end of trip pocessing active transmission input speed sensor low diagnostic enable transmission hydraulic system pressurized Ignition Voltage Hyst H (enabled above this value) Ignition Voltage Hyst L disabled below this value) speed sensor connected to	= 0 Boolean = time based = FALSE Boolean = 1 Boolean = TRUE Boolean > 5 Volts <= 2 Volts		
					P0722 Status is no P0723 Status is no P077C Status is no P077D Status is no brake pedal position is no engine torque inaccurate P0716 Status is no	= I Boolean = fault active = fault active = fault active = fault active >= 69.9996948 Pct = FALSE Boolean Tost Failed		
					P07BF Status is no	= Test Failed This Key On		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions			Tir Requ		Mil Illum.
					P07C0 Status is not	=	Test Failed This Key On					
					driver accelerator pedal position	>=	5	Pct				
					engine actual torque steady state raw		8191.875	N*m				
					engine actual torque steady state raw	>-	30	N*m				
					attained gear low		CeCGSR_e _CR_Sixth					
					Transmission Output Speed Sensor Raw Speed when attained gear low	>=	72	RPM				
					attained gear high		CeCGSR_e _CR_Sixth					
					Transmission Output Speed Sensor Raw Speed when attained gear high	>=	230	RPM				
					P0717 Status is not	=	Test Failed This Key On or Fault Active					
				Disable Conditions:	MIL not Illuminated for DTC's:	P077D, P07		077C,				
						LCIVI. FUTU	, FUIUZ, FUIU3					One Trip
Transmission Output Speed Sensor (TOSS)	P0722	Output Speed Sensor Circuit Low Voltage	Transmission Output Speed Sensor Raw Speed		attained gear high	>	CeCGSR_e _CR_Fourth	ENUM	>=	5	Fail Time (Sec)	One Trip
					attained gear low	<=	CeCGSR_e _CR_Fourth	ENUM	>=	3.5	Fail Time (Sec)	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions		Time Required	Mil Illum.
					P0722 Status is not	=	Test Failed This Key On or Fault Active			
					Service mode \$04 active and end of trip pocessing active	=	FALSE	Boolean		
					transmission output speed sensor low diagnostic enable	=	1	Boolean		
					power flow not active (garage shift not complete, PRNDL = P or PRNDL = N, transmission range control in progress)	=	TRUE	Boolean		
					engine actual torque steady state raw power flow not active	>=	8192	N*m		
					driver accelerator position	>=	99.9984741	Pct		
					power flow not active (garage shift not complete, PRNDL = P or PRNDL = N, transmission range control in progress)	=	FALSE	Boolean		
					attained gear high	>	CeCGSR_e _CR_Fourth	ENUM		
					high gear engine actual torque steady state raw power flow active hysteresis high	>=	50	N*m		
					high gear engine actual torque steady state raw power flow active hysteresis low not	<=	30	N*m		
					high gear accelerator pedal position power flow active hysteresis high	>=	4.9987793	Pct		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions		Time Required	Mil Illum.
					high gear accelerator pedal position power flow active hysteresis low not	<=	2.99987793	Pct		
					attained gear low	<=	CeCGSR_e _CR_Fourth	ENUM		
					low gear engine actual torque steady state raw power flow active hysteresis high	>=	80	N*m		
					low gear engine actual torque steady state raw power flow active hysteresis low not	<=	50	N*m		
					low gear accelerator pedal position power flow active hysteresis high	>=	7.99865723	Pct		
					low gear accelerator pedal position power flow active hysteresis low not	<=	4.9987793	Pct		
					use transmission input speed sensor	=	TRUE	Boolean		
					speed sensors have single power feed	=	0	Boolean		
					transmission input speed sensor signal raw	<=	8191.875	RPM		
					transmission input speed sensor signal raw	>=	175	RPM		
					use transmission input speed sensor	=	FALSE	Boolean		
					speed sensors have single power feed	=	0	Boolean		
					engine speed sensor signal engine speed sensor signal	<= >=	8191.875 3500	RPM RPM		
					P0716 Status is not P0717 Status is not	= =	Fault Active Fault Active			
					P07BF Status is not P07C0 Status is not PTO disable	= = =	Fault Active Fault Active 1	Boolean		
					PTO engaged driver accelerator pedal position available	=	FALSE TRUE	Boolean Boolean		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions			Tim Requ		Mil Illum.
					engine torque inaccurate transmission hydraulic system		FALSE	Boolean				
					pressurized	=	TRUE	Boolean				
					Ignition Voltage Hyst Hi (enabled above this value)	>	5	Volts				
					Ignition Voltage Hyst Lo disabled below this value)	<=	2	Volts				
					Service Fast Learn (SFL) Mode VBS Failsafe		FALSE	Boolean				
					Ignition Voltage Max (disabled		31.9990234	Volts				
					above this value) Ignition Voltage Min (enabled		9	Volts				
					above this value) transmssion fluid temperature							
					sensor		-40	°C				
					P0723 Status is not	=	Test Failed					
					10720 010100 101101		This Key On					
							Test Failed					
					P077C Status is not	=	This Key On					
					P077D Status is not	=	Test Failed This Key On					
				Dischla	MIL not Illuminated for DTC's:	TOM DOTA	D0747 D0700					
				Conditions:								
						ECM: P0101 P0122, P012	, P0102, P0103, F 3	20121,				
				see "set fail								One Trip
Transmission Output Speed Sensor (TOSS)	P0723	Output Speed Sensor Circuit Intermittent	transmission output speed delta	>= RPM RPM					>=	1.5	Fail Time (Sec)	
				threshold"								
					transmission output speed	>=	36	RPM	>=	5	fail events	
					OR							

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions		Time Required	Mil Illum.
					transmission output speed last valid output speed before drop	>=	36	RPM		
					for TOSS output speed raw, TOSS last valid output speed, time	>=	2	seconds		
					set fail RPM threshold 4WD low state valid 4WD low state	=	TRUE TRUE	Boolean Boolean		
					2WD delta transmission output speed fail threshold 4WD gear ratio	=	500 2.71	RPM		
					final delta transmission output speed fail threshold OR	=	1355	RPM		
					4WD low state valid 4WD low state 0R	= =	TRUE FALSE	Boolean Boolean		
					4WD low state valid 2WD delta transmission output speed fail threshold	=	FALSE 500	Boolean RPM		
					final delta transmission output speed fail threshold	=	500	RPM		_
					Range_Disable OR	=	FALSE	See Below		
					Neutral_Range_Enable And	=	TRUE	See Below		
					Neutral_Speed_Enable are TRUE concurrently	=	TRUE	See Below		
					Transmission_Range_Enable Transmission_Input_Speed_En able	=	TRUE TRUE	See Below See Below		
					transmission output speed sensor performance diagnostic enable	=	1	Boolean		
					Service mode \$04 active and end of trip pocessing active No Change in Transfer Case	=	FALSE	Boolean		
					Range (High <-> Low) for	>=	5	Seconds		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions		Time Required	Mil Illum.
					P0723 Status is not	=	Test Failed This Key On or Fault Active			
					Disable this DTC if the PTO is active Ignition Voltage Hyst Hi (enabled above this value) Ignition Voltage Hyst Lo disabled below this value)	= > <=	1 5 2	Boolean Volts Volts		
					Service Fast Learn (SFL) Mode VBS Failsafe Ignition Vollage Max (disabled above this value) Ignition Voltage Min (enabled above this value)	= <= >=	FALSE 31.9990234 9	Boolean Volts Volts		
					P077C Status is not	=	Test Failed This Key On			
					P077D Status is not	=	Test Failed This Key On			
					Enable_Flags Defined Below					
					Transmission_Input_Speed_En able is TRUE when either TIS Condition 1 or TIS Condition 2 is TRUE:					
					TIS Condition 1 is TRUE when both of the following conditions are satsified for Input Speed Delta Raw Input Speed	>= <= >=	2 4095.875 148	Enable Time (Sec) RPM RPM		
					TIS Condition 2 is TRUE when ALL of the next two conditions are satisfied Input Speed	=	0	RPM		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions		Time Required	Mil Illum.
					A Single Power Supply is used for all speed sensors	=	TRUE	Boolean		
					Neutral_Range_Enable is TRUE when any of the next 3 conditions are TRUE					
					Transmission Range is	=	Neutral Reverse/Ne	ENUM		
					Transmission Range is	=	utral Transitonal Neutral/Driv	ENUM		
					Transmission Range is	=	e Transitional	ENUM		
					KeTOSI_n_OutSpdInNeutNoise MaxLim	<	50	RPM		
					and when Loop to Loop Drop of Transmission Output Speed is	>	500	RPM		
					Range_Disable is TRUE when any of the next three conditions					-
					are TRUE Transmission Range is	=	Park	ENUM		
					Transmission Range is	=	Park/Revers e Transitonal	ENUM		
					Input Clutch is not	=	ON (Fully Applied)	ENUM		
					Neutral_Speed_Enable is TRUE when All of the next three conditions are satsified for	>	2	Seconds		
					Transmission Output Speed	>=	50	RPM		
					The loop to loop change of the Transmission Output Speed is	<	20	RPM		
					The loop to loop change of the Transmission Output Speed is	>	-140	RPM		
						>	-140	RPM		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions			Tir Requ		Mil Illum.
					Transmission_Range_Enable is TRUE when one of the next six conditions is TRUE Transmission Range is	=	Neutral	ENUM				
							Reverse/Ne utral	ENUM				
					Transmission Range is	=	Transitional Neutral/Driv	ENUM				
					Transmission Range is	=	e Transitional see Table 21	ENUM				
					Time since a driven range (R,D) has been selected	>=	in supporting documents	Sec				
					Transmission Output Speed Sensor Raw Speed Output Speed when a fault was	>=	250 250	RPM RPM				
					detected	>=	250	KPIVI				
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P077C,	P077D					
						ECM: P2771,	P279A, P279B,	P279C				
Variable Force Solenoid (VFS)	P0746	Pressure Control Solenoid A Stuck Off (clutch1/CB1278R)	absolute value (attained gear slip)	>= 400 RPM					>=	3	seconds	One Trip
											when fail time reaches fail limit increment fail event count	
									>=	3	event counts	-
					clutch solenoid stuck on performance diagnostic monitor test deceleration limit not	=	TRUE	boolean				
					clutch solenoid stuck on performance diagnostic monitor test return to previous range not	=	TRUE	boolean				
					PRNDL State not PRNDL State not	=		enumeration enumeration				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions		Time Required	Mil Illum.
· · · · ·		•			while conditinos A and B and C					
					are met, time down delay from					
					clibration to 0.0 seconds					
					delay time calibration	=	0.5	seconds		
					A) neutral condition fault pending	=	FALSE	boolean		
					B) intrusive shift active	=	FALSE	boolean		
					C) range shift state	=	shift complete	enumeration		
					intrusive shift allowed	=	TRUE	boolean		
					intrusive shift active	=	FALSE	boolean		
					steady state pressure adapt in progress	=	FALSE	boolean		
					transmission output speed	>=	100	RPM		
					accelerator pedal position	>=	0.50048828	%		
					accelerator pedal position valid	=	TRUE	Boolean		
					engine speed valid D or E	=	TRUE	Boolean		
					D) select battery voltage to enable diagnsotic monitor	=	0	Boolean		
					E) battery voltage	<=	31.9990234	volts		
					E) battery voltage	>=	9	volts		
					E) battery voltage time F or G	>=	0.1	Sec		
					F) select ignition voltage to enable diagnsotic monitor	=	0	Boolean		
					G) Ignition Voltage	<=	31.9990234	Volts		
					G) Ignition Voltage	>=	9	Volts		
					Service Fast Learn (SFL) Mode VBS Failsafe	=	FALSE	Boolean		
					Ignition voltage and SFL conditions met for	>=	0.1	Sec		
					Hydraulic System Pressurized	=	TRUE	Boolean		
					high side driver 1 enabled	=	TRUE	Boolean		
					high side driver 2 enabled	=	TRUE	Boolean		
					high side driver z chabied	_	INOL	Doolean		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	ł	Mil Illum.
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0716, P0717, P0722, P0723, P077C, P077D, P07BF, P07C0, P1824, P182A, P182B, P182C, P182D, P182E, P182F, P1838, P1839, P1840, P1841, P1885, P1886, P1887, P1888, P1889, P188A, P188B, P188C, P188B, P188E, P188F, P18C0, P18C1, P18C2, P18C3, P1915, P2534 ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305,			
Variable Force Solenoid (VFS)	P0747	Pressure Control Solenoid A Stuck On (clutch1/CB1278R)	automatic transmission shift torque phase test (A) or inertia phase test (B) fail event count deceleration limited automatic transmission shift torque phase test (A) or inertia phase test (B) fail event count no deceleration A) absolute value (attained gear slip), fail during post torque phase of transmission automatic shift, before engine speed change, pull up or pull down occurs increment fail time when slip criteria met, fail time for up shift or closed throttle down shift deceleration limited increment fail time when slip criteria met, fail time for up shift or closed throttle down shift no deceleration	<ul> <li>&gt;= in supporting fail event counts documents</li> <li>see Table 33 in supporting fail event counts documents</li> <li>= 40 RPM</li> </ul>		P0306, P0307, P0308, P0401, P042E	<pre>see Table 29 &gt;= in supporting documents see Table 30 &gt;= in supporting documents see Table 31 &gt;= in supporting documents</pre>	seconds seconds	One Trip

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			B) absolute value (command gear				when fail time reaches fail limit increment fail event count above	
			slip), fail during inertia phase of transmission automatic shift, engine speed change begins, pull up or pull down increment fail time when slip criteria met, fail time during shift deceleration limited increment fail time when slip criteria met, fail time during shift no	>= 70 RPM			see Table 35 >= in supporting seconds documents see Table 36 >= in supporting seconds	
			deceleration				documents when fail time reaches fail limit increment fail event count above	
					inertia phase test measured gear ratio	>= 0.55800003		
					inertia phase test measured gear ratio	<= 4.71500015		
					inertia phase test measured gear ratio time	>= 0.15 seconds		
					clutch test enabled	see Table 10 = in supporting boolean documents		
					post torque phase test engine torque hysteresis high enable for upshift or power on down shift	see Table 11 >= in supporting N*m documents		
					post torque phase test engine torque hysteresis low disable for upshift or power on down shift	see Table 12 > in supporting N*m documents		
					post torque phase test engine torque hysteresis high enable for closed throttle down shift	see Table 13 >= in supporting N*m documents		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions		Time Required	Mil Illum.
					post torque phase test engine torque hysteresis low disable for closed throttle down shift	see Table 14 > in supporting documents			
					inertia phase test engine torque hysteresis high enable for upshift or power on down shift	see Table 15 >= in supporting documents			
					inertia phase test engine torque hysteresis low disable for upshift or power on down shift	see Table 16 > in supporting documents			
					inertia phase test engine torque hysteresis high enable for closed throttle down shift	see Table 17 >= in supporting documents			
					inertia phase test engine torque hysteresis low disable for closed throttle down shift	see Table 18 > in supporting documents			
					off going clutch pressure	see Table 37 <= in supporting documents			
					off going clutch pressure closed throttle down shift delay time	<pre>see Table 2 &gt;= in supporting documents</pre>	seconds		
					off going clutch pressure closed power down shift delay time	see Table 38 >= in supporting documents			
					off going clutch pressure up shift delay time	see Table 59 >= in supporting documents			
					on coming clutch pressure for up shift	<pre>see Table 8 &gt;= in supporting documents</pre>	kPa		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions		Time Required	Mil Illum.
					on coming clutch pressure for down shift	>=	see Table 7 in supporting documents	kPa		
					brake pedal position hysteresis high disable	>=	27.0004272	%		
					brake pedal position hysteresis low enable	<=	25	%		
					absolute value (attained gear slip)	<=	40	RPM		
					shift type enable	=	see Table 45 in supporting documents	boolean		
					clucth solenoid stuck off intrusive shift request not traction control event test	=	TRUE	boolean		
					suspend not	=	TRUE	boolean		
					transmission output speed	>=	100	RPM		
					accelerator pedal position valid	=	TRUE	Boolean		
					engine speed valid D or E	=	TRUE	Boolean		
					<ul> <li>D) select battery voltage to enable diagnsotic monitor</li> </ul>	=	0	Boolean		
					E) battery voltage	<=	31.9990234	volts		
					E) battery voltage E) battery voltage time	>= >=	9 0.1	volts sec		
					F or G F) select ignition voltage to enable diagnsotic monitor	=	0	Boolean		
					G) Ignition Voltage	<=	31.9990234	Volts		
					G) Ignition Voltage Service Fast Learn (SFL) Mode	>=	9 FALSE	Volts Boolean		
					VBS Failsafe Ignition voltage and SFL conditions met for	>=	0.1	Sec		
					Hydraulic System Pressurized	=	TRUE	Boolean		
					high side driver 1 enabled	=	TRUE	Boolean		
					high side driver 2 enabled	=	TRUE	Boolean		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
Uysen					MIL not Illuminated for DTC's:	TCM: P0716, P0717, P0722, P0723, P077C, P077D, P07BF, P07C0, P1824, P182A, P182B, P182C, P182D, P182E, P182F, P183B, P1839, P1840, P1841, P1885, P1886, P1887, P1888, P1889, P188B, P188B, P188C, P18BD, P18BE, P188F, P18C0, P18C1, P18C2, P18C3, P1915, P2534 ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Variable Force Solenoid (VFS)	P0776	Pressure Control Solenoid B Stuck Off (clutch2/CB12345R)	absolute value (attained gear slip)	) >= 400 RPM			>= 3 seconds when fail time reaches fail limit increment fail event count >= 3 event counts	One Trip
					clutch solenoid stuck on performance diagnostic monitor test deceleration limit not clutch solenoid stuck on performance diagnostic monitor test return to previous range not	= TRUE boolean = TRUE boolean		
					PRNDL State not PRNDL State not while conditinos A and B and C are met, time down delay from clibration to 0.0 seconds delay time calibration	= park enumeration = neutral enumeration = 0.5 seconds		
					A) neutral condition fault pending B) intrusive shift active C) range shift state intrusive shift allowed	= FALSE boolean = FALSE boolean = shift complete		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions		Time Required	Mil Illum.
					intrusive shift active	=	FALSE	boolean		
					steady state pressure adapt in progress	=	FALSE	boolean		
					transmission output speed	>=	100	RPM		
					accelerator pedal position	>=	0.50048828	%		
					accelerator pedal position valid	=	TRUE	Boolean		
					engine speed valid	=	TRUE	Boolean		
					D or E D) select battery voltage to enable diagnsotic monitor	=	0	Boolean		
					E) battery voltage	<=	31.9990234	volts		
					E) battery voltage		9	volts		
					E) battery voltage time	>=	0.1	sec		
					F or G					
					<ul> <li>F) select ignition voltage to enable diagnsotic monitor</li> </ul>	=	0	Boolean		
					G) Ignition Voltage	<=	31.9990234	Volts		
					G) Ignition Voltage		9	Volts		
					Service Fast Learn (SFL) Mode VBS Failsafe	=	FALSE	Boolean		
					Ignition voltage and SFL conditions met for	>=	0.1	Sec		
					Hydraulic System Pressurized	=	TRUE	Boolean		
					high side driver 1 enabled	=	TRUE	Boolean		
					high side driver 2 enabled	=	TRUE	Boolean		
	1									

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Require	d	Mil Illum.
				Disal Condition		TCM: P0716, P0717, P0722, P0723, P077C, P077D, P07BF, P07C0, P1824, P182A, P182B, P182C, P182D, P182E, P182F, P183B, P1839, P1840, P1841, P1885, P1886, P1887, P1888, P1889, P1886, P188B, P188C, P188D, P18BE, P188F, P18C0, P18C1, P18C2, P18C3, P1915, P2534 ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305,			
Variable Force Solenoid (VFS)	P0777	Pressure Control Solenoid B Stuck On (clutch2/CB12345R)	automatic transmission shift torque phase test (A) or inertia phase test (B) fail event count deceleration limited automatic transmission shift torque phase test (A) or inertia phase test (B) fail event count no deceleration A) absolute value (attained gear slip), fail during post torque phase of transmission automatic shift, before engine speed change, pull up or pull down occurs	<ul> <li>&gt;= In supporting fail event count documents</li> <li>see Table 33</li> <li>&gt;= in supporting fail event count documents</li> <li>&lt;= 40 RPM</li> </ul>		P0306, P0307, P0308, P0401, P042E			One Trip
			increment fail time when slip criteria met, fail time for power down shift increment fail time when slip criteria met, fail time for up shift or closed throttle down shift deceleration limited increment fail time when slip criteria met, fail time for up shift or closed throttle down shift no deceleration				<pre>see Table 29 &gt;= in supporting documents see Table 30 &gt;= in supporting documents see Table 31 &gt;= in supporting documents</pre>	seconds seconds seconds	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			B) absolute value (command gear				when fail time reaches fail limit increment fail event count above	
			slip), fail during inertia phase of transmission automatic shift, engine speed change begins, pull up or pull down increment fail time when slip criteria met, fail time during shift increment fail time when slip criteria met, fail time during shift no deceleration	>= 70 RPM			see Table 35 >= in supporting seconds documents see Table 36 >= in supporting seconds documents when fail time	
							reaches fail limit increment fail event count above	
					inertia phase test measured gear ratio	>= 0.55800003		
					inertia phase test measured gear ratio	<= 4.71500015		
					inertia phase test measured gear ratio time	>= 0.15 seconds		
					clutch test enabled	see Table 10 = in supporting boolean documents		
					post torque phase test engine torque hysteresis high enable for upshift or power on down shift	see Table 11 >= in supporting N*m documents		
					post torque phase test engine torque hysteresis low disable for upshift or power on down shift	see Table 12 > in supporting N*m documents		
					post torque phase test engine torque hysteresis high enable for closed throttle down shift	see Table 13 >= in supporting N*m documents		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable onditions		Time Required	Mil Illum.
					post torque phase test engine torque hysteresis low disable for closed throttle down shift	> in	ee Table 14 supporting locuments	N*m		
					inertia phase test engine torque hysteresis high enable for upshift or power on down shift	>= in	ee Table 15 supporting locuments	N*m		
					inertia phase test engine torque hysteresis low disable for upshift or power on down shift	> in	ee Table 16 supporting locuments	N*m		
					inertia phase test engine torque hysteresis high enable for closed throttle down shift	>= in	ee Table 17 supporting locuments	N*m		
					inertia phase test engine torque hysteresis low disable for closed throttle down shift	> in	ee Table 18 supporting locuments	N*m		
					off going clutch pressure	<= in	ee Table 37 supporting locuments	kPa		
					off going clutch pressure closed throttle down shift delay time	>= in	ee Table 3 supporting locuments	seconds		
					off going clutch pressure closed power down shift delay time	>= in	ee Table 39 supporting locuments	seconds		
					off going clutch pressure up shift delay time	>= in	ee Table 60 supporting locuments	seconds		
					on coming clutch pressure for up shift	>= in	ee Table 8 supporting locuments	kPa		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions		Time Required	Mil Illum.
					on coming clutch pressure for down shift	>=	see Table 7 in supporting documents	kPa		
					brake pedal position hysteresis high disable	>=	27.0004272	%		
					brake pedal position hysteresis low enable	<=	25	%		
					absolute value (attained gear slip)	<=	40	RPM		
					shift type enable	=	see Table 45 in supporting documents	boolean		
					clucth solenoid stuck off intrusive shift request not traction control event test	=	TRUE	boolean		
					suspend not	=	TRUE	boolean		
					transmission output speed	>=	100	RPM		
					accelerator pedal position valid	=	TRUE	Boolean		
					engine speed valid D or E	=	TRUE	Boolean		
					<ul> <li>D) select battery voltage to enable diagnsotic monitor</li> </ul>	=	0	Boolean		
					E) battery voltage	<=	31.9990234	volts		
					E) battery voltage E) battery voltage time	>= >=	9 0.1	volts sec		
					F or G F) select ignition voltage to enable diagnsotic monitor	=	0	Boolean		
					G) Ignition Voltage	<=	31.9990234	Volts		
					G) Ignition Voltage Service Fast Learn (SFL) Mode	>=	9 FALSE	Volts Boolean		
					VBS Failsafe Ignition voltage and SFL conditions met for	>=	0.1	Sec		
					Hydraulic System Pressurized	=	TRUE	Boolean		
					high side driver 1 enabled	=	TRUE	Boolean		
					high side driver 2 enabled	=	TRUE	Boolean		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
				Disable Conditions:		TCM: P0716, P0717, P0722, P0723, P077C, P077D, P07BF, P07C0, P1824, P182A, P182B, P182C, P182D, P182E, P182F, P1838, P1839, P1840, P1841, P1885, P1886, P1887, P1888, P1889, P188A, P18BB, P18BC, P18BE, P18BF, P18BF, P18C0, P18C1, P18C2, P18C3, P1915, P2534 ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Transmission Output Speed Sensor (TOSS)	P077C	Output Speed Sensor Circuit Low	TOSS Analog Signal Voltage P077C Status is not If the above conditons have been met, increment the P077C Fail Counter	Test Failed = This Key On or Fault Active			>= 5.00E-02 sec	One Trip
			DTC P077C Sets when the Fail Counter	>= 16 Counts (6.25 msec continuous)	P077C Enable Calibration Service mode \$04 active and end of trip pocessing active Ignition Voltage Hyst Hi (enabled above this value) Ignition Voltage Hyst Lo disabled below this value) Service Fast Learn (SFL) Mode VBS Failsafe Battery Voltage Max (disabled above this value) Battery Voltage Min (disabled below this value) Ignition Voltage Min (disabled below this value)	= FALSE Boolean > 5 Volts <= 2 Volts = FALSE Boolean <= 31.9990234 Volts		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		eshold alue	Secondary Malfunction	Enable Conditions			Time equired	Mil Illum.
					Disable Conditions:	for vollage stability time MIL not Illuminated for DTC's:	5	seconds			
Transmission Output Speed Sensor (TOSS)	P077D	Output Speed Sensor Circuit High	TOSS Analog Signal Voltage P077D Status is not If the above conditons have been met, increment the P077D Fail Counter	Test Failed = This Key On Fault Active	or				>= 5.00E-0	2 sec	One Trip
			DTC P077D Sets when the Fail Counter	>= 16	Counts (12.5 msec continuous) Disable Conditions	P077D Enable Calibration Service mode \$04 active and end of trip pocessing active Ignition Voltage Hyst Hi (enabled above this value) Ignition Voltage Hyst Lo disabled below this value) Service Fast Learn (SFL) Mode VBS Failsafe Battery Voltage Max (disabled above this value) Battery Voltage Min (disabled below this value) Ignition Voltage Min (disabled below this value) for voltage stablity time	1 FALSE 5 2 FALSE 31.9990234 10 10 5	Boolean Volts Volts Boolean Volts Volts Volts seconds			
Variable Force Solenoid (VFS)	P0796	Pressure Control Solenoid C Stuck Off (clutch3/C13567)	absolute value (attained gear slip)	>= 400	RPM				>= 3	seconds	One Trip

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions			Tir Requ	iired	Mil Illum.
									>=	3	when fail time reaches fail limit increment fail event count event counts	
					clutch solenoid stuck on performance diagnostic monitor test deceleration limit not	=	TRUE	boolean				
					clutch solenoid stuck on performance diagnostic monitor test return to previous range not	=	TRUE	boolean				
					PRNDL State not PRNDL State not while conditions A and B and C are met, time down delay from	=	park neutral	enumeration enumeration				
					clibration to 0.0 seconds delay time calibration A) neutral condition fault pending	=	0.5 FALSE	seconds boolean				
					B) intrusive shift active C) range shift state intrusive shift allowed	= = =	FALSE shift complete TRUE	boolean enumeration boolean				
					intrusive shift active steady state pressure adapt in progress	=	FALSE FALSE	boolean boolean				
					transmission output speed accelerator pedal position accelerator pedal position valid	>= >= =	100 0.50048828 TRUE	RPM % Boolean				
					engine speed valid D or E D) select battery voltage to	=	TRUE	Boolean				
					enable diagnsotic monitor E) battery voltage E) battery voltage	= <= >=	0 31.9990234 9	Boolean volts volts				
					E) battery voltage time F or G F) select ignition voltage to	>=	0.1	sec				
					enable diagnsotic monitor G) Ignition Voltage	= <=	0 31.9990234	Volts				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					G) Ignition Voltage Service Fast Learn (SFL) Mode VBS Failsafe Ignition voltage and SFL conditions met for Hydraulic System Pressurized high side driver 1 enabled high side driver 1 enabled	= FALSE Boolean >= 0.1 Sec = TRUE Boolean = TRUE Boolean		
				Disable Conditions		TCM: P0716, P0717, P0722, P0723, P077C, P077D, P07BF, P07C0, P1824, P182A, P182B, P182C, P182D, P182E, P182F, P1838, P1839, P1840, P1841, P18B5, P18B6, P18B7, P18B8, P18B9, P18BA, P18BB, P18BC, P18BD, P18BE, P18BF, P18C0, P18C1, P18C2, P18C3, P1915, P2534 ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0411, P042E		
Variable Force Solenoid (VFS)	P0797	Pressure Control Solenoid C Stuck On (clutch3/C13567)	automatic transmission shift torque phase test (A) or inertia phase test (B) fail event count deceleration limited	see Table 32 >= in supporting fail event counts documents				One Trip
			automatic transmission shift torque phase test (A) or inertia phase test (B) fail event count no deceleration					
			<ul> <li>A) absolute value (attained gear slip), fail during post torque phase of transmission automatic shift, before engine speed change, pull up or pull down occurs</li> </ul>	<= 40 RPM				
			increment fail time when slip criteria met, fail time for power down shift				see Table 29 >= in supporting seconds documents	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			increment fail time when slip criteria met, fail time for up shift or closed throttle down shift deceleration limited				see Table 30 >= in supporting seconds documents	
			increment fail time when slip criteria met, fail time for up shift or closed throttle down shift no deceleration				see Table 31 >= in supporting seconds documents	
							when fail time reaches fail limit increment fail event count above	i
			B) absolute value (command gear slip), fail during inertia phase of transmission automatic shift, engine speed change begins, pull up or pull down	>= 70 RPM			above	
			increment fail time when slip criteria met, fail time during shift deceleration limited increment fail time when slip criteria				see Table 35 >= in supporting seconds documents see Table 36	
			met, fail time during shift no deceleration				>= in supporting seconds documents when fail time reaches fail limit increment fail event count	:
					inertia phase test measured	>= 0.55800003	above	-
					gear ratio inertia phase test measured gear ratio	<= 4.71500015		
					inertia phase test measured gear ratio time	>= 0.15 seconds		
					clutch test enabled	see Table 10 = in supporting boolean documents		
					post torque phase test engine torque hysteresis high enable for upshift or power on down shift	see Table 11 >= in supporting N*m documents		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions		Time Required	Mil Illum.
					post torque phase test engine torque hysteresis low disable for upshift or power on down shift	>	see Table 12 in supporting documents	N*m		
					post torque phase test engine torque hysteresis high enable for closed throttle down shift	>=	see Table 13 in supporting documents	N*m		
					post torque phase test engine torque hysteresis low disable for closed throttle down shift	>	see Table 14 in supporting documents	N*m		
					inertia phase test engine torque hysteresis high enable for upshift or power on down shift	>=	see Table 15 in supporting documents	N*m		
					inertia phase test engine torque hysteresis low disable for upshift or power on down shift	>	see Table 16 in supporting documents	N*m		
					inertia phase test engine torque hysteresis high enable for closed throttle down shift	>=	see Table 17 in supporting documents	N*m		
					inertia phase test engine torque hysteresis low disable for closed throttle down shift	>	see Table 18 in supporting documents	N*m		
					off going clutch pressure	<=	see Table 37 in supporting documents	kPa		
					off going clutch pressure closed throttle down shift delay time	>=	see Table 4 in supporting documents	seconds		
					off going clutch pressure closed power down shift delay time	>=	see Table 40 in supporting documents	seconds		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions		Time Required	Mil Illum.
					off going clutch pressure up shift delay time	>=	see Table 61 in supporting documents	seconds		
					on coming clutch pressure for up shift	>=	see Table 8 in supporting documents	kPa		
					on coming clutch pressure for down shift	>=	see Table 7 in supporting documents	kPa		
					brake pedal position hysteresis high disable	>=	27.0004272	%		
					brake pedal position hysteresis low enable	<=	25	%		
					absolute value (attained gear slip)	<=	40	RPM		
					shift type enable	=	see Table 45 in supporting documents	boolean		
					clucth solenoid stuck off intrusive shift request not	=	TRUE	boolean		
					traction control event test suspend not	=	TRUE	boolean		
					transmission output speed accelerator pedal position valid	>=	100 TRUE	RPM Boolean		
					engine speed valid	=	TRUE	Boolean		
					D or E D) select battery voltage to enable diagnsotic monitor	=	0	Boolean		
					E) battery voltage E) battery voltage	<= >=	31.9990234 9	volts volts		
					E) battery voltage time F or G	>=	0.1	Sec		
					<ul> <li>F) select ignition voltage to enable diagnsotic monitor</li> </ul>	=	0	Boolean		
					G) Ignition Voltage G) Ignition Voltage	<= >=	31.9990234 9	Volts Volts		
					Service Fast Learn (SFL) Mode VBS Failsafe	=	FALSE	Boolean		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					Ignition voltage and SFL conditions met for Hydraulic System Pressurized high side driver 1 enabled high side driver 2 enabled	i = TRUE Boolean i = TRUE Boolean		
				Disabl Conditions		TCM: P0716, P0717, P0722, P0723, P077C, P077D, P07BF, P07C0, P1824, P182A, P182B, P182C, P182D, P182E, P182F, P1838, P1839, P1840, P1841, P1885, P1886, P1887, P1888, P1889, P188A, P188B, P188C, P188B, P188E, P188F, P18C0, P18C1, P18C2, P18C3, P1915, P2534		
						ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Transmission Input Speed Sensor (TISS)	P07BF	Input/Turbine Speed Sensor A Circuit Low	TISS Analog Signal Voltage P07BF Status is not	Test Failed			>= 5.00E-02 sec	One Trip
			If the above conditons have been met, increment the P07BF Fail Counter					_
			DTC P07BF Sets when the Fail Counter	>= 16 Counts (12.5 msec continuous	speed sensor processing			
					P07BF Enable Calibration Service mode \$04 active and end of trip pocessing active Ignition Voltage Hyst Hi (enabled above this value)	i = FALSE Boolean		
					Ignition Voltage Hyst Lo disabled below this value)	<= 2 Volts		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions		Time Required		Mil Illum.
					Service Fast Learn (SFL) Mode VBS Failsaft Battery Voltage Max (disabled above this value Battery Voltage Min (disabled below this value Ignition Voltage Min (disabled below this value for voltage stability time	=   	FALSE 31.9990234 10 10 5	Boolean Volts Volts Volts seconds			
				Di Condit	able MIL not Illuminated for DTC's ons:	: TCM: P07C0	)				
Transmission Input Speed Sensor (TISS)	P07C0	Input/Turbine Speed Sensor A Circuit High	TISS Analog Signal Voltage P07C0 Status is not If the above conditons have been met, increment the P07C0 Fail Counter DTC P07C0 Sets when the Fail Counter	Test Failed	ious) speed sensor processing P07C0 Enable Calibration Service mode \$04 active and end of trip pocessing active Ignition Voltage Hyst L disabled above this value Ignition Voltage Hyst L disabled below this value Service Fast Learn (SFL) Mode VBS Failsafe Battery Voltage Max (disabled		time based 1 FALSE 5 2 FALSE 31.9990234	Boolean Volts Volts Boolean Volts	>= 5.00E-02	Sec	One Trip
					above this value Battery Voltage Min (disabled below this value Ignition Voltage Min (disabled below this value	) 1 1 1	10 10	Volts Volts			

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria			shold lue	Secondary Malfunction		Enable Conditions			Time quired	Mil Illum.
							for voltage stablity time	>=	5	seconds			
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P07BF					
Tap Up Tap Down Switch (TUTD)	P0815	Upshift Switch Circuit	Fail Case 1 Tap Up Switch Stuck in the Position in Range 1 Enab	ed =	1	Boolean							Special No MIL
			Tap Up Switch Stuck in the Position in Range 2 Enab	ed =	1	Boolean							
			Tap Up Switch Stuck in the Position in Range 3 Enab	ed =	1	Boolean							
			Tap Up Switch Stuck in the Position in Range 4 Enab	ed =	1	Boolean							
			Tap Up Switch Stuck in the Position in Range 5 Enab	ed	1	Boolean							
			Tap Up Switch Stuck in the Position in Range 6 Enab	ed =	1	Boolean							
			Tap Up Switch Stuck in the Position in Range 7 Enab	ed =	1	Boolean							
			Tap Up Switch Stuck in the Position in Range 8 Enab Tap Up Switch Stuck in the	ed =	1	Boolean							
			Position in Neutral Enab Tap Up Switch Stuck in the	ed =	0	Boolean							
			Position in Park Enab Tap Up Switch Stuck in the	ed =	0	Boolean							
			Position in Reverse Enab Tap Up Switch (	ed =	0 TRUE	Boolean Boolean					>= 1	Fail Time (Sec)	
			Fail Case 2 Tap Up Switch Stuck in the										
			Position in Range 1 Enab Tap Up Switch Stuck in the	ed =	1	Boolean							
			Position in Range 2 Enab Tap Up Switch Stuck in the	ed =	1	Boolean							
			Position in Range 3 Enab Tap Up Switch Stuck in the	ed = Up	1	Boolean							
			Position in Range 4 Enab Tap Up Switch Stuck in the	ed <sup>=</sup> Up	1	Boolean Boolean							
			Position in Range 5 Enab Tap Up Switch Stuck in the	ed <sup>=</sup> Up _	1	Boolean							
			Position in Range 6 Enab	ed =	I	DUDIEALI							

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshol Value		Secondary Malfunction		Enable Conditions			Time equired	Mil Illum.
			Tap Up Switch Stuck in the Up Position in Range 7 Enabled	= 1 Bo	olean							
			Tap Up Switch Stuck in the Up Position in Range 8 Enabled	= 1 Bo	olean							
			Tap Up Switch Stuck in the Up Position in Neutral Enabled	= 0 Bo	olean							
			Tap Up Switch Stuck in the Up Position in Park Enabled	= 0 Bo	olean							
			Tap Up Switch Stuck in the Up Position in Reverse Enabled	= 0 Bo	olean							
			Tap Up Switch ON NOTE: Both Failcase1 and Failcase	= TRUE Bo	olean					100		
			2 Must Be Met							>= 120	Fail Time (Sec)	
						upshift switch diagnostic monitor enable calibration	=	1				
						Service mode \$04 active and end of trip pocessing active	=	FALSE	Boolean			
						Ignition Voltage Hyst Hi (enabled above this value)	>	5	Volts			
						Ignition Voltage Hyst Lo disabled below this value)	<=	2	Volts			
						Service Fast Learn (SFL) Mode VBS Failsafe	=	FALSE	Boolean			
						Ignition Voltage Max (disabled above this value)	<=	31.9990234	Volts			
						Ignition Voltage Min (enabled above this value)	>=	9	Volts			
						Time Since Last Range Change	>=	1	Enable Time (Sec)			

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		nreshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
						P0815 Status is	Test Failed This Key On or Fault Active		
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0826, P1824, P182A, P182B, P182C, P182D, P182E, P182F, P1838, P1839, P1840, P1841, P18B5, P18B6, P18B7, P18B8, P18B9, P18BA, P18BB, P18BC, P18BD, P18BE, P18BF, P18C0, P18C1, P18C2, P18C3, P1915, P1761 ECM: None		
			Fail Case 1				ECIVI: None		Special
Tap Up Tap Down Switch (TUTD)	P0816	Downshift Switch Circuit	Tap Down Switch Stuck in the Down Position in Range 1 Enabled		Boolean				No MIL
			Tap Down Switch Stuck in the Down Position in Range 2 Enabled	= 1	Boolean				
			Tap Down Switch Stuck in the Down Position in Range 3 Enabled	= 1	Boolean				
			Tap Down Switch Stuck in the Down Position in Range 4 Enabled		Boolean				
			Tap Down Switch Stuck in the Down Position in Range 5 Enabled	= 1	Boolean				
			Tap Down Switch Stuck in the Down Position in Range 6 Enabled	= 1	Boolean				
			Tap Down Switch Stuck in the Down Position in Range 7 Enabled	= 1	Boolean				
			Tap Down Switch Stuck in the Down Position in Range 8 Enabled	= 1	Boolean				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	т	hreshold Value	Secondary Malfunction	Enable Conditions		Time Required		Mil Illum.
•		·	Tap Down Switch Stuck in the Down Position in Range Neutral Enabled	= 0	Boolean						
			Tap Down Switch Stuck in the Down Position in Range Park Enabled Tap Down Switch Stuck in the	= 0	Boolean						
			Down Position in Range Reverse Enabled Tap Down Switch ON		Boolean Boolean				1	Sec	
			Fail Case 2 Tap Down Switch Stuck in the	= 1RUE	Boolean			>=	I	Sec	_
			Down Position in Range 1 Enabled Tap Down Switch Stuck in the	= 1	Boolean						
			Down Position in Range 2 Enabled Tap Down Switch Stuck in the	= 1	Boolean						
			Down Position in Range 3 Enabled Tap Down Switch Stuck in the	= 1	Boolean						
			Down Position in Range 4 Enabled Tap Down Switch Stuck in the	= 1	Boolean						
			Down Position in Range 5 Enabled Tap Down Switch Stuck in the Down Position in Range 6 Enabled	= 1	Boolean						
			Tap Down Switch Stuck in the Down Position in Range 7 Enabled	= 1	Boolean						
			Tap Down Switch Stuck in the Down Position in Range 8 Enabled	= 1	Boolean						
			Tap Down Switch Stuck in the Down Position in Neutral Enabled Tap Down Switch Stuck in the	= 0	Boolean						
			Down Position in Park Enabled Tap Down Switch Stuck in the	= 0 = 0	Boolean Boolean						
			Down Position in Reverse Enabled Tap Down Switch ON								

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions			Tim Requi		Mil Illum.
			NOTE: Both Failcase1 and Failcase 2 Must Be Met						>=	120	Sec	
												_
					downshift switch diagnostic monitor enable calibration	=	1					
					Service mode \$04 active and end of trip pocessing active	=	FALSE	Boolean				
					Ignition Voltage Hyst Hi (enabled above this value)	>	5	Volts				
					Ignition Voltage Hyst Lo disabled below this value)	<=	2	Volts				
					Service Fast Learn (SFL) Mode VBS Failsafe	=	FALSE	Boolean				
					Ignition Voltage Max (disabled above this value)	<=	31.9990234	Volts				
					Ignition Voltage Min (enabled above this value)	>=	9	Volts				
					Time Since Last Range Change	>=	1	Enable Time				
								(Sec)				
					P0816 Status is	¥	Test Failed This Key On					
					1 0010 Status Is	7	or Fault Active					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshol Value	d	Secondary Malfunction		Enable Conditions				me uired	Mil Illum.
					Disable Conditions:		P182C, P18 P1839, P184 P18B7, P18 P18BC, P18	, P1824, P182A, 2D, P182E, P182I 40, P1841, P18B5 188, P18B9, P18 180, P18B9, P18 180, P18BE, P1 180, P18C3, P1919	F, P1838, , P18B6, BA, P18BB, 8BF, P18C0,				
Tap Up Tap Down Switch (TUTD)	P0826	Up and Down Shift Switch Circuit	TUTD Circuit Reads Invalid Voltage	= TRUE Bo	olean					>=	60	Fail Time (Sec)	Special No MIL
((()))						Service mode \$04 active and end of trip pocessing active upshift downshift switch circuit diagnostic monitor enable	=	FALSE	Boolean				
						calibration Ignition Voltage Hyst Hi (enabled above this value) Ignition Voltage Hyst Lo	>	5	Volts				
						disabled below this value) Service Fast Learn (SFL) Mode VBS Failsafe	<=	2 FALSE	Volts Boolean				
						Ignition Voltage Max (disabled above this value) Ignition Voltage Min (enabled	<=	31.9990234	Volts				
						above this value)	>=	9	Volts				
						P0826 Status is	¥	Test Failed This Key On or Fault Active					
					Disable Conditions:	MIL not Illuminated for DTC's:							
Variable Force Solenoid (VFS)	P0960	Pressure Control Solenoid A Control Circuit Open (clutch1/CB1278R VFS)	The HWIO reports open crcuit error flag	= TRUE Boo	olean					>=	0.3	Fail Time (Sec)	One Tri

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		eshold alue	Secondary Malfunction		Enable Conditions				me uired	Mil Illum.
										out of	0.5	Sample Time (Sec)	
						diagnostic monitor enable calibration	=	TRUE	Boolean				
						VFS source must be high side driver 1 or 2 or 3							
						high side driver VFS source is	=	CeTSCR_e HSD2	- enumeration				
						high side driver VFS source enabled	=	TRUE	Boolean				
						controller power mode state is ignition or accessory	=	TRUE	Boolean				
						battery voltage in range for stability time							
						battery voltage stability time battery voltage	>= >=	1 8	seconds volts				
						battery voltage	<=	32	Volts				
					Disable	MIL not Illuminated for DTC's:	TCM: None						
					Conditions:		ECM: None						
	Daaria	Pressure Control Solenoid A Control	The HWIO reports open crcuit error	TOUL									One Trip
Variable Force Solenoid (VFS)		Circuit Low (clutch1/CB1278R VFS)	flag	= TRUE	Boolean					>=	0.3	Fail Time (Sec)	
										out of	0.5	Sample Time (Sec)	
						diagnostic monitor enable calibration	=	TRUE	Boolean				
						VFS source must be high side driver 1 or 2 or 3							
						high side driver VFS source is	=	CeTSCR_e HSD2	- enumeration				
						high side driver VFS source enabled	=	TRUE	Boolean				
						controller power mode state is ignition or accessory	=	TRUE	Boolean				
						battery voltage in range for stability time							
						battery voltage stability time battery voltage	>= >=	1 8	seconds volts				
						battery voltage	<=	32	Volts				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		eshold ′alue	Secondary Malfunction		Enable Conditions			Ti Req		Mil Illum.
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						
Variable Force Solenoid (VFS)	P0963	Pressure Control Solenoid A Control Circuit High (clutch1/CB1278R VFS)	The HWIO reports open crcuit error flag	= TRUE	Boolean					>=	0.3	Fail Time (Sec)	One Trip
										out of	0.5	Sample Time (Sec)	
						diagnostic monitor enable calibration VFS source must be high side	=	TRUE	Boolean				
						driver 1 or 2 or 3 high side driver VFS source is		CeTSCR_e_ HSD2	enumeration				
						high side driver VFS source enabled	=	TRUE	Boolean				
						controller power mode state is ignition or accessory battery voltage in range for	=	TRUE	Boolean				
						stability time battery voltage stability time battery voltage voltage	>=	1 8	seconds volts				
						battery voltage		32	Volts				
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						
Variable Force Solenoid (VFS)	P0964	Pressure Control Solenoid B Control Circuit Open (clutch2/CB12345R VFS)	The HWIO reports open crcuit error flag	= TRUE	Boolean					>=	0.3	Fail Time (Sec)	One Trip
										out of	0.5	Sample Time (Sec)	
						diagnostic monitor enable calibration	=	TRUE	Boolean				
						VFS source must be high side driver 1 or 2 or 3		CeTSCR e					
						high side driver VFS source is	=	HSD2	enumeration				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions				me uired	Mil Illum.
					high side driver VFS source enabled		TRUE	Boolean				
					controller power mode state is ignition or accessory	=	TRUE	Boolean				
					battery voltage in range for stability time							
					battery voltage stability time battery voltage		1 8	seconds volts				
					battery voltage		32	Volts				
					e MIL not Illuminated for DTC's:	TCM: None						
				Conditions		ECM: None						
Variable Force Solenoid (VFS)	P0966	Pressure Control Solenoid B Control Circuit Low	The HWIO reports open crcuit error flag						>=	0.3	Fail Time (Sec)	One Trip
		(clutch2/CB12345R VFS)							out of	0.5	Sample Time (Sec)	
					diagnostic monitor enable calibration		TRUE	Boolean				
					VFS source must be high side driver 1 or 2 or 3							
					high side driver VFS source is		CeTSCR_e_ HSD2	- enumeration				
					high side driver VFS source enabled		TRUE	Boolean				
					controller power mode state is ignition or accessory	=	TRUE	Boolean				
					battery voltage in range for stability time							
					battery voltage stability time battery voltage		1 8	seconds volts				
					battery voltage		8 32	Volts				
				Disable Conditions	e MIL not Illuminated for DTC's:	TCM: None						
						ECM: None						

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Т	hreshold Value	Secondary Malfunction		Enable Conditions				me uired	Mil Illum.
Variable Force Solenoid (VFS)	P0967	Pressure Control Solenoid B Control Circuit High (clutch2/CB12345R VFS)	The HWIO reports open crcuit error flag	= TRUE	Boolean					>=	0.3	Fail Time (Sec)	One Trip
		(								out of	0.5	Sample Time (Sec)	
						diagnostic monitor enable calibration VFS source must be high side	=	TRUE	Boolean				
						driver 1 or 2 or 3 high side driver VFS source is	=	CeTSCR_e_ HSD2	enumeration				
						high side driver VFS source enabled controller power mode state is	=	TRUE	Boolean				
						ignition or accessory battery voltage in range for stability time	=	TRUE	Boolean				
						battery voltage stability time battery voltage battery voltage battery voltage	>= >= <=	1 8 32	seconds volts Volts				
					Disable Conditions		TCM: None ECM: None						
Variable Force Solenoid (VFS)	P0968	Pressure Control Solenoid C Control Circuit Open (clutch3/C13567 VFS)	The HWIO reports open crcuit error flag		Boolean					>=	0.3	Fail Time (Sec)	One Trip
										out of	0.5	Sample Time (Sec)	
						diagnostic monitor enable calibration VFS source must be high side driver 1 or 2 or 3	=	TRUE	Boolean				
						high side driver VFS source is	=	CeTSCR_e_ HSD2	enumeration				
						high side driver VFS source enabled controller power mode state is	=	TRUE	Boolean				
						ignition or accessory battery voltage in range for stability time	=	TRUE	Boolean				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Thres Val		Secondary Malfunction		Enable Conditions			Ti Req	me uired	Mil Illum.
						battery voltage stability time battery voltage battery voltage	>=	1 8 32	seconds volts Volts				
					Disable Conditions:		TCM: None ECM: None						
Variable Force Solenoid (VFS)	P0970	Pressure Control Solenoid C Control Circuit Low (clutch3/C13567 VFS)	The HWIO reports open crcuit error flag		Boolean					>=	0.3	Fail Time (Sec)	One Trip
										out of	0.5	Sample Time (Sec)	
						diagnostic monitor enable calibration VFS source must be high side driver 1 or 2 or 3	=	TRUE	Boolean				
						high side driver VFS source is		CeTSCR_e_ HSD2	enumeration				
						high side driver VFS source enabled	=	TRUE	Boolean				
						controller power mode state is ignition or accessory battery voltage in range for	=	TRUE	Boolean				
						stability time battery voltage stability time battery voltage battery voltage	>= >=	1 8 32	seconds volts Volts				
					Disable Conditions:	MIL not Illuminated for DTC's:							
							ECM: None						
Variable Force Solenoid (VFS)	P0971	Pressure Control Solenoid C Control Circuit High (clutch3/C13567 VFS)	The HWIO reports open crcuit error flag		Boolean					>=	0.3	Fail Time (Sec)	One Trip
										out of	0.5	Sample Time (Sec)	
						diagnostic monitor enable calibration		TRUE	Boolean		-		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		shold lue	Secondary Malfunction		Enable Conditions			Tir Requ		Mil Illum.
						VFS source must be high side driver 1 or 2 or 3 high side driver VFS source is high side driver VFS source enabled controller power mode state is ignition or accessory battery voltage in range for stability time battery voltage stability time battery voltage stability time battery voltage battery voltage	= = >= <=		enumeration Boolean Boolean seconds volts Volts				
Transmission Control Module (TCM)	P16E9	Transmission Control Module	secondary micro processor hardware serial peripheral device fault active secondary micro processor		Boolean								One Trip
			hardware serial peripheral device fault active previous loop	= TRUE	Boolean	Service mode \$04 active and end of trip pocessing active	=	FALSE	Boolean				
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						
Transmission Control Module (TCM)	P16F0	Transmission Control Module	secondary micro processor serial peripheral device message valid detected by primary micro processor since controller initialization		Boolean					>=	5	counts (12.5 ms) cont	One Trip
			OR							>=	8	counts (12.5 ms) cont	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria			eshold alue	Secondary Malfunction		Enable Conditions				ime juired	Mil Illum.
			secondary micro processor serial peripheral device message valid detected by primary micro processor after controller initialization	=	FALSE	Boolean					>=	5	counts (12.5 ms) cont	
			OR								>=	8	counts (12.5 ms) cont	
			secondary micro processor serial peripheral device message valid detected by primary micro processor after controller initialization	=	FALSE	Boolean					>=	5	counts (12.5 ms) NON continuous	
											>=	8	counts (12.5 ms) NON continuous	
							NOT in low voltage engine crank condition defined by A or B below during, for low voltage mode time low voltage mode hysteresis time B) ignition voltage, set low voltage mode	>= <=	2.50E-02 0.1 6.40917969	seconds seconds volts				
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						
Transmission Control Module (TCM)	P16F3	Transmission Control Module	diagnostic monitor fails when any of the following conditions occur A or B or C											One Trip
			A) command pressure and its dual store do not equal		TRUE	Boolean	redundent memory command pressure disable calibration nol OR		TRUE	Boolean				
			OR				redundent memory command pressure enable calibration		TRUE	Boolean				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		reshold /alue	Secondary Malfunction		Enable Conditions				me uired	Mil Illum.
			B) command shift and its dual store do not equal	= TRUE	Boolean	redundent memory command shift disable calibration not	=	FALSE	Boolean				
						OR			Boolean				
						redundent memory command shift enable calibration	=	TRUE	Boolean				
			OR C) rate limited vehicle speed and its dual store do not equal	= TRUE	Boolean	rate limited vehicle speed dual store enable calibration	=	TRUE	Boolean	>=	10	counts (25 msec continuous)	
										>=	20	counts (25 msec continuous)	
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						
Transmission Control Module (TCM)	P16F4	Transmission Control Module	redundent path calculation of driver selected transmission range error	= TRUE	Boolean					>=	6	counts (25 msec continuous)	One Trip
										>=	8	counts (25 msec continuous)	
						secureed controller or emission critical ignition voltage	>=	11	volts				
						P16F4 status is not	=	test pass this key on	Boolean				
					Disable Conditions:		TCM: None ECM: None						
			transmission output speed raw (25										One Trip
Transmission Control Module (TCM)	P16FB	Transmission Control Module	ms loop value) - transmission output speed raw (6.25 ms loop value)	>= 60	RPM					>=	8	seconds	eip
			value)							>=	10	seconds	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions				me uired	Mil Illum.
					Service Fast Learn (SFL) Mode VBS Failsafe		FALSE	Boolean				
					Battery Voltage Max (disabled above this value)	<=	31.9990234	Volts				
					Battery Voltage Min (disabled below this value)	<=	10	Volts				
					Ignition Voltage Min (disabled below this value)	>=	10	Volts				
					for voltage stablity time transmission output speed raw		5	seconds				
					(6.25 ms loop value) transmission output speed raw	>=	150	RPM				
					(25 ms loop value)	>=	150	RPM				
					Service mode \$04 active and end of trip pocessing active	=	FALSE	Boolean				
					diagnostic monitor enable calibration	=	1	Boolean				
				Disabl Conditions		TCM: None ECM: None						
						ECIVI: NONE						
Lateral acceleration signal	P175F	Lateral acceleration signal circuit (rolling count or checksum)	P175F will fail when A: message alive rolling count erroror or B: message checksum error									Special No MIL
			A: Rolling count value received from EBCM and expected TCM calculated value not	= TRUE Boolean					>=	9	Fail Counter (50 msec continuous)	
									>	54	Fail Timer (Sec)	
					Lateral acceleration message health (message receive occur)	=	TRUE	Boolean				
					Lateral acceleration signal circuit rolling count diagnostic monitor enable calibration	=	1	Boolean				
					battery voltage battery voltage		31.9990234 9	volts volts				1
					battery voltage time Ignition Voltage	>=	0.1 31.9990234	sec Volts				1
					Ignition Voltage		31.9990234 9	Volts				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		reshold Value	Secondary Malfunction		Enable Conditions			Tin Requ		Mil Illum.
						Service Fast Learn (SFL) Mode VBS Failsafe Ignition voltage and SFL		FALSE	Boolean Sec				
			B: checksum of lateral acceleration message value error	= TRUE	Boolean	conditions met for				>=	54	Fail Timer (Sec)	
						Lateral acceleration message health (message receive occur)	=	TRUE	Boolean				
						Lateral acceleration signal circuit checksum diagnostic monitor enable calibration	=	1	Boolean				
						battery voltage		31.9990234	volts				
						battery voltage battery voltage time		9 0.1	volts sec				
						Ignition Voltage		31.9990234	Volts				
						Ignition Voltage		9	Volts				
						Service Fast Learn (SFL) Mode VBS Failsafe		FALSE	Boolean				
						Ignition voltage and SFL conditions met for normal serial data		0.1	Sec				
						communication enabled		TRUE	Boolean				
						MIL not Illuminated for DTC's:	TCM: U0073						
					Conditions:		ECM: None						
Transmission Intermediate Speed Sensor	P176B	Transmission Intermediate Speed Sensor Performance	attained gear is Reverse or 1st or 2nd			fail time	>=	4	seconds	>=	4	counts (25 msec continuous)	Two Trips
			transmssion intermediate speed attained gear is 3rd or 4th or 5th or 6th or 7th or 8th	> 60	PRM								
			calculated intermediate gear slip = absolute value (transmission input speed - (transmission intermediate speed * command gear	> 60	PRM								
			intermediate ratio))										

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions		Time Requir		Mil Illum.
					calculated gear slip = absolute value (transmission input speed - (transmission output speed * command gear ratio)) calculated gear slip stablity time	<=	60	RPM			
					when all of the conditions below are met	>=	1	seconds			
					diagnostic monitor enable calibration	=	1	Boolean			
					transmission output speed	>=	190	RPM			
					transmission input speed	>=	395	RPM			
					neutral idle mode requesting holding clutch disable		FALSE	Boolean			
					range shift state is	=	shift complete				
					Hydraulic System Pressurized	=	TRUE	Boolean			
					battery voltage	<=	31.9990234	volts			
					battery voltage		9 0.1	volts			
					battery voltage time Ignition Voltage	>= <=	0.1 31.9990234	sec Volts			
					Ignition Voltage	>=	9	Volts			
					Service Fast Learn (SFL) Mode						
					VBS Failsafe	=	FALSE	Boolean			
					Ignition voltage and SFL conditions met for	>=	0.1	Sec			
				Disable Conditions:	MIL not Illuminated for DTC's:		, P0717, P07BF, F 23, P077C, P077D				
Transmission Intermediate Speed Sensor	P176C	Intermediate Speed Sensor Circuit Low	speed sensor1 voltage	see Table 51 <= in supporting volts documents	speed sensor1 fail time	>=	see Table 53 in supporting documents	seconds	see Table 52 >= in supporting documents	counts (12.5 msec continuous)	Two Trips
					speed sensor1 circuit low diagnostic monitor enable calibration	=	see Table 54 in supporting documents	Boolean			
					Service mode \$04 active and end of trip pocessing active Service Fast Learn (SFL) Mode		FALSE	Boolean			
					VBS Failsafe	=	FALSE	Boolean			

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions		Time Require		Mil Illum.
					Battery Voltage Max (disabled above this value)	<=	31.9990234	Volts			
					Battery Voltage Min (disabled below this value)	<=	10	Volts			
					Ignition Voltage Min (disabled below this value)	>=	10	Volts			
					for voltage stablity time	>=	5	seconds			
					P176C Status is not	=	Test Failed This Key On or Fault Active				
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P176D					
Transmission Intermediate Speed Sensor	P176D	Intermediate Speed Sensor Circuit High	speed sensor1 voltage	see Table 55 >= in supporting volts documents	speed sensor1 fail time	>=	see Table 57 in supporting documents	seconds	see Table 56 >= in supporting documents	counts (12.5 msec continuous)	Two Trips
					speed sensor1 circuit high diagnostic monitor enable calibration	=	see Table 58 in supporting documents	Boolean			
					Service mode \$04 active and end of trip pocessing active	=	FALSE	Boolean			
					Service Fast Learn (SFL) Mode VBS Failsafe	=	FALSE	Boolean			
					Battery Voltage Max (disabled above this value)	<=	31.9990234	Volts			
					Battery Voltage Min (disabled below this value)	<=	10	Volts			
					Ignition Voltage Min (disabled below this value)	>=	10	Volts			
					for voltage stablity time	>=	5	seconds			

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions			Tir Requ		Mil Illum.
					P176D Status is not	=	Test Failed This Key On or Fault Active					
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P176C						
Internal Mode Switch (IMS)	P1824	Internal Mode Switch P Circuit High Voltage	IMS switch P voltage	> 2.380000114 volts					>= out of	70 80	Fail Counts (25ms loop) Sample Counts (25ms loop)	Two Trips
					Diagnostic monitor enable calibration Ignition Voltage Lo Ignition Voltage Hi	= >=	1 9 31.9990234	Boolean Volts Volts			(	
					If ignition voltage was previously between the above low / high thresholds, then the following conditions apply once per auto start event							
					Ignition Voltage Lo Ignition Voltage Hi		7 9	Volts Volts				
					Ignition Voltage within the above low / high thresholds for	<=	7.50E-02	seconds				
				Disable Conditions:		TCM: None ECM: None						
Internal Mode Switch (IMS)	P182A	Internal Mode Switch A Circuit Low Voltage	IMS switch A voltage	< 0.699999988 volts					>= out of	70 80	Fail Counts (25ms loop) Sample Counts (25ms loop)	Two Trips
					Diagnostic monitor enable calibration		1	Boolean				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions			Tir Requ		Mil Illum.
					Ignition Voltage Lo Ignition Voltage Hi	>= <=	9 31.9990234	Volts Volts				
					If ignition voltage was previously between the above low / high thresholds, then the following conditions apply once per auto start event							
					Ignition Voltage Lo Ignition Voltage Hi	>= <	7 9	Volts Volts				
					Ignition Voltage within the above low / high thresholds for	<=	7.50E-02	seconds				
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						
Internal Mode Switch (IMS)	P182B	Internal Mode Switch B Circuit Low Voltage	IMS switch B voltage	< 0.699999988 volts					>= out of	70 80	Fail Counts (25ms loop) Sample Counts (25ms loop)	Two Trips
					Diagnostic monitor enable calibration Ignition Voltage Lo Ignition Voltage Hi	= >= <=	1 9 31.9990234	Boolean Volts Volts	U		(25ms 100p)	-
					If ignition voltage was previously between the above low / high thresholds, then the following conditions apply once per auto start event							
					Ignition Voltage Lo Ignition Voltage Hi	>= <	7 9	Volts Volts				
					Ignition Voltage within the above low / high thresholds for	<=	7.50E-02	seconds				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions				me uired	Mil Illum.
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						
Internal Mode Switch (IMS)	P182C	Internal Mode Switch B Circuit High Voltage	IMS switch B voltage	> 2.380000114 volts					>= out of	70 80	Fail Counts (25ms loop) Sample Counts (25ms loop)	Two Trips
					Diagnostic monitor enable calibration Ignition Voltage Lo Ignition Voltage Hi	= >=	1 9 31.9990234	Boolean Volts Volts				
					If ignition voltage was previously between the above low / high thresholds, then the following conditions apply once per auto start event							
					Ignition Voltage Lo Ignition Voltage Hi	<	7 9	Volts Volts				
					Ignition Voltage within the above low / high thresholds for		7.50E-02	seconds				
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						
Internal Mode Switch (IMS)	P182D	Internal Mode Switch P Circuit Low Voltage	IMS switch P voltage	< 0.699999988 volts					>= out of	70 80	Fail Counts (25ms loop) Sample Counts (25ms loop)	Two Trips
					Diagnostic monitor enable calibration Ignition Voltage Lo Ignition Voltage Hi	= >=	1 9 31.9990234	Boolean Volts Volts				
					If ignition voltage was previously between the above low / high thresholds, then the following conditions apply once per auto start event							

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions			Tir Requ	me uired	Mil Illum.
					Ignition Voltage Lo Ignition Voltage Hi	>= <	7 9	Volts Volts				
					Ignition Voltage within the above low / high thresholds for	<=	7.50E-02	seconds				
				Disable Conditions		TCM: None ECM: None						
Internal Mode Switch (IMS)	P182E	Internal Mode Switch Illegal Range	Range	Illegal (SABCP= 00000 enumeration SABCP= 10000)					>=	108	Fail Counts (25ms loop)	Two Trips
					Diagnostic monitor enable				out of	125	Sample Counts (25ms loop)	-
					calibration Ignition Voltage Lo Ignition Voltage Hi	= >= <=	1 9 31.9990234	Boolean Volts Volts				
					If ignition voltage was previously between the above low / high thresholds, then the following conditions apply once per auto start event							
					Ignition Voltage Lo Ignition Voltage Hi	>= <	7 9	Volts Volts				
					Ignition Voltage within the above low / high thresholds for	<=	7.50E-02	seconds				
				Disable Conditions		TCM: None ECM: None						
Internal Mode Switch (IMS)	P182F	Internal Mode Switch C Circuit High Voltage	IMS switch C voltage	> 2.380000114 volts					>=	70	Fail Counts (25ms loop)	Two Trips

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions			Tiı Requ		Mil Illum.
									out of	80	Sample Counts (25ms loop)	
					Diagnostic monitor enable calibration	=	1	Boolean				
					Ignition Voltage Lo Ignition Voltage Hi	>= <=	9 31.9990234	Volts Volts				
					If ignition voltage was previously between the above low / high thresholds, then the following conditions apply once per auto start event							
					Ignition Voltage Lo Ignition Voltage Hi	>= <	7 9	Volts Volts				
					Ignition Voltage within the above low / high thresholds for	<=	7.50E-02	seconds				
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						
Internal Mode Switch (IMS)	P1838	Internal Mode Switch A Circuit High Voltage	IMS switch A voltage	> 2.380000114 volts					>=	70	Fail Counts (25ms loop) Sample Counts	Two Trips
									out of	80	(25ms loop)	
					Diagnostic monitor enable calibration	=	1	Boolean				
					Ignition Voltage Lo Ignition Voltage Hi	>= <=	9 31.9990234	Volts Volts				
					If ignition voltage was previously between the above low / high thresholds, then the following conditions apply once per auto start event							
					Ignition Voltage Lo Ignition Voltage Hi	>= <	7 9	Volts Volts				
					Ignition Voltage within the above low / high thresholds for	<=	7.50E-02	seconds				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions				me uired	Mil Illum.
				Disable Conditions:		TCM: None ECM: None						
Internal Mode Switch (IMS)	P1839	Internal Mode Switch C Circuit Low Voltage	IMS switch C voltage	< 0.699999988 volts					>= out of	70 80	Fail Counts (25ms loop) Sample Counts (25ms loop)	Two Trips
					Diagnostic monitor enable calibration Ignition Voltage Lo Ignition Voltage Hi		1 9 31.9990234	Boolean Volts Volts				
					If ignition voltage was previously between the above low / high thresholds, then the following conditions apply once per auto start event							
					Ignition Voltage Lo Ignition Voltage Hi		7 9	Volts Volts				
					Ignition Voltage within the above low / high thresholds for	<=	7.50E-02	seconds				
				Disable Conditions:		TCM: None ECM: None						
Internal Mode Switch (IMS)	P1840	Internal Mode Switch S Circuit Low Voltage	IMS switch S voltage	< 0.699999988 volts					>= out of	70 80	Fail Counts (25ms loop) Sample Counts (25ms loop)	Two Trips
					Diagnostic monitor enable calibration Ignition Voltage Lo Ignition Voltage Hi	>=	1 9 31.9990234	Boolean Volts Volts				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions			Tir Requ		Mil Illum.
					If ignition voltage was previously between the above low / high thresholds, then the following conditions apply once per auto start event							
					Ignition Voltage Lo Ignition Voltage Hi		7 9	Volts Volts				
					Ignition Voltage within the above low / high thresholds for		7.50E-02	seconds				
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						
Internal Mode Switch (IMS)	P1841	Internal Mode Switch S Circuit High Voltage	IMS switch S voltage	> 2.380000114 volts					>=	70	Fail Counts (25ms loop)	Two Trips
									out of	80	Sample Counts (25ms loop)	
					Diagnostic monitor enable calibration Ignition Voltage Lo Ignition Voltage Hi	>=	1 9 31.9990234	Boolean Volts Volts				
					If ignition voltage was previously between the above low / high thresholds, then the following conditions apply once per auto start event							
					Ignition Voltage Lo Ignition Voltage Hi		7 9	Volts Volts				
					Ignition Voltage within the above low / high thresholds for		7.50E-02	seconds				
				Disable Conditions:		TCM: None ECM: None						

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions			Tiı Requ		Mil Illum.
Internal Mode Switch (IMS)	P18B5	Internal Mode Switch A Circuit Shorted	IMS switch A voltage IMS switch A voltage						>= out of	70 80	Fail Counts (25ms loop) Sample Counts (25ms loop)	Two Trips
					Diagnostic monitor enable calibration Ignition Voltage Lo Ignition Voltage Hi	= >=	1 9 31.9990234	Boolean Volts Volts				-
					If ignition voltage was previously between the above low / high thresholds, then the following conditions apply once per auto start event							
					Ignition Voltage Lo Ignition Voltage Hi		7 9	Volts Volts				
					Ignition Voltage within the above low / high thresholds for		7.50E-02	seconds				
				Disab Condition:	e MIL not Illuminated for DTC's: 5:	TCM: None ECM: None						
Internal Mode Switch (IMS)	P18B6	Internal Mode Switch B Circuit Shorted	IMS switch B voltage	< 1.679999948 volts					>=	70	Fail Counts (25ms loop)	Two Trips
			IMS switch B voltage	> 0.966000021 volts					out of	80	Sample Counts (25ms loop)	
					Diagnostic monitor enable calibration Ignition Voltage Lo Ignition Voltage Hi	>=	1 9 31.9990234	Boolean Volts Volts				
					If ignition voltage was previously between the above low / high thresholds, then the following conditions apply once per auto start event							
					Ignition Voltage Lo Ignition Voltage Hi		7 9	Volts Volts				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions			Ti Req		Mil Illum.
					Ignition Voltage within the above low / high thresholds for		7.50E-02	seconds				
				Disable Conditions:		TCM: None ECM: None						
Internal Mode Switch (IMS)	P18B7	Internal Mode Switch C Circuit Shorted		< 1.679999948 volts > 0.966000021 volts					>= out of	70 80	Fail Counts (25ms loop) Sample Counts (25ms loop)	Two Trips
					Diagnostic monitor enable calibration Ignition Voltage Lo Ignition Voltage Hi	>=	1 9 31.9990234	Boolean Volts Volts				
					If ignition voltage was previously between the above low / high thresholds, then the following conditions apply once per auto start event							
					Ignition Voltage Lo Ignition Voltage Hi		7 9	Volts Volts				
					Ignition Voltage within the above low / high thresholds for		7.50E-02	seconds				
				Disable Conditions:		TCM: None ECM: None						
Internal Mode Switch (IMS)	P18B8	Internal Mode Switch P Circuit Shorted	IMS switch P voltage	< 1.679999948 volts					>=	70	(25ms loop)	Two Trips
			IMS switch P voltage	> 0.966000021 volts					out of	80	Sample Counts (25ms loop)	
					Diagnostic monitor enable calibration Ignition Voltage Lo	=	1 9	Boolean Volts				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions			Tir Requ		Mil Illum.
					Ignition Voltage Hi If ignition voltage was previously between the above low / high thresholds, then the following conditions apply once per auto start event		31.9990234	Volts				
					Ignition Voltage Lo Ignition Voltage Hi Ignition Voltage within the above low / high thresholds for	>= < <=	7 9 7.50E-02	Volts Volts seconds				
				Disable Conditions:		TCM: None ECM: None						
Internal Mode Switch (IMS)	P18B9	Internal Mode Switch S Circuit Shorted	IMS switch S voltage IMS switch S voltage	< 1.679999948 volts > 0.966000021 volts					>= out of	70 80	Fail Counts (25ms loop) Sample Counts (25ms loop)	Two Trips
					Diagnostic monitor enable calibration Ignition Voltage Lo Ignition Voltage Hi	= >= <=	1 9 31.9990234	Boolean Volts Volts				
					If ignition voltage was previously between the above low / high thresholds, then the following conditions apply once per auto start event							
					Ignition Voltage Lo Ignition Voltage Hi Ignition Voltage within the	>= <	7 9	Volts Volts				
					above low / high thresholds for	<=	7.50E-02	seconds				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions				ime uired	Mil Illum.
				Disable Conditions		TCM: None ECM: None						
Internal Mode Switch (IMS)	P18BA	Internal Mode Switch A Stuck Off	Range	Transition 30 = (SABCP= enumeration 00001)					>=	108	Fail Counts (25ms loop)	Two Trips
			Switch A	Frue (this key cycle) boolean					out of	125	Sample Counts (25ms loop)	
					Diagnostic monitor enable calibration Ignition Voltage Lo	=	1 9	Boolean Volts				
					Ignition Voltage Hi		31.9990234	Volts				
					If ignition voltage was previously between the above low / high thresholds, then the following conditions apply once per auto start event							
					Ignition Voltage Lo Ignition Voltage Hi	>= <	7 9	Volts Volts				
					Ignition Voltage within the above low / high thresholds for	<=	7.50E-02	seconds				
				Disable	MIL not Illuminated for DTC's:	TCM: None						
						ECM: None						
Internal Mode Switch (IMS)	P18BB	Internal Mode Switch B Stuck Off	Range	00010)					>=	108	Fail Counts (25ms loop)	Two Trips
			Prev Range	Transition 14 = (SABCP= 10001)					out of	125	Sample Counts (25ms loop)	
					Diagnostic monitor enable calibration	=	1	Boolean				
					Ignition Voltage Lo Ignition Voltage Hi		9 31.9990234	Volts Volts				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threst Valu		Secondary Malfunction		Enable Conditions			Tin Requ		Mil Illum.
						If ignition voltage was previously between the above low / high thresholds, then the following conditions apply once per auto start event							
						Ignition Voltage Lo Ignition Voltage Hi	>= <	7 9	Volts Volts				
						Ignition Voltage within the above low / high thresholds for	<=	7.50E-02	seconds				
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						
Internal Mode Switch (IMS)	P18BC	Internal Mode Switch C Stuck Off	Range	Transition 27 (SABCP= 00100)	enumeration					>=	108	Fail Counts (25ms loop)	Two Trips
								1 1		out of	125	Sample Counts (25ms loop)	
						Diagnostic monitor enable calibration Ignition Voltage Lo Ignition Voltage Hi	= >= <=	1 9 31.9990234	Boolean Volts Volts				
						If ignition voltage was previously between the above low / high thresholds, then the following conditions apply once per auto start event							
						Ignition Voltage Lo Ignition Voltage Hi	>= <	7 9	Volts Volts				
						Ignition Voltage within the above low / high thresholds for	<=	7.50E-02	seconds				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value		Secondary Malfunction		Enable Conditions			Tiı Requ	me uired	Mil Illum.
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						
Internal Mode Switch (IMS)	P18BD	Internal Mode Switch P Stuck Off	Range	Transition 23 = (SABCP= enum 01000) Transition 11	neration					>=	108	Fail Counts (25ms loop)	Two Trips
			Prev Range	= (SABCP= 10100)						out of	125	Sample Counts (25ms loop)	
						Diagnostic monitor enable calibration	=	1	Boolean				
						Ignition Voltage Lo Ignition Voltage Hi	>= <=	9 31.9990234	Volts Volts				
						If ignition voltage was previously between the above low / high thresholds, then the following conditions apply once per auto start event							
						Ignition Voltage Lo Ignition Voltage Hi	>= <	7 9	Volts Volts				
						Ignition Voltage within the above low / high thresholds for	<=	7.50E-02	seconds				
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						
Internal Mode Switch (IMS)	P18BE	Internal Mode Switch S Stuck Off	Range		neration					>=	108	Fail Counts (25ms loop)	Two Trips
			Prev Range	00101)						out of	125	Sample Counts (25ms loop)	
			Switch A Switch S	True (this key	ean ean								
				<pre></pre>		Diagnostic monitor enable calibration	=	1	Boolean				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions			Tir Requ		Mil Illum.
					Ignition Voltage Lo Ignition Voltage Hi	>= <=	9 31.9990234	Volts Volts				
					If ignition voltage was previously between the above low / high thresholds, then the following conditions apply once per auto start event							
					Ignition Voltage Lo Ignition Voltage Hi	>= <	7 9	Volts Volts				
					Ignition Voltage within the above low / high thresholds for	<=	7.50E-02	seconds				
				Disabl Conditions		TCM: None ECM: None						
Internal Mode Switch (IMS)	P18C0	Internal Mode Switch B Stuck On	Range						>=	108	(25ms loop)	Two Trips
			Prev Range = Park for	100µ)					out of	125	Sample Counts (25ms loop)	
			Switch B	B ≠ False (this boolean key cycle)								-
					Diagnostic monitor enable calibration	=	1	Boolean				
					Ignition Voltage Lo Ignition Voltage Hi	>= <=	9 31.9990234	Volts Volts				
					If ignition voltage was previously between the above low / high thresholds, then the following conditions apply once per auto start event							
					Ignition Voltage Lo Ignition Voltage Hi	>= <	7 9	Volts Volts				
					Ignition Voltage within the above low / high thresholds for	<=	7.50E-02	seconds				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions				me uired	Mil Illum.
				Disat Conditior	le MIL not Illuminated for DTC's s:	TCM: None ECM: None						
Internal Mode Switch (IMS)	P18C1	Internal Mode Switch C Stuck On	Range	Transition 20 = (SABCP= enumeration 01011)					>=	108	Fail Counts (25ms loop)	Two Trips
			Switch C	≠ False (this key cycle)					out of	125	Sample Counts (25ms loop)	
					Diagnostic monitor enable calibratior Ignition Voltage Lo	= >=	1 9	Boolean Volts				
					Ignition Voltage H If ignition voltage was previously between the above low / high thresholds, then the following conditions apply once per auto start even		31.9990234	Volts				
					Ignition Voltage Lo Ignition Voltage H		7 9	Volts Volts				
					Ignition Voltage within the above low / high thresholds for		7.50E-02	seconds				
				Disat Conditior	le MIL not Illuminated for DTC's s:	TCM: None ECM: None						
Internal Mode Switch (IMS)	P18C2	Internal Mode Switch P Stuck On	Range	Transition 24 = (SABCP= enumeration 00111)					>=	108	Fail Counts (25ms loop)	Two Trips
									out of	125	Sample Counts (25ms loop)	
					Diagnostic monitor enable calibratior Ignition Voltage Lo	= >=	1 9	Boolean Volts				
1					Ignition Voltage H	<=	31.9990234	Volts				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		eshold alue	Secondary Malfunction		Enable Conditions			Tin Requ		Mil Illum.
						If ignition voltage was previously between the above low / high thresholds, then the following conditions apply once per auto start event							
						Ignition Voltage Lo Ignition Voltage Hi	>= <	7 9	Volts Volts				
						Ignition Voltage within the above low / high thresholds for	<=	7.50E-02	seconds				
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						
Internal Mode Switch (IMS)	P18C3	Internal Mode Switch S Stuck On	Range	= Drive 7	enumeration					>=	108	Fail Counts (25ms loop)	Two Trips
			Prev Range = Park for		counts (25ms loop)					out of	125	Sample Counts (25ms loop)	
			Switch S	≠ False (this key cycle)	boolean								
						Diagnostic monitor enable calibration	=	1	Boolean				
						Ignition Voltage Lo Ignition Voltage Hi	>= <=	9 31.9990234	Volts Volts				
						If ignition voltage was previously between the above low / high thresholds, then the following conditions apply once per auto start event							
						Ignition Voltage Lo Ignition Voltage Hi	>= <	7 9	Volts Volts				
						Ignition Voltage within the above low / high thresholds for	<=	7.50E-02	seconds				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Thres Val	ue	Secondary Malfunction		Enable Conditions			Tir Requ		Mil Illum.
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						Tue Tripe
Internal Mode Switch (IMS)		Internal Mode Switch Does Not Indicate Park/Neutral (P/N) During Start	Range The following events must occur Sequentially Initial Engine speed Then	Transition 17 (SABCP= 01110) Transition 18 (SABCP= 01101) Transition 21 (SABCP= 01010)	Enumeration					ун	0.475	Enable Time (Sec)	Two Trips
			Engine Speed Between Following Cals Engine Speed Lo Hist Engine Speed Hi Hist	>= 50	RPM RPM					>=	0.06875	Enable Time (Sec)	
			Then Final Engine Speed Final Transmission Input Speed	>= 550	RPM RPM	DTC has Ran this Key Cycle	=	FALSE	Boolean	>=	1.25	Fail Time (Sec)	
						Ignition Voltage Lo Ignition Voltage Hi Ignition Voltage Hyst High (enables above this value)	>= <= >=	6 31.9003906 5	V V V				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		eshold ′alue	Secondary Malfunction		Enable Conditions				me uired	Mil Illum.
						Ignition Voltage Hyst Low (disabled below this value) Transmission Output Speed	<= <=	2 90	V rpm				
						P1915 Status is	¥	Test Failed This Key On or Fault Active					
					Disable Conditions		TCM: P0722 ECM: None	, P0723					
Transmission Control Module (TCM)	P2534	Ignition Switch Run/Start Position Circuit Low	TCM Run crank active (based on voltage thresholds below)	= FALSE	Boolean								One Trip
			Ignition Voltage High Hyst (run crank goes true when above this value)	> 5	Volts					>=	280	one fail count per 25 ms loop	
			Ignition Voltage Low Hyst (run crank goes false when below this value)	< 2	Volts					Out of	280	one sample count per 25 ms loop	
						Ignition Switch Run/Start Position Circuit Low diagnaotic enable calibration	=	1	Boolean			·	
						ECM run/crank active status available from serial data	=	TRUE	Boolean				
						ECM run/crank active status Service mode \$04 active and end of trip pocessing active		TRUE FALSE	Boolean Boolean				
					Disable Conditions		TCM: None ECM: None						
Transmission Control Module (TCM)	P2535	Ignition Switch Run/Start Position Circuit High	TCM Run crank active (based on voltage thresholds below)	= TRUE	Boolean								One Trip
			Ignition Voltage High Hyst (run crank goes true when above this value)	> 5	Volts					>=	280	one fail count per 25 ms loop	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	v	eshold alue	Secondary Malfunction		Enable Conditions				me uired	Mil Illum.
			Ignition Voltage Low Hyst (run crank goes false when below this value)	< 2	Volts					Out of	280	one sample count per 25 ms loop	
						Ignition Switch Run/Star Position Circuit High diagnaotic enable calibratior	=	1	Boolean				
						ECM run/crank active status available from serial data ECM run/crank active status		TRUE FALSE	Boolean Boolean				
						Service mode \$04 active and end of trip pocessing active		FALSE	Boolean				
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						
High Side Driver 2	P2670	Actuator Supply Voltage B Circuit Low	The HWIO reports a low voltage (ground short) error flag		Boolean					>=	6	Fail Counts (6.25 msec continuous)	One Trip
										out of	2395	Sample Counts (6.25 msec continuous)	
						actuator supply voltage circui low enable calibration Service mode \$04 active and end of trip pocessing active	=	1 FALSE	Boolean				
						P2670 Status is no	: =	Test Failed This Key On or Fault Active					
						P2670 Status is no	=	Test Failed This Key On or Fault Active					
						Service Fast Learn (SFL) Mode VBS Failsafe High Side Driver 2 Or	=	FALSE True	Boolean Boolean				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions			Tin Requ		Mil Illum.
				Disable Conditions		TCM: None ECM: None						
Variable Force Solenoid (VFS)	P2714	Pressure Control Solenoid D Stuck Off (clutch4/C23468)	absolute value (attained gear slip)	>= 400 RPM					>=	3	seconds when fail time reaches fail limit increment fail event count	One Trip
					clutch solenoid stuck on performance diagnostic monitor test deceleration limit not	=	TRUE	boolean	>=	3	event counts	
					clutch solenoid stuck on performance diagnostic monitor test return to previous range not	=	TRUE	boolean				
					PRNDL State not PRNDL State not while conditions A and B and C are met, time down delay from	=	park neutral	enumeration enumeration				
					clibration to 0.0 seconds delay time calibration A) neutral condition fault pending	=	0.5 FALSE	seconds boolean				
					B) intrusive shift active C) range shift state	=	FALSE shift complete	boolean enumeration				
					intrusive shift allowed intrusive shift active steady state pressure adapt in	=	TRUE FALSE	boolean boolean				
					transmission output speed accelerator pedal position	= >=	FALSE 100 0.50048828	boolean RPM %				
					accelerator pedal position valid engine speed valid	=	TRUE	Boolean Boolean				
					D) select battery voltage to enable diagnsotic monitor	_	0	Boolean				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions		Time Required	Mil Illum.
					E) battery voltage E) battery voltage		31.9990234 9	volts volts		
					E) battery voltage time		0.1	Sec		
					F or G					
					F) select ignition voltage to	=	0	Boolean		
					enable diagnsotic monitor G) Ignition Voltage	<=	31.9990234	Volts		
					G) Ignition Voltage		9	Volts		
					Service Fast Learn (SFL) Mode		FALSE	Boolean		
					VBS Failsafe	=	FALSE	DUUIEdII		
					Ignition voltage and SFL conditions met for	>=	0.1	Sec		
					Hydraulic System Pressurized	=	TRUE	Boolean		
					high side driver 1 enabled		TRUE	Boolean		
					high side driver 2 enabled		TRUE	Boolean		
				Disable		TOLL DOTA	00747 00700	0700		
				Disable Conditions:	MIL not Illuminated for DTC's:		5, P0717, P0722, F 7D, P07BF, P07C			
				conditions.			2B, P182C, P182I			
							38, P1839, P1840			
							B6, P18B7, P18B8			
							BB, P18BC, P18E			
						P18BF, P18 P1915, P25	C0, P18C1, P18C	Z, P1803,		
						1 1713,1 23	54			
						ECM: P010 <sup>-</sup>	1, P0102, P0103, I	P0106,		
							08, P0171, P0172,			
							01, P0202, P0203,			
							06, P0207, P0208, 02, P0303, P0304,			
							07, P0308, P0401,			
		Deserves Control Colonalid D. Cl., J. C.	automatic transmission shift torque	see Table 32						One Trip
Variable Force Solenoid (VFS)	P2715	Pressure Control Solenoid D Stuck On (clutch4/C23468)	phase test (A) or inertia phase test (B) fail event count deceleration	>= in supporting fail event counts						
			limited	documents						
			automatic transmission shift torque	see Table 33						
				>= in supporting fail event counts						
			(B) fail event count no deceleration	documents						
L			( )							

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			<ul> <li>A) absolute value (attained gear slip), fail during post torque phase of transmission automatic shift, before engine speed change, pull up or pull down occurs</li> </ul>	<= 40 RPM				
			increment fail time when slip criteria met, fail time for power down shift				see Table 29 >= in supporting seconds documents	
			increment fail time when slip criteria met, fail time for up shift or closed throttle down shift deceleration limited				see Table 30 >= in supporting seconds documents	
			increment fail time when slip criteria met, fail time for up shift or closed throttle down shift no deceleration				see Table 31 >= in supporting seconds documents	
							when fail time reaches fail limit increment fail event count above	
			B) absolute value (command gear slip), fail during inertia phase of transmission automatic shift, engine speed change begins, pull up or pull down	>= 70 RPM				
			increment fail time when slip criteria met, fail time during shift deceleration limited				see Table 35 >= in supporting seconds documents	
			increment fail time when slip criteria met, fail time during shift no deceleration				see Table 36 >= in supporting seconds documents when fail time	
							reaches fail limit increment fail event count above	
					inertia phase test measured gear ratio inertia phase test measured	>= 0.55800003		
					gear ratio inertia phase test measured	<= 4.71500015 >= 0.15 seconds		
					gear ratio time	- 0.10 3600103		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditio		Time Required	Mil Illum.
					clutch test enabled	see Tabl = in suppo docume	ting boolean		
					post torque phase test engine torque hysteresis high enable for upshift or power on down shift	see Tabl >= in suppo docume	ting N*m		
					post torque phase test engine torque hysteresis low disable for upshift or power on down shift	see Tabl > in suppo docume	ting N*m		
					post torque phase test engine torque hysteresis high enable for closed throttle down shift	>= see Tabl >= in suppo docume	ting N*m		
					post torque phase test engine torque hysteresis low disable for closed throttle down shift	> see Tabl > in suppo docume	ting N*m		
					inertia phase test engine torque hysteresis high enable for upshift or power on down shift	>= see Tabl >= in suppo docume	ting N*m		
					inertia phase test engine torque hysteresis low disable for upshift or power on down shift	> see Tabl > in suppo docume	ting N*m		
					inertia phase test engine torque hysteresis high enable for closed throttle down shift	>= see Tabl >= in suppo docume	ting N*m		
					inertia phase test engine torque hysteresis low disable for closed throttle down shift	> see Tabl > in suppo docume	ting N*m		
					off going clutch pressure	<= see Tabl <= in suppo docume	ting kPa		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions		Time Required	Mil Illum.
					off going clutch pressure closed throttle down shift delay time	>=	see Table 5 in supporting documents	seconds		
					off going clutch pressure closed power down shift delay time	>=	see Table 41 in supporting documents	seconds		
					off going clutch pressure up shift delay time	>=	see Table 62 in supporting documents	seconds		
					on coming clutch pressure for up shift	>=	see Table 8 in supporting documents	kPa		
					on coming clutch pressure for down shift	>=	see Table 7 in supporting documents	kPa		
					brake pedal position hysteresis high disable	>=	27.0004272	%		
					brake pedal position hysteresis low enable	<=	25	%		
					absolute value (attained gear slip)	<=	40	RPM		
					shift type enable	=	see Table 45 in supporting documents	boolean		
					clucth solenoid stuck off intrusive shift request not	=	TRUE	boolean		
					traction control event test suspend not	=	TRUE	boolean		
					transmission output speed	>=	100	RPM		
					accelerator pedal position valid	=	TRUE	Boolean		
					engine speed valid D or E	=	TRUE	Boolean		
					<ul> <li>D) select battery voltage to enable diagnsotic monitor</li> </ul>	=	0	Boolean		
					E) battery voltage E) battery voltage	<= >=	31.9990234 9	volts volts		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		eshold ′alue	Secondary Malfunction		Enable Conditions			Tir Requ		Mil Illum.
							= < = = = TCM: P0716 P077C, P077 P182A, P182 P182F, P183 P18B5, P184 P18B5, P184 P1895, P186 P1915, P253 ECM: P0101 P0177, P020 P0205, P020 P0301, P0300 P0301, P0300 P03000 P03000 P03000 P03000 P03000 P03000 P03000 P03000 P03000	0.1 0 31.9990234 9 FALSE 0.1 TRUE TRUE TRUE TRUE tRUE , P0717, P0722, 1 D, P07BF, P07C B, P182C, P1821 B8, P1882, P1840 36, P1887, P1881 SB, P188C, P188 C0, P18C1, P18C	x0, P1824, D, P182E, J, P1841, 8, P1889, 3D, P18B9, 3D, P18BE, :2, P18C3, P0106, ; P0174, ; P0204, ; P0305,				
Variable Force Solenoid (VFS)	P2718	Pressure Control Solenoid D Control Circuit Open (clutch4/C23468 VFS)	The HWIO reports open crcuit error flag	= TRUE	Boolean					>= out of	0.3 0.5	Fail Time (Sec) Sample Time (Sec)	One Trip
						diagnostic monitor enable calibration VFS source must be high side driver 1 or 2 or 3 high side driver VFS source is	=	TRUE CeTSCR_e_ HSD1	Boolean			(===)	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions			Tir Requ		Mil Illum.
					high side driver VFS source enabled	=	TRUE	Boolean				
					controller power mode state is ignition or accessory	=	TRUE	Boolean				
					battery voltage in range for stability time							
					battery voltage stability time battery voltage		1 8	seconds volts				
					battery voltage		32	Volts				
				Disable	MIL not Illuminated for DTC's:	TCM: None						
				Conditions		ECM: None						
Variable Force Solenoid (VFS)	P2720	Pressure Control Solenoid D Control Circuit Low (clutch4/C23468 VFS)	The HWIO reports open crcuit error flag						>=	0.3	Fail Time (Sec)	One Trip
									out of	0.5	Sample Time (Sec)	
					diagnostic monitor enable calibration		TRUE	Boolean				
					VFS source must be high side driver 1 or 2 or 3							
					high side driver VFS source is		CeTSCR_e_ HSD1	- enumeration				
					high side driver VFS source enabled		TRUE	Boolean				
					controller power mode state is ignition or accessory	=	TRUE	Boolean				
					battery voltage in range for stability time							
					battery voltage stability time battery voltage		1 8	seconds volts				
					battery voltage		32	Volts				
				Disable	MIL not Illuminated for DTC's:	TCM: None						
				Conditions		ECM: None						

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria			eshold alue	Secondary Malfunction		Enable Conditions				me uired	Mil Illum.
Variable Force Solenoid (VFS)	P2721	Pressure Control Solenoid D Control Circuit High (clutch4/C23468 VFS)	The HWIO reports open crcuit error flag	=	TRUE	Boolean					>=	0.3	Fail Time (Sec)	One Trip
		(00001 # 020 100 11 0)									out of	0.5	Sample Time (Sec)	
							diagnostic monitor enable calibration VFS source must be high side	=	TRUE	Boolean				
							driver 1 or 2 or 3 high side driver VFS source is	=	CeTSCR_e_ HSD1	- enumeration				
							high side driver VFS source enabled	=	TRUE	Boolean				
							controller power mode state is ignition or accessory battery voltage in range for		TRUE	Boolean				
							stability time battery voltage stability time battery voltage battery voltage	>= >=	1 8 32	seconds volts Volts				
						Disabl Conditions		TCM: None ECM: None						
Variable Force Solenoid (VFS)	P2723	Pressure Control Solenoid E Stuck Off (clutch5/C45678R)	absolute value (attained gear slip)	>=	400	RPM					>=	3	seconds	One Trip
		()											when fail time reaches fail limit increment fail	
											>=	3	event count event counts	
						clutch solenoid stuck on performance diagnostic monitor test deceleration limit not	=	TRUE	boolean					
							clutch solenoid stuck on performance diagnostic monitor test return to previous range not	=	TRUE	boolean				
							PRNDL State not PRNDL State not		park neutral	enumeration enumeration				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions		Time Required	Mil Illum.
· · · · ·		•			while conditinos A and B and C					
					are met, time down delay from					
					clibration to 0.0 seconds					
					delay time calibration	=	0.5	seconds		
					A) neutral condition fault pending	=	FALSE	boolean		
					B) intrusive shift active	=	FALSE	boolean		
					C) range shift state	=	shift complete	enumeration		
					intrusive shift allowed	=	TRUE	boolean		
					intrusive shift active	=	FALSE	boolean		
					steady state pressure adapt in progress	=	FALSE	boolean		
					transmission output speed	>=	100	RPM		
					accelerator pedal position	>=	0.50048828	%		
					accelerator pedal position valid	=	TRUE	Boolean		
					engine speed valid D or E	=	TRUE	Boolean		
					D) select battery voltage to enable diagnsotic monitor	=	0	Boolean		
					E) battery voltage	<=	31.9990234	volts		
					E) battery voltage	>=	9	volts		
					E) battery voltage time F or G	>=	0.1	Sec		
					F) select ignition voltage to enable diagnsotic monitor	=	0	Boolean		
					G) Ignition Voltage	<=	31.9990234	Volts		
					G) Ignition Voltage	>=	9	Volts		
					Service Fast Learn (SFL) Mode VBS Failsafe	=	FALSE	Boolean		
					Ignition voltage and SFL conditions met for	>=	0.1	Sec		
					Hydraulic System Pressurized	=	TRUE	Boolean		
					high side driver 1 enabled	=	TRUE	Boolean		
					high side driver 2 enabled	=	TRUE	Boolean		
					high side driver z chabied	_	INOL	boolcan		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Ł	Secondary Malfunction	Enable Conditions	Time Required	d	Mil Illum.
					Disable Conditions:		TCM: P0716, P0717, P0722, P0723, P077C, P077D, P07BF, P07C0, P1824, P182A, P182B, P182C, P182D, P182E, P182F, P1838, P1839, P1840, P1841, P1885, P1886, P1887, P1888, P1889, P188A, P188B, P188C, P18BD, P18BE, P188F, P18C0, P18C1, P18C2, P18C3, P1915, P2534 ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305,			
Variable Force Solenoid (VFS)	P2724	Pressure Control Solenoid E Stuck On (clutch5/C45678R)	automatic transmission shift torque phase test (A) or inertia phase test (B) fail event count deceleration limited automatic transmission shift torque phase test (A) or inertia phase test (B) fail event count no deceleration A) absolute value (attained gear slip), fail during post torque phase of transmission automatic shift, before engine speed change, pull up or pull down occurs increment fail time when slip criteria met, fail time for power down shift increment fail time when slip criteria met, fail time for up shift or closed throttle down shift deceleration limited	<ul> <li>&gt;= In supporting rate documents</li> <li>see Table 33</li> <li>&gt;= in supporting fail education documents</li> <li>&lt;= 40 RPN</li> </ul>	event counts		P0306, P0307, P0308, P0401, P042E	see Table 29 >= in supporting documents see Table 30 >= in supporting documents	seconds	One Trip
			increment fail time when slip criteria met, fail time for up shift or closed throttle down shift no deceleration					see Table 31 >= in supporting documents	seconds	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			B) absolute value (command gear				when fail time reaches fail limit increment fail event count above	
			slip), fail during inertia phase of transmission automatic shift, engine speed change begins, pull up or pull down increment fail time when slip criteria met, fail time during shift increment fail time when slip criteria met, fail time during shift no deceleration	>= 70 RPM			see Table 35 >= in supporting seconds documents see Table 36 >= in supporting seconds documents when fail time	
							reaches fail limit increment fail event count above	
					inertia phase test measured gear ratio	>= 0.55800003		
					inertia phase test measured gear ratio	<= 4.71500015		
					inertia phase test measured gear ratio time	>= 0.15 seconds		
					clutch test enabled	see Table 10 = in supporting boolean documents		
					post torque phase test engine torque hysteresis high enable for upshift or power on down shift	see Table 11 >= in supporting N*m documents		
					post torque phase test engine torque hysteresis low disable for upshift or power on down shift	see Table 12 > in supporting N*m documents		
					post torque phase test engine torque hysteresis high enable for closed throttle down shift	see Table 13 >= in supporting N*m documents		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions		Time Required	Mil Illum.
					post torque phase test engine torque hysteresis low disable for closed throttle down shift		see Table 14 in supporting documents	N*m		
					inertia phase test engine torque hysteresis high enable for upshift or power on down shift		see Table 15 in supporting documents	N*m		
					inertia phase test engine torque hysteresis low disable for upshift or power on down shift		see Table 16 in supporting documents	N*m		
					inertia phase test engine torque hysteresis high enable for closed throttle down shift		see Table 17 in supporting documents	N*m		
					inertia phase test engine torque hysteresis low disable for closed throttle down shift		see Table 18 in supporting documents	N*m		
					off going clutch pressure		see Table 37 in supporting documents	kPa		
					off going clutch pressure closed throttle down shift delay time		see Table 6 in supporting documents	seconds		
					off going clutch pressure closed power down shift delay time		see Table 42 in supporting documents	seconds		
					off going clutch pressure up shift delay time		see Table 63 in supporting documents	seconds		
					on coming clutch pressure for up shift	>=	see Table 8 in supporting documents	kPa		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions		Time Required	Mil Illum.
					on coming clutch pressure for down shift	>=	see Table 7 in supporting documents	kPa		
					brake pedal position hysteresis high disable	>=	27.0004272	%		
					brake pedal position hysteresis low enable	<=	25	%		
					absolute value (attained gear slip)	<=	40	RPM		
					shift type enable	=	see Table 45 in supporting documents	boolean		
					clucth solenoid stuck off intrusive shift request not traction control event test	=	TRUE	boolean		
					suspend not	=	TRUE	boolean		
					transmission output speed	>=	100	RPM		
					accelerator pedal position valid	=	TRUE	Boolean		
					engine speed valid D or E	=	TRUE	Boolean		
					<ul> <li>D) select battery voltage to enable diagnsotic monitor</li> </ul>	=	0	Boolean		
					E) battery voltage	<=	31.9990234	volts		
					E) battery voltage E) battery voltage time	>= >=	9 0.1	volts sec		
					F or G F) select ignition voltage to enable diagnsotic monitor	=	0	Boolean		
					G) Ignition Voltage	<=	31.9990234	Volts		
					G) Ignition Voltage Service Fast Learn (SFL) Mode	>=	9 FALSE	Volts Boolean		
					VBS Failsafe Ignition voltage and SFL conditions met for	>=	0.1	Sec		
					Hydraulic System Pressurized	=	TRUE	Boolean		
					high side driver 1 enabled	=	TRUE	Boolean		
					high side driver 2 enabled	=	TRUE	Boolean		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Thresho Value	ld	Secondary Malfunction		Enable Conditions			Tir Requ		Mil Illum.
					Disable Conditions:		P077C, P077 P182A, P182 P182F, P183 P18B5, P18B P18B4, P18B P18BF, P18C P1915, P2534 ECM: P0101, P0107, P0102 P0175, P0205 P0205, P0200 P0301, P0302	P0717, P0722, D, P07BF, P07C B, P182C, P182 S, P1839, P184( 6, P18B7, P188 B, P18BC, P18 B, P18BC, P18 B, P18BC, P18 D, P18C1, P18C 4 P0102, P0103, S, P0171, P0172 S, P0207, P0205 S, P0207, P0206 2, P0303, P0304 7, P0308, P0401	C0, P1824, D, P182E, J, P1841, I8, P18B9, BD, P18BE, S2, P18C3, P0106, 2, P0174, 3, P0204, 3, P0300, I, P0305,				
Variable Force Solenoid (VFS)	P2727	Pressure Control Solenoid E Control Circuit Open (clutch5/C45678 VFS)	The HWIO reports open crcuit error flag		oolean					>= out of	0.3 0.5	Fail Time (Sec) Sample Time (Sec)	One Trip
						diagnostic monitor enable calibration VFS source must be high side driver 1 or 2 or 3 high side driver VFS source is high side driver VFS source enabled controller power mode state is ignition or accessory battery voltage in range for stability time battery voltage stability time battery voltage	= = >= >=	TRUE CeTSCR_e_ HSD1 TRUE TRUE 1 8	Boolean Boolean seconds volts			(222)	
					Disable Conditions:	battery voltage		32	Volts				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		nreshold Value	Secondary Malfunction		Enable Conditions				me uired	Mil Illum.
Variable Force Solenoid (VFS)	P2729	Pressure Control Solenoid E Control Circuit Low (clutch5/C45678 VFS)	The HWIO reports open crcuit error flag	= TRUE	Boolean					>=	0.3	Fail Time (Sec)	One Trip
		(								out of	0.5	Sample Time (Sec)	
						diagnostic monitor enable calibration VFS source must be high side		TRUE	Boolean				
						driver 1 or 2 or 3 high side driver VFS source is	=	CeTSCR_e_ HSD1	- enumeration				
						high side driver VFS source enabled controller power mode state is	=	TRUE	Boolean				
						ignition or accessory battery voltage in range for stability time	=	TRUE	Boolean				
						battery voltage stability time battery voltage battery voltage battery voltage	>= >= <=	1 8 32	seconds volts Volts				
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						
Variable Force Solenoid (VFS)	P2730	Pressure Control Solenoid E Control Circuit High (clutch5/C45678 VFS)	The HWIO reports open crcuit error flag	= TRUE	Boolean					>=	0.3	Fail Time (Sec)	One Trip
										out of	0.5	Sample Time (Sec)	
						diagnostic monitor enable calibration VFS source must be high side driver 1 or 2 or 3		TRUE	Boolean				
						high side driver VFS source is	=	CeTSCR_e_ HSD1	- enumeration				
						high side driver VFS source enabled	=	TRUE	Boolean				
						controller power mode state is ignition or accessory battery voltage in range for stability time	=	TRUE	Boolean				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	eshold alue	Secondary Malfunction		Enable Conditions			Ti Req	me uired	Mil Illum.
					battery voltage stability time battery voltage battery voltage	>=	1 8 32	seconds volts Volts				
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						
Variable Force Solenoid (VFS)		Pressure Control Solenoid F Control Circuit Open (line pressure VFS)	The HWIO reports open crcuit error flag	Boolean					>=	0.3	Fail Time (Sec)	One Trip
									out of	0.5	Sample Time (Sec)	
					diagnostic monitor enable calibration VFS source must be high side driver 1 or 2 or 3	=	TRUE	Boolean			i	
					high side driver VFS source is		CeTSCR_e_ HSD2	enumeration				
					high side driver VFS source enabled		TRUE	Boolean				
					controller power mode state is ignition or accessory battery voltage in range for	=	TRUE	Boolean				
					stability time battery voltage stability time	>=	1	seconds				
					battery voltage battery voltage		8 32	volts Volts				
				Disable Conditions:								
						ECM: None						
Variable Force Solenoid (VFS)	P2738	Pressure Control Solenoid F Control Circuit Low (line pressure VFS)	The HWIO reports open crcuit error flag	Boolean					>=	0.3	Fail Time (Sec)	One Trip
									out of	0.5	Sample Time (Sec)	
					diagnostic monitor enable calibration		TRUE	Boolean				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions			Tir Requ		Mil Illum.
				Disable Conditions:	VFS source must be high side driver 1 or 2 or 3 high side driver VFS source is high side driver VFS source enabled controller power mode state is ignition or accessory battery voltage in range for stability time battery voltage stability time battery voltage stability time battery voltage MIL not Illuminated for DTC's:	= = >= >= >= <=	CeTSCR_e_ HSD2 TRUE TRUE 1 8 32	enumeration Boolean Boolean seconds volts Volts				
Variable Force Solenoid (VFS)	P2739	Pressure Control Solenoid F Control Circuit High (line pressure VFS)	The HWIO reports open crcuit error flag	= TRUE Boolean					>= out of	0.3	Fail Time (Sec) Sample Time (Sec)	One Trip
					diagnostic monitor enable calibration VFS source must be high side driver 1 or 2 or 3 high side driver VFS source is		TRUE CeTSCR_e_ HSD2	Boolean	6		(900)	
					high side driver VFS source enabled controller power mode state is ignition or accessory battery voltage in range for stability time battery voltage stability time battery voltage battery voltage	= = >= >=	TRUE TRUE 1 8 32	Boolean Boolean seconds volts Volts				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		reshold Value	Secondary Malfunction		Enable Conditions		Time Required	Mil Illum.
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None				
VFS characterization	P27A7	VFS characterization	clutch1/CB1278R pressure control solenoid characterization not programmed	= TRUE	Boolean						One Trip
						manufacture enable counter memory type updated	=	0 non-volatile memory	counts		
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None				
VFS characterization	P27A8	VFS characterization	clutch2/CB12345R pressure control solenoid characterization not programmed	= TRUE	Boolean						One Trip
						manufacture enable counter memory type updated	=	0 non-volatile memory	counts		
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None				
VFS characterization	P27A9	VFS characterization	clutch3/C13567 pressure control solenoid characterization not programmed	= TRUE	Boolean						One Trip
						manufacture enable counter memory type updated	=	0 non-volatile memory	counts		
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None				
VFS characterization	P27AA	VFS characterization	clutch4/C23468 pressure control solenoid characterization not programmed	= TRUE	Boolean						One Trip

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		eshold alue	Secondary Malfunction		Enable Conditions		Time Required	Mil Illum.
						manufacture enable counter memory type updated		0 non-volatile memory	counts		
					Disable Conditions:		TCM: None ECM: None				
VFS characterization	P27AB	VFS characterization	clutch5/C45678R pressure control solenoid characterization not programmed		Boolean						One Trip
						manufacture enable counter memory type updated		0 non-volatile memory	counts		
					Disable Conditions:		TCM: None ECM: None				
VFS characterization	P27AC	VFS characterization	line pressure control solenoid characterization not programmed	= TRUE	Boolean						One Trip
						manufacture enable counter memory type updated	=	0 non-volatile memory	counts		
					Disable Conditions:		TCM: None ECM: None				
VFS characterization	P27AD	VFS characterization	TCC pressure control solenoid characterization not programmed	= TRUE	Boolean						One Trip
						manufacture enable counter memory type updated		0 non-volatile memory	counts		
					Disable Conditions:		TCM: None ECM: None				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		1	hreshold Value	Secondary Malfunction		Enable Conditions				me uired	Mil Illum.
Torque Converter Clutch (TCC)	P2808	TCC System Stuck OFF	TCC Pressure	>=	750	Кра					>=	2	Enable Time	Two Trips
			TCC capacity	>=	0	%					>=	0	(Sec) Enable Time	
			Either Condition (A) or (B) Must be										(Sec)	
			Met											
				5	see Table									
			(A) TCC Slip Error @ TCC On Mode	>=		ng RPN					>=	4	Fail Time (Sec)	
					Docume									
			(B) TCC Slip @ Lock On Mode	>=	130	RPN					>=	4	Fail Time (Sec)	
			If Above Conditions Have been Met,									n	TCC Stuck Off	
			and Fail Timer Expired, Increment Fail Counter								>=	3	Fail Counter	
			raii Counter				TCC Mode	=	On or Lock					
							TCC system stuck off diagnostic							
							monitor enable c	=	1					
							default valve state	=	high (active)					
							absolute value of attained gear	>=	25	RPM				
							slip	. –	20					
							attalian di secon		CeCGSR_e					
							attained gear	>=	_CR_Fourth					
									shift					
							range shift state	=	complete					
							Hydraulic System Pressurized	=	TRUE	Boolean				
							battery voltage	<=	31.9990234	volts				
							battery voltage	>=	9	volts				
							battery voltage time	>=	0.1	Sec				
							Ignition Voltage	<=	31.9990234	Volts				
							Ignition Voltage Service Fast Learn (SFL) Mode	>=	9	Volts				
							VBS Failsafe	=	FALSE	Boolean				
							Ignition voltage and SFL							
							conditions met for	>=	0.1	Sec				
							Engine Torque	>=	50	N*m				
							Engine Torque	<=	8191.75	N*m				
							Throttle Position	>=	8.00018311	Pct				
							Throttle Position	<=	99.9984741	Pct				
							Transmission Fluid Temperature	>=	-6.65625	°C				
							Transmission Fluid							
							Temperature	<=	130	°C				
							PTO Not Active	=	TRUE	Boolean				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thres Val		Secondary Malfunction		Enable Conditions			Tir Requ	me uired	Mil Illum.
							Engine Torque Signal Valid Accelerator Pedal Position Signal Valid	_	TRUE TRUE	Boolean Boolean				
							P2808 Status is	¥	Test Failed This Key On					
						Disable Conditions	MIL not Illuminated for DTC's:		23, P077C, P077I					
								P0107, P01 P0175, P02 P0205, P02 P0301, P03	1, P0102, P0103, 08, P0171, P0172 01, P0202, P0203 06, P0207, P0208 02, P0303, P0304 07, P0308, P0401	, P0174, , P0204, , P0300, , P0305,				
Torque Converter Clutch (TCC)	P2809	TCC System Stuck ON	TCC Slip Speed	>=	-50	RPM								One Trip
	1 2007		TCC Slip Speed			RPM								
			If Above Conditions Have been Met, and Fail Timer Expired, Increment Fail Counter								>= >=	1.5 6	Fail Time (Sec) Fail Counter	
							TCC Mode default valve state default valve state previous	=	Off high (active) low to high see Table 24					
							set default valve state timer	=	in Supporting Documents	seconds				
							default valve state timer times down to zero (0.0) when default valve state not	=	high (active)					
							default valve state timer times down to zero (0.0) when default valve state previous not	=	low to high					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions		Time Required	Mil Illum.
					either A or B ro C must be met					
					A) default valve state B) default valve state timer C) low TCC slip fail timer clutch solenoid stuck off	= > >	low to high 0 0	seconds seconds		
					performance (neutral) test active	=	FALSE	Boolean		
					clutch solenoid stuck on performance (tie-up) test active	=	FALSE	Boolean		
					TCC Slip Speed	<=	300 see Table 25	RPM		
					derivative TCC slip speed	<=	in Supporting Documents	RPM/sec		
					TCC system stuck on diagnostic monitor enable c	=	1			
					Engine Speed	<=	5500	RPM		
					Engine Speed Vehicle Speed HI	>=	400 45	RPM KPH		
					Engine Torque	<=	45 800	Nm		
					Engine Torque	>=	55	Nm		
					Current Range	¥	Neutral	Range		
					Current Range	, ≠	Reverse	Range		
					Transmission Fluid Temperature	<=	130	°C		
					Transmission Fluid	>=	-6.65625	°C		
					Temperature Throttle Position Hyst High AND	>=	3.99932861	Pct		
					Max Vehicle Speed to Meet Throttle Enable	<=	8	KPH		
					Once Hyst High has been met, the enable will remain while Throttle Position	>=	0.99945068	Pct		
					Disable for Throttle Position	>=	94.9996948	Pct		
					Disable if PTO active and value true	=	1	1.60		
					enable if tap up/down mode is false or tap up/down TCC calibration value is false	=	0	Boolean		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions			Tim Requi		Mil Illum.
					enable if manual up/down mode is false or manual up/down TCC calibration value is false	=	0	Boolean				
					enable if misfire disengage TCC is false or value TCC misfire calibration value is false	=	0	Boolean				
					4 Wheel Drive Low Active battery voltage battery voltage	= <= >=	FALSE 31.9990234 9	Boolean volts volts				
					battery voltage time Ignition Voltage Ignition Voltage Service Fast Learn (SFL) Mode	>= <= >=	0.1 31.9990234 9	sec Volts Volts				
					VBS Failsafe Ignition voltage and SFL conditions met for	= >=	FALSE 0.1	Boolean Sec				
					Engine Torque Signal Valid Throttle Position Signal Valid	=	TRUE TRUE	Boolean Boolean				
					P0742 Status is	¥	Test Failed This Key On					
				Disable Conditions:			3, P077C, P077E					
						P0107, P010 P0175, P020 P0205, P020 P0301, P030	, P0102, P0103, 8, P0171, P0172, 1, P0202, P0203, 6, P0207, P0208, 2, P0303, P0304, 7, P0308, P0401,	P0174, P0204, P0300, P0305,				
Variable Force Solenoid (VFS)	P2812	Pressure Control Solenoid G Control Circuit Open (TCC pressure VFS)	The HWIO reports open crcuit error flag	= TRUE Boolean					>=	0.3	Fail Time (Sec)	One Trip
									out of	0.5	Sample Time (Sec)	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions			Tir Requ		Mil Illum.
					diagnostic monitor enable calibration VFS source must be high side driver 1 or 2 or 3	=	TRUE	Boolean				
					high side driver VFS source is		CeTSCR_e_ HSD2	enumeration				
					high side driver VFS source enabled	=	TRUE	Boolean				
					controller power mode state is ignition or accessory battery voltage in range for	=	TRUE	Boolean				
					stability time battery voltage stability time	>=	1	seconds				
					battery voltage battery voltage		8 32	volts Volts				
				Disabl	e MIL not Illuminated for DTC's:	TCM: None						
						ECM: None						
Variable Force Solenoid (VFS)	P2814	Pressure Control Solenoid G Control Circuit Low (TCC pressure VFS)	The HWIO reports open crcuit error flag	= TRUE Boolean					>=	0.3	Fail Time (Sec)	One Trip
									out of	0.5	Sample Time (Sec)	
					diagnostic monitor enable calibration VFS source must be high side	=	TRUE	Boolean				
					driver 1 or 2 or 3 high side driver VFS source is		CeTSCR_e_ HSD2	enumeration				
					high side driver VFS source enabled		TRUE	Boolean				
					controller power mode state is ignition or accessory battery voltage in range for	=	TRUE	Boolean				
					stability time stability time battery voltage stability time battery voltage battery voltage	>= >=	1 8 32	seconds volts Volts				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		eshold alue	Secondary Malfunction		Enable Conditions			Ti Req	me uired	Mil Illum.
					Disable Conditions:		TCM: None ECM: None						
Variable Force Solenoid (VFS)	P2815	Pressure Control Solenoid G Control Circuit High (TCC pressure VFS)	The HWIO reports open crcuit error flag	= TRUE	Boolean					>=	0.3	Fail Time (Sec)	One Trip
										out of	0.5	Sample Time (Sec)	-
						diagnostic monitor enable calibration	=	TRUE	Boolean				
						VFS source must be high side driver 1 or 2 or 3							
						high side driver VFS source is		CeTSCR_e_ HSD2	enumeration				
						high side driver VFS source enabled	=	TRUE	Boolean				
						controller power mode state is ignition or accessory battery voltage in range for	=	TRUE	Boolean				
						stability time battery voltage stability time	>=	1	seconds				
						battery voltage battery voltage		8 32	volts Volts				
					Disable Conditions:		TCM: None ECM: None						
default valve on/off valve solenoid	P2817	Hydraulic on/off Control Solenoid H Stuck Off (default valve on/off solenoid)	absolute value (attained gear slip) 4th gear commanded		RPM	6th gear intrusive shift command when fail time reaches fail limit				>=	3	seconds	One Trip
						attained gear when intrusive 6th gear command	=	3rd	0014				
						attained gear slip 3rd gear 3rd gear attained time	>=	75 0.5	RPM seconds				
						intrusive 6th gear commanded event count	>=	2	counts				
										>=	2	counts	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions		Time Required	Mil Illum.
					clutch solenoid stuck on performance diagnostic monitor test deceleration limit not	=	TRUE	boolean		
					clutch solenoid stuck on performance diagnostic monitor test return to previous range not	=	TRUE	boolean		
					PRNDL State not PRNDL State not while conditions A and B and C are met, time down delay from	=	park neutral	enumeration enumeration		
					clibration to 0.0 seconds delay time calibration A) neutral condition fault pending	=	0.5 FALSE	seconds boolean		
					B) intrusive shift active C) range shift state	=	FALSE shift complete	boolean enumeration		
					intrusive shift allowed intrusive shift active steady state pressure adapt in	=	TRUE FALSE	boolean boolean		
					progress transmission output speed accelerator pedal position	= >= >=	FALSE 100 0.50048828	boolean RPM %		
					accelerator pedal position valid	=	TRUE	Boolean		
					engine speed valid D or E	=	TRUE	Boolean		
					D) select battery voltage to enable diagnsotic monitor	=	0	Boolean		
					E) battery voltage E) battery voltage E) battery voltage time	<= >= >=	31.9990234 9 0.1	volts volts sec		
					F or G F) select ignition voltage to enable diagnsotic monitor	=	0	Boolean		
					G) Ignition Voltage G) Ignition Voltage Service Fast Learn (SFL) Mode	<= >=	31.9990234 9	Volts Volts		
					VBS Failsafe Ignition voltage and SFL conditions met for	= >=	FALSE 0.1	Boolean Sec		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions		Time Requir		Mil Illum.
					Hydraulic System Pressurized high side driver 1 enabled high side driver 2 enabled	= TRUE Boole	an			
				Disable Conditions:		TCM: P0716, P0717, P0722, P0723, P077C, P077D, P078F, P07C0, P1824 P182A, P182B, P182C, P182D, P182E P182F, P1838, P1839, P1840, P1841, P1885, P1886, P1887, P1888, P1889 P188A, P188B, P18BC, P18BD, P188 P188F, P18C0, P18C1, P18C2, P18C3 P1915, P2534	, E,			
						ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E				
default valve on/off valve solenoid	P2818	Hydraulic on/off Control Solenoid H Stuck On (default valve on/off solenoid)	TCC slip speed	<= 6 RPM			>=	0.5 3	seconds counts	Two Trips
					delay time after TCC intrusive command pressure reaches intrusive value TCC intrusive command pressure test delay timer calibration test delay timer times down from calibration to zero (0.0) when all of the following conditinos are met engine speed engine speed transmission temperature transmission temperature	supporting documents >= 600 kPa	ds 1	5	counts	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions				me uired	Mil Illum.
					Hydraulic System Pressurized		TRUE	Boolean				
					battery voltage		31.9990234	volts				
					battery voltage battery voltage time		9 0.1	volts sec				
					Ignition Voltage		31.9990234	Volts				
					Ignition Voltage		9	Volts				
					Service Fast Learn (SFL) Mode VBS Failsafe		FALSE	Boolean				
					Ignition voltage and SFL conditions met for		0.1	Sec				
				Disable Conditions:		P2812, P2814		P07C0,				
						ECM: none						0.71
default valve on/off solenoid	P281D	Pressure Control Solenoid H Control Circuit Low (default valve on/off solenoid)	The HWIO reports open crcuit error flag	= TRUE Boolean					>=	0.3	Fail Time (Sec)	One Trip
									out of	0.5	Sample Time (Sec)	
					diagnostic monitor enable calibration	=	TRUE	Boolean				
					VFS source must be high side driver 1 or 2 or 3							
					high side driver VFS source is		CeTSCR_e_ HSD1	enumeration				
					high side driver VFS source enabled	=	TRUE	Boolean				
					controller power mode state is ignition or accessory battery voltage in range for	=	TRUE	Boolean				
					stability time battery voltage stability time		1	seconds				
					battery voltage battery voltage	>=	8 32	volts Volts				
					battery voltage		J2	voits				
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None						
						ECM: None						

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		eshold alue	Secondary Malfunction		Enable Conditions			Tii Requ	me uired	Mil Illum.
default valve on/off solenoid	P281E	Pressure Control Solenoid H Control Circuit High (default valve on/off solenoid)	The HWIO reports open crcuit error flag	= TRUE	Boolean					>=	0.3	Fail Time (Sec)	One Trip
										out of	0.5	Sample Time (Sec)	
						diagnostic monitor enable calibration	=	TRUE	Boolean				
						VFS source must be high side driver 1 or 2 or 3							
						high side driver VFS source is		CeTSCR_e_ HSD1	- enumeration				
						high side driver VFS source enabled	=	TRUE	Boolean				
						controller power mode state is ignition or accessory battery voltage in range for	=	TRUE	Boolean				
						stability time battery voltage stability time	>=	1	seconds				
						battery voltage battery voltage		8 32	volts Volts				
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None						
							ECM: None						
clutch2/CB12345R boost valve on/off solenoid	P2824	Pressure Control Solenoid J Control Circuit High (clutch2/CB12345R boost valve on/off solenoid)	The HWIO reports open crcuit error flag	= TRUE	Boolean					>=	0.3	Fail Time (Sec)	One Trip
		Solehold)								out of	0.5	Sample Time (Sec)	
						diagnostic monitor enable calibration	=	TRUE	Boolean				
						VFS source must be high side driver 1 or 2 or 3							
						high side driver VFS source is	=	CeTSCR_e_ HSD1	- enumeration				
						high side driver VFS source enabled	=	TRUE	Boolean				
						controller power mode state is ignition or accessory	=	TRUE	Boolean				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		eshold /alue	Secondary Malfunction		Enable Conditions				me uired	Mil Illum.
						battery voltage in range for stability time battery voltage stability time battery voltage battery voltage	>= >=	1 8 32	seconds volts Volts				
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						
clutch2/CB12345R boost valve on/off solenoid	P2826	Pressure Control Solenoid J Control Circuit Low (clutch2/CB12345R boost valve on/off solenoid)	The HWIO reports open crcuit error flag	= TRUE	Boolean					>=	0.3	Fail Time (Sec)	One Trip
						diagnostic monitor enable calibration VFS source must be high side	=	TRUE	Boolean	out of	0.5	Sample Time (Sec)	
						driver 1 or 2 or 3 high side driver VFS source is high side driver VFS source	=	CeTSCR_e_ HSD2 TRUE	- enumeration Boolean				
						enabled controller power mode state is ignition or accessory battery voltage in range for stability time	=	TRUE	Boolean				
						battery voltage stability time battery voltage battery voltage	>= >=	1 8 32	seconds volts Volts				
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						
clutch2/CB12345R boost valve on/off solenoid	P2827	Pressure Control Solenoid J Control Circuit High (clutch2/CB12345R boost valve on/off solenoid)	The HWIO reports open crcuit error flag	= TRUE	Boolean					>=	0.3	Fail Time (Sec)	One Trip

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thres Val	shold lue	Secondary Malfunction		Enable Conditions				me uired	Mil Illum.
											out of	0.5	Sample Time (Sec)	-
							diagnostic monitor enable calibration	=	TRUE	Boolean				
							VFS source must be high side driver 1 or 2 or 3		CeTSCR_e_					
							high side driver VFS source is high side driver VFS source	=	HSD2	enumeration				
							enabled controller power mode state is	=	TRUE	Boolean				
							ignition or accessory battery voltage in range for	=	TRUE	Boolean				
							stability time battery voltage stability time	>=	1	seconds				
							battery voltage battery voltage	>= <=	8 32	volts Volts				
						Disable Conditions	MIL not Illuminated for DTC's:							
								ECM: None						
Communication	U0073	Controller Area Network Bus Communication Error	CAN Hardware Circuitry Detects a Bus Voltage Error (CAN bus off)	= T	RUE	Boolean					>=	62	counts	One Trip
			Bus off delay time	>= 0.	.1125	sec					>=	70	counts	
							all conditions A and B and C below must occur for stabilization time							
							Bus Stabilization time	>=	3	seconds				
							A) Service mode \$04 active and end of trip pocessing active	=	FALSE	Boolean				
							A) normal serial data communication enabled	=	TRUE	Boolean				
							A) P0073 status not B) secured controller or emission critical then use ignition voltage	=	fault active CeCANR_e_ OBDII_Dsbl	Boolean				
							B) secureed controller or emission critical Ignition Voltage	>=	11	volts				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions		Time Required		Mil Illum.
					B) Power Mode B) secured controller or emission critical then use controller power mode	=	Run CeCANR_e_ OBDII_Dsbl	Boolean			
					B) Power Mode C) ignition off enable C) Power Mode C) battery voltage	=	Run 1 accessory 11	Boolean volts			
					all conditions A and B below must occur A) post clear code timer		0.15	seconds			
					B) when Propulsion System Active use low voltage check NOT in low voltage engine crank condition defined by A or B below during, for low voltage	=	FALSE	Boolean			
					mode time low voltage mode time A) low voltage mode hysteresis time	>= <=	2.50E-02 0.1	seconds seconds			
					B) ignition voltage, set low voltage mode		6.40917969	volts			
				Disable Conditions	MIL not Illuminated for DTC's:	TCM: None ECM: None					
Communication	U0100	Lost Communications with ECM (Engine Control Module)	TCM Rx message missed frame		fail times are caculated based on Rx message enable calibration set to CeCANR_e_BusA_ECM		Tx controller				One Trip
			TCM Rx frame message missed frame	= TRUE Boolean	TCM Rx frame calibration enabled	¥	see Table 64 in supporting documents	enumeration	see Table 65 >= in supporting documents	seconds	
					Frame recovery stabilization delay all conditions A and B and C below must occur for		0.5	seconds			
					stabilization time Bus Stabilization time		3	seconds			

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions		Time Required	Mil Illum.
					A) Service mode \$04 active and end of trip pocessing active	=	FALSE	Boolean		
					A) normal serial data communication enabled A) P0073 status not	=	TRUE fault active	Boolean		
					B) secured controller or emission critical then use ignition voltage	=	CeCANR_e_ OBDII_Dsbl	Boolean		
					B) secureed controller or emission critical Ignition Voltage	>=	11	volts		
					B) Power Mode B) secured controller or emission critical then use controller power mode	=	Run CeCANR_e_ OBDII_Dsbl	Boolean		
					B) Power Mode C) ignition off enable C) Power Mode C) battery voltage	= = = >=	Run 1 accessory 11	Boolean volts		
					all conditions A and B below must occur A) post clear code timer	>=	0.15	seconds		
					B) when Propulsion System Active use low voltage check NOT in low voltage engine crank condition defined by A or	=	FALSE	Boolean		
					B below during, for low voltage mode time low voltage mode time A) low voltage mode hysteresis	>=	2.50E-02	seconds		
					time B) ignition voltage, set low voltage mode	<=	0.1 6.40917969	seconds volts		
				Dicable	U0100 fault status is not MIL not Illuminated for DTC's:	= TCM: 110073	fault active			
				Conditions:		ECM: None				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions		Time Required		Mil Illum.
Communication	U0121	Loss Communications with ABS (Anti- lock Brake System)	TCM Rx message missed frame		fail times are caculated based on the following Rx messages enable calibration set to CeCANR_e_BusA_ABS		Tx controller				Special No MIL
			TCM Rx frame message missed frame	= TRUE Boolean	TCM Rx frame calibration enabled	¥	see Table 64 in supporting documents	enumeration	see Table 65 >= in supporting documents	seconds	
					Frame recovery stabilization delay	>=	0.5	seconds			
					all conditions A and B and C below must occur for stabilization time		2				
					Bus Stabilization time	>=	3	seconds			
					A) Service mode \$04 active and end of trip pocessing active	=	FALSE	Boolean			
					A) normal serial data communication enabled A) P0073 status not	=	TRUE fault active	Boolean			
					B) secured controller or emission critical then use ignition voltage	=	CeCANR_e_ OBDII_Dsbl	Boolean			
					B) secureed controller or emission critical Ignition Voltage	>=	11	volts			
					B) Power Mode B) secured controller or emission critical then use	=	Run CeCANR_e_ OBDII_Dsbl	Boolean			
					controller power mode B) Power Mode	=	Run				
					C) ignition off enable C) Power Mode	=	1	Boolean			
					C) Power Mode C) battery voltage all conditions A and B below must occur	= >=	accessory 11	volts			
					A) post clear code timer B) when Propulsion System Active use low voltage check	>= =	0.15 FALSE	seconds Boolean			

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions		Time Required	Mil Illum.
				Disable Conditions:		>= <= = TCM: U0073	2.50E-02 0.1 6.40917969 fault active	seconds seconds volts		
		Less Communications with DCM			fail times are caculated based					Special No MIL
Communication	U0140	Loss Communications with BCM (Body Control Module)	TCM Rx message missed frame		on the following Rx messages enable calibration set to CeCANR_e_BusA_BCM		Tx controller			
			TCM Rx frame message missed frame	= TRUE Boolean	TCM Rx frame calibration enabled		see Table 64 in supporting documents	enumeration	see Table 65 >= in supporting seconds documents	
					Frame recovery stabilization delay all conditions A and B and C below must occur for stabilization time		0.5	seconds		
					Bus Stabilization time A) Service mode \$04 active and end of trip pocessing active	>=	3 FALSE	seconds Boolean		
					A) normal serial data communication enabled A) P0073 status not	=	TRUE fault active	Boolean		
					B) secured controller or emission critical then use ignition voltage	=	CeCANR_e_ OBDII_Dsbl	Boolean		
					B) secureed controller or emission critical Ignition Voltage	>=	11	volts		

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary		Enable		Time	Mil
System	Code	Description	Criteria	Value	Malfunction		Conditions		Required	Illum.
					B) Power Mode	=	Run			1 1
					<ul> <li>B) secured controller or</li> </ul>		CeCANR_e_			
					emission critical then use	=	OBDII_Dsbl	Boolean		1 1
					controller power mode		OPDII_D201			1 1
					B) Power Mode	=	Run			1 1
					C) ignition off enable	=	1	Boolean		
					C) Power Mode	=	accessory			1 1
					C) battery voltage	>=	11	volts		
					all conditions A and B below					
					must occur					1 1
					A) post clear code timer	>=	0.15	seconds		
					B) when Propulsion System		541.05			1 1
					Active use low voltage check	=	FALSE	Boolean		1 1
					NOT in low voltage engine					
					crank condition defined by A or					1 1
					B below during, for low voltage					1 1
					mode time					
					low voltage mode time	>=	2.50E-02	seconds		
					A) low voltage mode hysteresis					1 1
					time	<=	0.1	seconds		1 1
					B) ignition voltage, set low					
					voltage mode	<=	6.40917969	volts		
					U0140 fault status is not	=	fault active			

## 16 OBDG07A Diagnostic 2D Tables - TCM (8 Speed Common)

## Supporting Documents

able 1										
	Axis	0.00	64.00	128.00		256.00	320.00		448.00	512.00
	Curve	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00
<u>ole 2</u>	Axis	-40.00	-20.00	0.00	30.00	110.00	°C			
	Curve	1.60	1.10	0.95	0.85	0.85	Sec			
<u>le 3</u>	Axis	-40.00	-20.00	0.00	30.00	110.00	°C			
	Curve	1.55	1.05	0.90	0.80	0.80	Sec			
<u>e 4</u>	Axis	-40.00	-20.00	0.00	30.00	110.00	°C			
	Curve	1.40	0.90	0.75		0.65				
le 5	Axis	-40.00	-20.00	0.00	30.00	110.00	°C			
	Curve	1.55	1.05	1.00		1.00				
le 6	Axis	-40.00	-20.00	0.00	30.00	110.00	°C			
	Curve	1.55	1.05	0.90		0.80				
le 7	Avia	CeRSSR e CD 21	CeRSSR e CD 31	CeRSSR e CD 32	CeRSSR e CD 42	CeRSSR e CD 43	CeRSSR e CD 51	CeRSSR e CD 53	CeRSSR e CD 54	CeRSSR e CD 63
	Axis Curve	750.0	750.0	750.0	750.0	750.0	750.0			750.0
			CeRSSR_e_CD_64	CeRSSR_e_CD_65		CeRSSR_e_CD_75	CeRSSR_e_CD_76			CeRSSR_e_CD_86
		Ī	750.0	750.0		750.0	750.0			750.0
			CeRSSR_e_CD_87 750.0		n shift type: 2-1, 3-1,	3-2, 4-2, 4-3, 5-1, 5	5-3, 5-4, 6-3, 6-4, 6-	-5, 7-1, 7-,5 7-6, 8-2	, 8-4, 8-6, 8-7	
		l	750.0	кга						
le 8										
<u></u>	Axis	CeRSSR e US 12	CeRSSR e US 23	CeRSSR e US 34	CeRSSR_e_US_45	CeRSSR e US 56	CeRSSR e US 67	CeRSSR e US 78	CeRSSR e US 13	CeRSSR e US 24
	Curve	750.0				750.0	750.0			

Axis	CeRSSR_e_US_12	CeRSSR_e_US_23	CeRSSR_e_US_34	CeRSSR_e_US_45	CeRSSR_e_US_56	CeRSSR_e_US_67	CeRSSR_e_US_78	CeRSSR_e_US_13	CeRSSR_e_US_24
Curve	750.0	750.0	750.0	750.0	750.0	750.0	750.0	750.0	750.0
-		CeRSSR_e_US_35	CeRSSR_e_US_46	CeRSSR_e_US_57	CeRSSR_e_US_68	up shift type: 1-2, 2-	-3, 3-4, 4-5, 5-6, 6-7	, 7-8, 1-3, 2-4, 3-5,	4-6, 5-7, 6-8
		750.0	750.0	750.0	750.0	kPa			

## 16 OBDG07A Diagnostic 2D Tables - TCM (8 Speed Common)

Supporting Documents

<u>Table 9</u>	NOT USED
Table 10	Axis       RSSR_e_C1_Clutch       RSSR_e_C2_Clutch       RSSR_e_C3_Clutch       RSSR_e_C4_Clutch       RSSR_e_C5_Clutch       clutch1 CB1278R, clutch 2 CB12345R, clutch3 C13567, clutch4 C23468, clutch5 C45678R         Curve       1       1       1       1       BOOLEAN
Table 11	Axis       RSSR_e_C1_Clutch       RSSR_e_C2_Clutch       RSSR_e_C3_Clutch       RSSR_e_C4_Clutch       RSSR_e_C5_Clutch       Clutch1       CB12345R, clutch3       C13567, clutch4       C23468, clutch5       C45678R         Curve       180.0       180.0       180.0       180.0       N*m
Table 12	Axis       RSSR_e_C1_Clutch       RSSR_e_C2_Clutch       RSSR_e_C3_Clutch       RSSR_e_C4_Clutch       Clutch       <
Table 13	Axis       RSSR_e_C1_Clutch       RSSR_e_C2_Clutch       RSSR_e_C3_Clutch       RSSR_e_C4_Clutch       RSSR_e_C5_Clutch       clutch1       CB12345R, clutch2       CB12345R, clutch3       C13567, clutch4       C23468, clutch5       C45678R         Curve       10.0       10.0       10.0       10.0       10.0       N*m
Table 14	Axis       RSSR_e_C1_Clutch       RSSR_e_C2_Clutch       RSSR_e_C3_Clutch       RSSR_e_C4_Clutch       RSSR_e_C5_Clutch       clutch1 CB1278R, clutch 2 CB12345R, clutch3 C13567, clutch4 C23468, clutch5 C45678R         Curve       -30.0       -30.0       -30.0       -30.0       N*m
<u>Table 15</u>	Axis       RSSR_e_C1_Clutch       RSSR_e_C2_Clutch       RSSR_e_C3_Clutch       RSSR_e_C4_Clutch       Clutch       <
<u>Table 16</u>	Axis       RSSR_e_C1_Clutch       RSSR_e_C2_Clutch       RSSR_e_C3_Clutch       RSSR_e_C4_Clutch       Clutch       <
Table 17	Axis       RSSR_e_C1_Clutch       RSSR_e_C2_Clutch       RSSR_e_C3_Clutch       RSSR_e_C4_Clutch       RSSR_e_C5_Clutch       clutch1       CB12345R, clutch2       CB12345R, clutch3       C13567, clutch4       C23468, clutch5       C45678R         Curve       10.0       10.0       10.0       10.0       10.0       N*m

## 16 OBDG07A Diagnostic 2D Tables - TCM (8 Speed Common)

	Supporting Documents	
Table 18	Axis RSSR_e_C1_Clutch RSSR_e_C2_Clutch RSSR_e_C3_Clutch RSSR_e_C4_Clutch RSSR_e_C5_Clutch clutch1 CB1278R, clutch 2 CB12345R, clutch3 C13567, clutch4 C23468, clutch5 C4567	8R
	Curve -30.0 -30.0 -30.0 -30.0 -30.0 N*m	
Table 19	NOT USED	
Table 20	NOT USED	
Table 21	Axis         -40.00         0.00         40.00         °C           Curve         5.00         5.00         Sec	
Table 22	NOT USED NOT USED	
Table 23	NOT USED NOT USED	
<u>Table 24</u>	Axis         -7.00         10.00         40.00         °C           Curve         1.50         1.25         1.00         Sec	
Table 25	Axis         -7.00         10.00         40.00         °C           Curve         -2000.00         -2000.00         -2000.00         RPM/Sec	
<u>Table 26</u> <u>Table 27</u>	Axis         -40.00         -30.00         -20.00         0.00         20.00         °C           Curve         1800.00         1500.00         1200.00         600.00         60.00         Sec	
<u>1 avie 21</u>	Axis         0.00         20.00         60.00         100.00         120.00         Kph           Curve         -8.00         -8.00         -8.00         -8.00         °C	

Table 28	Supporting Documents
	Axis       -40.00       -20.00       0.00       30.00       110.00       ℃         Curve       5.00       3.00       2.00       1.75       1.00       Sec
Table 29	Axis       RSSR_e_C1_Clutch       RSSR_e_C2_Clutch       RSSR_e_C3_Clutch       RSSR_e_C4_Clutch       RSSR_e_C5_Clutch       Clutch1       CB1278R, clutch 2       CB12345R, clutch3       C13567, clutch4       C23468, clutch5       C45678R         Curve       0.9000       0.9000       0.9000       0.9000       0.9000       seconds
Table 30	Axis       RSSR_e_C1_Clutch       RSSR_e_C2_Clutch       RSSR_e_C3_Clutch       RSSR_e_C4_Clutch       RSSR_e_C5_Clutch       clutch1 CB1278R, clutch 2 CB12345R, clutch3 C13567, clutch4 C23468, clutch5 C45678R         Curve       0.9000       0.9000       0.9000       0.9000       seconds
<u>Table 31</u>	Axis       RSSR_e_C1_Clutch       RSSR_e_C2_Clutch       RSSR_e_C3_Clutch       RSSR_e_C4_Clutch       RSSR_e_C5_Clutch       clutch1 CB1278R, clutch 2 CB12345R, clutch3 C13567, clutch4 C23468, clutch5 C45678R         Curve       0.9000       0.9000       0.9000       0.9000       seconds
<u>Table 32</u>	Axis       RSSR_e_C1_Clutch       RSSR_e_C2_Clutch       RSSR_e_C3_Clutch       RSSR_e_C4_Clutch       RSSR_e_C5_Clutch       clutch1 CB1278R, clutch 2 CB12345R, clutch3 C13567, clutch4 C23468, clutch5 C45678R         Curve       4       4       4       4       4       counts
<u>Table 33</u>	Axis       RSSR_e_C1_Clutch       RSSR_e_C2_Clutch       RSSR_e_C3_Clutch       RSSR_e_C4_Clutch       RSSR_e_C5_Clutch       clutch1       CB1278R, clutch 2       CB12345R, clutch3       C13567, clutch4       C23468, clutch5       C45678R         Curve       4       4       4       4       4       counts
<u>Table 34</u>	NOT USED NOT USED
<u>Table 35</u>	Axis       RSSR_e_C1_Clutch       RSSR_e_C2_Clutch       RSSR_e_C3_Clutch       RSSR_e_C4_Clutch       Clutch       <
Table 36	Axis       RSSR_e_C1_Clutch       RSSR_e_C2_Clutch       RSSR_e_C3_Clutch       RSSR_e_C4_Clutch       RSSR_e_C5_Clutch       Clutch1 CB1278R, clutch 2 CB12345R, clutch3 C13567, clutch4 C23468, clutch5 C45678R         Curve       0.5000       0.5000       0.5000       0.5000       seconds
Table 37	Axis       RSSR_e_C1_Clutch       RSSR_e_C2_Clutch       RSSR_e_C3_Clutch       RSSR_e_C4_Clutch       RSSR_e_C5_Clutch       clutch1 CB1278R, clutch 2 CB12345R, clutch3 C13567, clutch4 C23468, clutch5 C45678R         Curve       300.0       300.0       300.0       300.0       kPa

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Table 38									
		Axis	-40.00	-20.00	0.00	30.00	110.00 °C		
		Curve	0.95	0.45	0.30	0.30	0.30 Sec		
Table 39									
Table 39		Axis	-40.00	-20.00	0.00	30.00	110.00 °C		
		Curve	0.95	0.45	0.30	0.20	0.20 Sec		
			0.00	0.10	0.00	0.20	0.20		
Table 40									
		Axis	-40.00	-20.00	0.00	30.00	110.00 °C		
		Curve	0.95	0.45	0.30	0.20	0.20 Sec		
T-1-1- 44									
Table 41		Avia	-40.00	20.00	0.00	30.00	110.00 °C		
		Axis Curve	1.10	-20.00 0.60	0.55	0.55	0.55 Sec		
			1.10	0.00	0.00	0.00	0.00 000		
Table 42									
		Axis	-40.00	-20.00	0.00	30.00	110.00 °C		
		Curve	0.95	0.45	0.30	0.20	0.20 Sec		
<b>T</b> 1 1 40									
Table 43	NOTUGED								
	NOT USED								
	NOT USED								
Table 44									
	NOT USED								
	NOT USED								
	NOT USED								
Table 45									
		Axis eRSC	R e CC US eRSCF	R e CC CD eRSCF	R e CC PD eRSCR	e CC GS up shi	ft, closed throttle down shi	ft, power down shift,	garage shift
		Curve	1	1	1	0 BOOL		,	0 0
Table 46									
		Axis	0	1	2	3 1 ADc	hannel, 2 AD channels, 3 /	AD channels, 4 AD c	hannels
		Curve	1	0	0	0 BOOL			
Table 47									
		Axis A2D	TestVoltage1 A2D_T	estVoltage2 A2D_T	estVoltage3 A2D_Te	estVoltage4 1 ADc	hannel, 2 AD channels, 3 /	AD channels, 4 AD c	hannels
		Curve	5.0000	25.0000	75.0000	95.0000 volts		, -	

Supporting Documents

	Supporting Documents
Table 48	
	Axis SR_e_6p25msSeq ISR_e_12.5msSeq PISR_e_25msSeq PISR_e_LORES_C 6.25 msec loop, 12.5 msec loop, 25 msec loop, low res engine
	Curve 0.2000 0.2000 0.2000 409.5938 seconds
Table 49	
1000 45	Axis SR_e_6p25msSeq ISR_e_12.5msSeq PISR_e_25msSeq PISR_e_LORES_C 6.25 msec loop, 12.5 msec loop, 25 msec loop, low res engine
	Curve 16 8 4 16 counts
Table 50	
	Axis eMPMR_i_MontrA eMPMR_i_MontrB eMPMR_i_MontrC seed key test enable, seed sequence test enable, seed timeout test enable
	Curve 1 0 0 BOOLEAN
Table 51	
	Axis 0 1 speed sensor1, speed sensor2
	Curve 0.2500 0.0000 volts
Table 52	
	Axis 0 1 speed sensor1, speed sensor2
	Curve 40 65535 counts
Table 53	
	Axis 0 1 speed sensor1, speed sensor2
	Curve 0.0500 409.5938 seconds
Table 54	
Table 54	
	Axis 0 1 speed sensor1, speed sensor2
	Curve 1 0 BOOLEAN
Table 55	
	Axis 0 1 speed sensor1, speed sensor2
	Curve 4.7500 12.0000 volts
Table 56	
	Axis 0 1 speed sensor1, speed sensor2
	Curve 40 65535 counts
Table 57	
	Axis 0 1 speed sensor1, speed sensor2
	Curve 0.0500 409.5938 seconds

Table 59	Supporting Documents	
Table 58	Axis 0 1 speed sensor circuit low, speed sensor circuit high	
	Curve 1 0 BOOLEAN	
Table 59		
	Axis -40.00 -20.00 0.00 30.00 110.00 °C	
	Curve         1.2000         0.9000         0.8500         0.7500         0.7500         seconds	
Table 60		
	Axis -40.00 -20.00 0.00 30.00 110.00 ℃	
	Curve         1.2500         0.7500         0.6000         0.6000         seconds	
Table 61		
Table 61	Axis -40.00 -20.00 0.00 30.00 110.00 ♀C	
	Curve         1.2000         0.7000         0.5500         0.4500         0.4500         seconds	
Table 62		
	Axis -40.00 -20.00 0.00 30.00 110.00 °C	
	Curve 1.200 0.700 0.5500 0.5500 0.5500 seconds	
Table 63		
	Axis         -40.00         -20.00         0.00         30.00         110.00         ℃           Curve         1.2000         0.7000         0.5500         0.4500         seconds	
Table 64		
	Axis CeCANG_e_RcvM{CeCANG_e_RcvM{CeCANG_e_RcvM{CeCANG_e_RcvM{CeCANG_e_RcvM{CeCANG_e_RcvM{CeCANG_e_RcvM{CeCANG_e_RcvM{CeCANG_e_RcvM{CeCANG_e_RcvM}frame}}}	
	Curve CeCANR_e_InvalidCeCANR_e_InvalidCeCANR_e_InvalidCeCANR_e_InvalidCeCANR_e_BusA_CeCANR_e_InvalidCeCANR_e_Inva	/alid
	CeCANG_e_RcvM{CeCANG_e_RcvM{CeCANG_e_RcvM{CeCANG_e_RcvM{CeCANG_e_RcvM{CeCANG_e_RcvM{CeCANG_e_RcvM{CeCANG_e_RcvM{CeCANG_e_RcvM}frame	
		/alid
	CeCANG_e_RcvM <mark>{CeCANG_e_RcvM{CeCANG_e_RcvM{CeCANG_e_RcvM{CeCANG_e_RcvM{CeCANG_e_RcvM{CeCANG_e_RcvM{CeCANG_e_RcvM{CeCANG_e_RcvM}frame}} (CeCANR_e_BusA_CeCANR_e_InvalidCeCANR_e_BusA_CeCANR_e_InvalidCeCANR_E_InvalidCeCANR_E_I</mark>	valid
	CeCANK_e_busA_CeCANK_e_invaliqCeCANK_e_invaliqCeCANK_e_busA_CeCANK_e_invaliqCeCANK_e_busA_CeCANK_e_busA_CeCANK_e_busA_CeCANK_e_invaliq enable of inv	allu
	CeCANR_e_InvalidCeCANR_e_BusA_CeCANR_e_InvalidCeCANR_e_InvalidCeCANR_e_BusB_CeCANR_e_InvalidCeCANR_e_InvalidCeCANR_e_BusA_enable or inv	valid
	CeCANG_e_RcvM CeCANG_e_RcvM CeCANG_e_RcvM CeCANG_e_RcvM CeCANG_e_RcvM CeCANG_e_RcvM CeCANG_e_RcvM frame	
	CeCANR_e_Invalid CeCANR_e_Invalid CeCANR_e_Invalid CeCANR_e_Invalid CeCANR_e_Invalid CeCANR_e_Invalid enable or invalid	

# Supporting Documents

Axis	CeCANG_e_RcvM	CeCANG_e_RcvM	CeCANG_e_RcvMs	CeCANG_e_RcvM	CeCANG_e_RcvM	CeCANG_e_RcvM	CeCANG_e_RcvMs	CeCANG_e_RcvM	CeCANG_e_RcvM frame
Curve	12.000	12.000	12.000	12.000	0.500	12.000	12.000	12.000	12.000 seconds
		CeCANG_e_RcvM	CeCANG_e_RcvMs	CeCANG_e_RcvM	CeCANG_e_RcvM	CeCANG_e_RcvM	CeCANG_e_RcvMs	CeCANG_e_RcvM	CeCANG_e_RcvM frame
		0.500	12.000	12.000	12.000	12.000	12.000	0.500	12.000 seconds
		CeCANG_e_RcvM	CeCANG_e_RcvMs	CeCANG_e_RcvM	CeCANG_e_RcvM	CeCANG_e_RcvM	CeCANG_e_RcvMs	CeCANG_e_RcvM	CeCANG_e_RcvM frame
		0.500	12.000	12.000	12.000	12.000	12.000	12.000	12.000 seconds
		CeCANG_e_RcvM	CeCANG_e_RcvMs	CeCANG_e_RcvM	CeCANG_e_RcvM	CeCANG_e_RcvM	CeCANG_e_RcvMs	CeCANG_e_RcvM	CeCANG_e_RcvM frame
		12.000							12.000 seconds
		CeCANG_e_RcvM	CeCANG_e_RcvMs	CeCANG_e_RcvM	CeCANG_e_RcvM	CeCANG_e_RcvM	CeCANG_e_RcvM	frame	
		12.000	12.000	12.000	12.000	12.000	0.500	seconds	

Table 65

## Supporting Documents - 3D Tables

3D Table 1	CeTSKR_Cnt_MaxCPUs	X-Axis Calibration		CeTSKR	L_e_CPU			CeTSKR	_e_CPU2		CPU
	CePISR_e_NumOfSeqTasks	Y-Axis Calibration	ePISR_e_6p25msSeq	ePISR_e_12p5msSeq	CePISR_e_25msSeq	CePISR_e_LORES_C	ePISR_e_6p25msSeq	ePISR_e_12p5msSeq	CePISR_e_25msSeq	CePISR_e_LORES_C	loop test type
	KaPISD_b_ProgSeqWatchEnbl	Table Calibration	1	1	1	0	0	0	0	0	BOOLEAN

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	ł	Secondary Malfunction		Enable Conditions			Tim Requi		Mil Illum.
Transmission Control Module (TCM)	C124F	The lateral accleration sensor signal failed at a low voltge	hardware configuration	U U		transient delay timer	>=	30	Sec	>=	75	Sec	Special No MIL
			Lateral accleration sensor raw signal	op <= -3.849999905 g's						out of	120	Sec	
			hardware configuration	-									
			Lateral accleration magnitude	op >= -3.849999905 g's									
						Lateral acceleration low voltage diagnostic enable calibration	=	1					
						Battery Voltage Battery Voltage	<= >=	31.999023 9	Volts Volts				
						Battery voltage is within the allowable limits for	>=	0.1	Sec				
						Ignition Voltage Ignition Voltage	<= >=	31.999023 9	Volts Volts				
						Service Fast Learn (SFL) Mode VBS Failsafe		FALSE	Boolean				
						Ignition voltage and SFL conditions met for	>=	0.1	Sec				
					Disable Conditions:	MIL not Illuminated for DTC's:							
							ECM: None						
Transmission Control Module (TCM)	C1250	The lateral accleration sensor signal failed at a high voltge	hardware configuration	CeLATR_e_V = oltageDirectPr op		transient delay timer	>=	30	Sec	>=	75	Sec	Special No MIL
			Lateral accleration sensor raw signal							out of	120	Sec	
			hardware configuration	CeLATR_e_V = oltageDirectPr									
			Lateral accleration magnitude	ор									
						Lateral acceleration high voltage diagnostic enable calibration	=	1					
						Battery Voltage	<=	31.999023	Volts				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	ł	Secondary Malfunction		Enable Conditions			Time Required	я	Mil Illum.
						Battery Voltage	>=	9	Volts				
						Battery voltage is within the		0.1	Sec				
						allowable limits for							
						Ignition Voltage	<=	31.999023	Volts				
						Ignition Voltage	>=	9	Volts				
						Service Fast Learn (SFL) Mode VBS Failsafe	=	FALSE	Boolean				
						Ignition voltage and SFL conditions met for	>=	0.1	Sec				
					Disable	MIL not Illuminated for	TCM: U0073						
					Conditions:	DTC's:							
							ECM: None						
Transmission Control Module	C1251	The lateral accleration signal is stuck	absolute value (lateral accleration)	>= 0.529999971 g's		absolute value (lateral	>=	0.53	g's	>=	75	Sec	Special
(TCM)		at a high magnitude in range	, , , , , , , , , , , , , , , , , , ,	5		accleration) for stablity absolute value (lateral			5				No MIL
			absolute value (lateral accleration)	<= 3.849999905 g's		accleration) for stablity		3.8499999	g's				
						stability time	>=	30	Sec				
						Diagnostic shifting override				-			-
						command		FALSE	Boolean				
						Attained Gear State	=	1st through					
						Attained Ocal State		8th					
						Attained Gear Slip	<=	100	RPM				
								Clutch to					
						Transmission Type	=	Clutch					
						rransmission rype	-	Transmissi					
								on					
						High Side Drivers enabled		TRUE	Boolean				
						Vehicle Speed		15	kph				
						Lateral acceleration stuck in range diagnostic enable		1					
						calibration	=	I					
						Battery Voltage	<=	31.999023	Volts				
						Battery Voltage		9	Volts				1
						Battery voltage is within the							
						allowable limits for	>=	0.1	Sec				
						Ignition Voltage		31.999023	Volts				
						Ignition Voltage	>=	9	Volts				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value		Secondary Malfunction		Enable Conditions			Time Require	d	Mil Illum.
						Service Fast Learn (SFL) Mode VBS Failsafe Ignition voltage and SFL conditions met for	= >=	FALSE 0.1	Boolean Sec				
					Disable nditions:	MIL not Illuminated for	TCM: P0716,	, P07C0, P077					
							ECM: None						
Transmission Control Module (TCM)	C1252	The longitudinal accleration sensor signal failed at a low voltge	hardware configuration	CeLATR_e_V = oltageDirectPr op		transient delay timer	>=	30	Sec	>=	75	Sec	Special No MIL
			longitudinal accleration sensor raw signal hardware configuration	<= -3.849999905 gs CeLATR_e_V = oltageDirectPr						out of	120	Sec	
			longitudinal accleration sensor raw signal	op >= -3.849999905 g's									
						longitudinal acceleration low voltage diagnostic enable calibration		1					
						Battery Voltage Battery Voltage Battery voltage is within the	>=	31.999023 9	Volts Volts				
						allowable limits for Ignition Voltage	<=	0.1 31.999023	Sec Volts				
						Ignition Voltage Service Fast Learn (SFL) Mode VBS Failsafe	>=	9 FALSE	Volts Boolean				
						Ignition voltage and SFL conditions met for	>=	0.1	Sec				
					Disable nditions:	MIL not Illuminated for DTC's:	TCM: U0073 ECM: None						

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions			Tim Requi		Mil Illum.
Transmission Control Module (TCM)	C1253	The longitudinal accleration sensor signal failed at a high voltge	hardware configuration	CeLATR_e_V = oltageDirectPr op	transient delay timer	>=	30	Sec	>=	75	Sec	Special No MIL
			longitudinal accleration sensor raw signal	>= 3.849999905 g's					out of	120	Sec	
			hardware configuration	CeLATR_e_V = oltageDirectPr op								
			longitudinal accleration sensor raw signal									
					longitudinal acceleration high voltage diagnostic enable calibration	=	1					
					Battery Voltage Battery Voltage	<=	31.999023 9	Volts Volts				
					Battery voltage is within the allowable limits for	>=	0.1	Sec				
					Ignition Voltage Ignition Voltage	<= >=	31.999023 9	Volts Volts				
					Service Fast Learn (SFL) Mode VBS Failsafe Ignition voltage and SFL	=	FALSE	Boolean				
					conditions met for		0.1	Sec				
				Disat Conditior		TCM: U0073 ECM: None						
Transmission Control Module (TCM)	C1254	The longitudinal accleration signal is stuck at a high magnitude in range	absolute value (longitudinal accleration)	>= 0.529999971 g's	absolute value (longitudina accleration) for stablity	>=	0.53	g's	>=	75	Sec	Special No MIL
			absolute value (longitudinal accleration)	<= 3.849999905 g's	absolute value (longitudina accleration) for stability		3.84999999	g's	out of	120	Sec	
					stability time Diagnostic shifting override command	>=	30 FALSE	Sec Boolean				
					Attained Gear State	=	1st through 8th					
					Attained Gear Slip	<=	100	RPM				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		eshold alue	Secondary Malfunction		Enable Conditions			Tir Requ		Mil Illum.
						Transmission Type	=	Clutch to Clutch Transmissi on					
						High Side Drivers enabled	=	TRUE	Boolean				
						transmssion output speed acceleration			meter/second /second				
						Vehicle Speed		15	kph				
						longitudinal acceleration stuck in range diagnostic enable		1					
						calibration							
						Battery Voltage Battery Voltage	<= >=	31.999023 9	Volts Volts				
						Battery voltage is within the allowable limits for		0.1	Sec				
						Ignition Voltage	<=	31.999023	Volts				
						Ignition Voltage Service Fast Learn (SFL) Mode	>=	9	Volts				
						VBS Failsafe	=	FALSE	Boolean				
						Ignition voltage and SFL conditions met for	>=	0.1	Sec				
					Disable Conditions	DTC's:		F, P07C0, P07					
Manual Mode Switch	P0827	Manual Mode Switch Circuit Low Voltage	Manual Mode Switch State	= Invalid 1	enumeration								Special No MIL
										>= out	5	Fail Time (Sec) Sample Time	
										of	7.5	(Sec)	
						manual mode switch diagnostic monitor enable calibration		1					
						Diagnostic enable complete flag	=	TRUE	Boolean				
						Diagnostic re-enable complete flag	=	TRUE	Boolean				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		shold Ilue	Secondary Malfunction		Enable Conditions			Tir Requ		Mil Illum.
						Service Fast Learn (SFL) Mode VBS Failsafe	=	FALSE	Boolean				
						Ignition Voltage Max (disabled above this value)	<=	31.999023	Volts				
						Ignition Voltage Min (enabled above this value)	>=	9	Volts				
						Ignition voltage delay timer	>=	0.1	Enable Time (Sec)				
						P0828 & P085F Status is	¥	Fault Active					
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None						
							ECM: None						
Manual Mode Switch	P0828	Manual Mode Switch Circuit High Voltage	Manual Mode Switch State	= Tap Down	enumeration								Special No MIL
			or Manual Mode Switch State	= Invalid 3	enumeration								
			or Manual Mode Switch State	= Invalid 4	enumeration								
										>= out	5	Fail Time (Sec) Sample Time	
										of	7.5	(Sec)	-
						manual mode switch diagnostic monitor enable calibration	=	1					
						Diagnostic enable complete flag	=	TRUE	Boolean				
						Diagnostic re-enable complete flag		TRUE	Boolean				
						Service Fast Learn (SFL) Mode VBS Failsafe	=	FALSE	Boolean				
						Ignition Voltage Max (disabled above this value)	<=	31.999023	Volts				
						Ignition Voltage Min (enabled above this value)	>=	9	Volts				
						Ignition voltage delay timer	>=	0.1	Enable Time (Sec)				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		shold Ilue	Secondary Malfunction		Enable Conditions				ime Juired	Mil Illum.
					Disable Conditions:	P0827 & P085F Status is MIL not Illuminated for DTC's:	TCM: None	Fault Active					
Manual Mode Switch	P085F	Manual Mode Switch Circuit Performance	Manual Mode Switch State	= Invalid 2	enumeration					>= out of	5 7.5	Fail Time (Sec) Sample Time (Sec)	Special No MIL
						manual mode switch diagnostic monitor enable calibration		1					
						Diagnostic enable complete flag		TRUE	Boolean				
						Diagnostic re-enable complete flag		TRUE	Boolean				
						Service Fast Learn (SFL) Mode VBS Failsafe	=	FALSE	Boolean				
						Ignition Voltage Max (disabled above this value)	<=	31.999023	Volts				
						Ignition Voltage Min (enabled above this value)		9	Volts				
						Ignition voltage delay timer	>=	0.1	Enable Time (Sec)				
						P0827 & P0828 Status is	. ≠	Fault Active					
					Disable Conditions:	MIL not Illuminated for DTC's:							
Tap Up Tap Down Switch (TUTD)	P1761	Tap Up and Down switch signal circuit (rolling count)	Rolling count value received from BCM and expected TCM calculated value not	= TRUE	Boolean					>=	3	Fail Counter (100 msec continuous)	Special No MIL
										>	10	Fail Timer (Sec)	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions		Time Required	Mil Illum.
		·			Tap up/down message health (message receive occur)		TRUE	Boolean		
					Tap up/downswitch signal circuit (rolling count) diagnostic monitor enable calibration	=	1	Boolean		
					Ignition Voltage		31.999023	Volts		
					Ignition Voltage		9	Volts		
					Service Fast Learn (SFL) Mode VBS Failsafe		FALSE	Boolean		
					Ignition voltage and SFL conditions met for		0.1	Sec		
					Service mode \$04 active and end of trip pocessing active		FALSE	Boolean		
				Disable Conditions:	MIL not Illuminated for DTC's:					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value		Secondary Malfunction		Enable Conditions			Tim Requi		Mil Illum.
Transmission Control Module (TCM)	C124F	The lateral accleration sensor signal failed at a low voltge	hardware configuration	Ŭ		transient delay timer	>=	30	Sec	>=	75	Sec	Special No MIL
			Lateral accleration sensor raw signal	op <= -3.849999905 g's						out of	120	Sec	
			hardware configuration	Ŭ									
			Lateral accleration magnitude	op >= -3.849999905 g's									
						Lateral acceleration low voltage diagnostic enable calibration	=	1					
						Battery Voltage Battery Voltage	<= >=	31.999023 9	Volts Volts				
						Battery voltage is within the allowable limits for	>=	0.1	Sec				
						Ignition Voltage Ignition Voltage	<= >=	31.999023 9	Volts Volts				
						Service Fast Learn (SFL) Mode VBS Failsafe	=	FALSE	Boolean				
						Ignition voltage and SFL conditions met for	>=	0.1	Sec				
					Disable Conditions:	MIL not Illuminated for DTC's:							
							ECM: None						
Transmission Control Module (TCM)	C1250	The lateral accleration sensor signal failed at a high voltge	hardware configuration	CeLATR_e_V = oltageDirectPr op		transient delay timer	>=	30	Sec	>=	75	Sec	Special No MIL
			Lateral accleration sensor raw signal							out of	120	Sec	
			hardware configuration	CeLATR_e_V = oltageDirectPr									
			Lateral accleration magnitude	op <= 3.849999905 g's									
			y			Lateral acceleration high voltage diagnostic enable calibration	=	1					
						Battery Voltage	<=	31.999023	Volts				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	ł	Secondary Malfunction		Enable Conditions			Time Require	d	Mil Illum.
						Battery Voltage		9	Volts				
						Battery voltage is within the	>=	0.1	Sec				
						allowable limits for							
						Ignition Voltage Ignition Voltage	<= >=	31.999023 9	Volts Volts				
						Service Fast Learn (SFL) Mode	/-						
						VBS Failsafe	=	FALSE	Boolean				
						Ignition voltage and SFL	>=	0.1	Sec				
						conditions met for	>=	0.1	Set				
					Disable	MIL not Illuminated for							
					Conditions:	DTC's:	T CIVI. 00075						
							ECM: None						
Transmission Control Module	C1251	The lateral accleration signal is stuck	absolute value (lateral accleration)	>= 0.529999971 d's		absolute value (lateral	>=	0.53	g's	>=	75	Sec	Special
(TCM)		at a high magnitude in range				accleration) for stablity			5-				No MIL
			absolute value (lateral accleration)	<= 3.849999905 g's		absolute value (lateral accleration) for stablity	<=	3.8499999	g's				
						stability time	>=	30	Sec				
						Diagnostic shifting override							-
						command	=	FALSE	Boolean				
								1st through					
						Attained Gear State	=	8th					
						Attained Gear Slip	<=	100	RPM				
						Autoriou Gour Shp	·	Clutch to					
						Transmission Tuna		Clutch					
						Transmission Type	=	Transmissi					
								on					
						High Side Drivers enabled		TRUE	Boolean				
	1					Vehicle Speed Lateral acceleration stuck in	>=	15	kph				
	1					range diagnostic enable	=	1					
	1					calibration							
	1					Battery Voltage	<=	31.999023	Volts				
	1					Battery Voltage	>=	9	Volts				
	1					Battery voltage is within the allowable limits for	>=	0.1	Sec				
	1					Ignition Voltage		31.999023	Volts				
	1					Ignition Voltage		9 9	Volts				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value		Secondary Malfunction		Enable Conditions			Time Require	d	Mil Illum.
						Service Fast Learn (SFL) Mode VBS Failsafe	=	FALSE	Boolean				
						Ignition voltage and SFL conditions met for	>=	0.1	Sec				
					Disable Conditions:		P0723, P07BI P077D, P215	, P07C0, P077					
							ECM: None						
Transmission Control Module (TCM)	C1252	The longitudinal accleration sensor signal failed at a low voltge	hardware configuration	CeLATR_e_V = oltageDirectPr op		transient delay timer	>=	30	Sec	>=	75	Sec	Special No MIL
			longitudinal accleration sensor raw signal hardware configuration	<= -3.849999905 g's CeLATR_e_V						out of	120	Sec	
			longitudinal accleration sensor raw	ор									
						longitudinal acceleration low voltage diagnostic enable calibration	=	1					
						Battery Voltage		31.999023 9	Volts Volts				
						Battery Voltage Battery voltage is within the allowable limits for		9 0.1	Sec				
						Ignition Voltage Ignition Voltage	<= >=	31.999023 9	Volts Volts				
						Service Fast Learn (SFL) Mode VBS Failsafe		FALSE	Boolean				
						Ignition voltage and SFL conditions met for		0.1	Sec				
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: U0073 ECM: None						

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions			Tim Requi		Mil Illum.
Transmission Control Module (TCM)	C1253	The longitudinal accleration sensor signal failed at a high voltge	hardware configuration	ор	transient delay time	>=	30	Sec	>= out	75 120	Sec Sec	Special No MIL
			signal hardware configuration longitudinal accleration sensor raw	CeLATR_e_V = oltageDirectPr op					of	120	Sec	
			signal	<= 3.849999905 g's								
					longitudinal acceleration high voltage diagnostic enable calibratior		1					
					Battery Voltage		31.999023	Volts				
					Battery Voltage Battery voltage is within the allowable limits fo	×-	9 0.1	Volts Sec				
					Ignition Voltage	<=	31.999023	Volts				
					Ignition Voltage Service Fast Learn (SFL) Mode VBS Failsafe		9 FALSE	Volts Boolean				
					Ignition voltage and SFI conditions met fo		0.1	Sec				
				Disa Conditio		TCM: U0073 ECM: None						
Transmission Control Madula		The low-theological content is stored to	- h lute									Createl
Transmission Control Module (TCM)	C1254	The longitudinal accleration signal is stuck at a high magnitude in range	absolute value (longitudinal accleration)	>= 0.529999971 g's	absolute value (longitudina accleration) for stability	>=	0.53	g's	>=	75	Sec	Special No MIL
			absolute value (longitudinal accleration)	<= 3.849999905 g's	absolute value (longitudina accleration) for stablity	<=	3.8499999	g's	out of	120	Sec	
					stability time Diagnostic shifting override		30	Sec				-
					command	=	FALSE	Boolean				
					Attained Gear State	=	1st through 8th					
					Attained Gear Slip	<=	100	RPM				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Т	hreshold Value	Secondary Malfunction		Enable Conditions		Time Required	Mil Illum.
						Transmission Type	=	Clutch to Clutch Transmissi on			
						High Side Drivers enabled	=	TRUE	Boolean		
						transmssion output speed acceleration	<u> </u>		meter/second /second		
						Vehicle Speed		15	kph		
						longitudinal acceleration stuck in range diagnostic enable		1			
						calibration		21 000022	) ( a lta		
						Battery Voltage Battery Voltage	<=	31.999023 9	Volts Volts		
						Battery voltage is within the allowable limits for	<u> </u>	0.1	Sec		
						Ignition Voltage		31.999023	Volts		
						Ignition Voltage Service Fast Learn (SFL) Mode	>=	9	Volts		
						VBS Failsafe	=	FALSE	Boolean		
						Ignition voltage and SFL conditions met for	>=	0.1	Sec		
					Disable Conditions	: DTC's:	P0723, P078 P077D, P21	BF, P07C0, P07			
							ECM: None				
Tap Up Tap Down Switch (TUTD)	P1765	Upshift Switch Circuit #2	Fail Case 1 Tap Up Switch Stuck in the L Position in Range 1 Enable		Boolean						Special No MIL
			Tap Up Switch Stuck in the L Position in Range 2 Enable		Boolean						
			Tap Up Switch Stuck in the L Position in Range 3 Enable		Boolean						
			Tap Up Switch Stuck in the L Position in Range 4 Enable	ed I	Boolean						
			Tap Up Switch Stuck in the L Position in Range 5 Enable	ed I	Boolean						
			Tap Up Switch Stuck in the L Position in Range 6 Enable		Boolean						

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		eshold /alue	Secondary Malfunction		Enable Conditions		R	Time equired	Mil Illum.
			Tap Up Switch Stuck in the Up Position in Neutral Enabled	= 0	Boolean							
			Tap Up Switch Stuck in the Up Position in Park Enabled	= 0	Boolean							
			Tap Up Switch Stuck in the Up Position in Reverse Enabled	= 0	Boolean							
			Tap Up Switch ON	= TRUE	Boolean					>= 1	Fail Time (Sec)	
			Fail Case 2 Tap Up Switch Stuck in the Up Position in Range 1 Enabled	= 1	Boolean							1
			Tap Up Switch Stuck in the Up Position in Range 2 Enabled	= 1	Boolean							
			Tap Up Switch Stuck in the Up Position in Range 3 Enabled	= 1	Boolean							
			Tap Up Switch Stuck in the Up Position in Range 4 Enabled	= 1	Boolean							
			Tap Up Switch Stuck in the Up Position in Range 5 Enabled	= 1	Boolean							
			Tap Up Switch Stuck in the Up Position in Range 6 Enabled	= 1	Boolean							
			Tap Up Switch Stuck in the Up Position in Neutral Enabled	= 0	Boolean							
			Tap Up Switch Stuck in the Up Position in Park Enabled	= 0	Boolean							
			Tap Up Switch Stuck in the Up Position in Reverse Enabled	= 0	Boolean							
			Tap Up Switch ON NOTE: Both Failcase1 and	= TRUE	Boolean							
			Failcase 2 Must Be Met							>= 120	Fail Time (Sec)	
						Time Since Last Range	>=	1	Enable Time			
						Change Ignition Voltage Lo		9	(Sec) Volts			
						Ignition Voltage Lo	>= <=	9 31.999023	Volts			
						Engine Speed Lo	>=	250	RPM			
						Engine Speed Hi	<=	7500	RPM			
						Engine Speed is within the	>=	5	Sec			
						allowable limits for	~-	5	500			

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		reshold Value	Secondary Malfunction	Enable Conditions	Time Require	Mil d Illum.
						P1765 Status is	Test Failed This Key On or Fault Active		
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P1767, P1761, P182E, P1915 ECM: None		
Tap Up Tap Down Switch (TUTD)	P1766	Downshift Switch Circuit #2	Fail Case 1 Tap Down Switch Stuck in the Down Position in Range 1 Enabled	= 1	Boolean				Special No MIL
			Tap Down Switch Stuck in the Down Position in Range 2 Enabled	= 1	Boolean				
			Tap Down Switch Sluck in the Down Position in Range 3 Enabled	= 1	Boolean				
			Tap Down Switch Stuck in the Down Position in Range 4 Enabled	= 1	Boolean				
			Tap Down Switch Stuck in the Down Position in Range 5 Enabled	= 1	Boolean				
			Tap Down Switch Stuck in the Down Position in Range 6 Enabled	= 1	Boolean				
			Tap Down Switch Stuck in the Down Position in Range Neutral Enabled	= 0	Boolean				
			Tap Down Switch Stuck in the Down Position in Range Park Enabled	= 0	Boolean				
			Tap Down Switch Stuck in the Down Position in Range Reverse Enabled		Boolean				
			Tap Down Switch ON	= TRUE	Boolean			>= 1	sec

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		reshold Value	Secondary Malfunction		Enable Conditions			Tim Requi		Mil Illum.
			Fail Case 2 Tap Down Switch Stuck in the Down Position in Range 1 Enabled	= 1	Boolean								
			Tap Down Switch Stuck in the Down Position in Range 2 Enabled	= 1	Boolean								
			Tap Down Switch Stuck in the Down Position in Range 3 Enabled	= 1	Boolean								
			Tap Down Switch Stuck in the Down Position in Range 4 Enabled	= 1	Boolean								
			Tap Down Switch Stuck in the Down Position in Range 5 Enabled	= 1	Boolean								
			Tap Down Switch Stuck in the Down Position in Range 6 Enabled	= 1	Boolean								
			Tap Down Switch Stuck in the Down Position in Neutral Enabled	= 0	Boolean								
			Tap Down Switch Stuck in the Down Position in Park Enabled	= 0	Boolean								
			Tap Down Switch Stuck in the Down Position in Reverse Enabled	= 0	Boolean								
			Tap Down Switch ON NOTE: Both Failcase1 and Failcase 2 Must Be Met	= TRUE	Boolean					>=	120	sec	
						Time Since Last Range Change	>=	1	Sec				
						Ignition Voltage Lo	>=	9	Volts				
						Ignition Voltage Hi Engine Speed Lo	<= >=	18 250	Volts RPM				
						Engine Speed Hi	<=	7500	RPM				
						Engine Speed is within the allowable limits for	>=	5	Sec				
						P1766 Status is	¥	Test Failed This Key On or Fault Active					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		eshold alue	Secondary Malfunction		Enable Conditions				me uired	Mil Illum.
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P1767, ECM: None	P1761, P182E,	P1915				
Tap Up Tap Down Switch (TUTD)	P1767	Up and Down Shift Switch Circuit #2	TUTD Circuit Reads Invalid Voltage	= TRUE	Boolean	Ignition Voltage Lo	>=	9	Volts	>=	60	Fail Time (Sec)	Special No MIL
						Ignition Voltage Hi	<=	31.999023	Volts				
						Engine Speed Lo Engine Speed Hi		250 7500	RPM RPM				
						Engine Speed is within the							
						allowable limits for		5	Sec				
						P1767 Status is	¥	Test Failed This Key On or Fault Active					
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P1761 ECM: None						
Tap Up Tap Down Switch		Tap Up and Down Enable Switch		Park or									Special
(TUTD)	P1876	Circuit	Current range	<ul> <li>Reverse or Neutral</li> </ul>	Range State								No MIL
			TUTD Enable Switch is Active		Boolean								
										>=	3	Fail Time (Sec)	
						Ignition Voltage Lo	>=	9	Volts	>=	5	Fail Counts	
						Ignition Voltage Hi		31.999023	Volts				
						Vehicle Speed Lo		511.99219	KPH				
						Engine Speed Lo		250	RPM				
						Engine Speed Hi Engine Speed is within the		7500	RPM				
						allowable limits for	>=	5	Sec				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Griefia	value	P1876 Status is	Test Failed	Koquileu	
					P 1070 Status is	On or Fault Active		
				Disable Conditions:		TCM: P0815, P0816, P0826, P1761, P1825, P1877, P1915, U0100		
						ECM: None		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions			Tim Requ		Mil Illum.
Transmission Control Module (TCM)	C124F	The lateral accleration sensor signal failed at a low voltge	hardware configuration	0	transient delay time	r >=	30	Sec	>=	75	Sec	Special No MIL
			Lateral accleration sensor raw signal	op <= -3.849999905 g's					out of	120	Sec	
			hardware configuration	CeLATR_e_V = oltageDirectPr op								
			Lateral accleration magnitude									
					Lateral acceleration lov voltage diagnostic enable calibratior	=	1					
					Battery Voltage	) <=	31.999023	Volts				
					Battery Voltage Battery voltage is within the	4	9	Volts				
					allowable limits fo	>=	0.1	Sec				
					Ignition Voltage		31.999023 9	Volts Volts				
					Service Fast Learn (SFL) Mode	2	9 FALSE					
					VBS Failsafe		FALSE	Boolean				
					Ignition voltage and SFI conditions met fo		0.1	Sec				
				Dis Conditi	able MIL not Illuminated fo ons: DTC's							
Transmission Control Module (TCM)	C1250	The lateral accleration sensor signal failed at a high voltge	hardware configuration	CeLATR_e_V = oltageDirectPr op	transient delay time	r >=	30	Sec	>=	75	Sec	Special No MIL
			Lateral accleration sensor raw signal	>= 3.849999905 g's					out of	120	Sec	
			hardware configuration	CeLATR_e_V = oltageDirectPr								
			Ŭ	ор								
			Lateral accleration magnitude	<= 3.849999905 g's	Lateral acceleration high							$\left  \right $
					voltage diagnostic enable	=	1					
					calibratior Battery Voltage		31.999023	Volts				
						1 >-	J1.7770ZJ	VUILS	1			

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	1	Secondary Malfunction		Enable Conditions			Time Require	d	Mil Illum.
						Battery Voltage	>=	9	Volts				
						Battery voltage is within the	>=	0.1	Sec				
						allowable limits for Ignition Voltage	<=	31.999023	Volts				
						Ignition Voltage	>=	9 9	Volts				
						Service Fast Learn (SFL) Mode							
						VBS Failsafe	=	FALSE	Boolean				
						Ignition voltage and SFL	>=	0.1	Sec				
						conditions met for	-	0.1	000				
					Disable	MIL not Illuminated for	TCM: U0073						
					Conditions:	DTC's:							
							ECM: None						
Transmission Control Module (TCM)	C1251	The lateral accleration signal is stuck at a high magnitude in range	absolute value (lateral accleration)	>= 0.529999971 g's		absolute value (lateral accleration) for stablity	>=	0.53	g's	>=	75	Sec	Special No MIL
		at a high magnitude in range		-		absolute value (lateral							NO WIL
			absolute value (lateral accleration)	<= 3.849999905 g's		accleration) for stablity	<=	3.8499999	g's				
						stability time	>=	30	Sec				
						Diagnostic shifting override	=	FALSE	Boolean				
						command		TALOL	Doolean				
						Attained Gear State	=	1st through					
						Allaineu Gear State	=	8th					
						Attained Gear Slip	<=	100	RPM				
								Clutch to					
						Transmission Type	=	Clutch					
								Transmissi					
						High Side Drivers enabled	=	on TRUE	Boolean				
						Vehicle Speed	>=	15	kph				
						Lateral acceleration stuck in							
						range diagnostic enable	=	1					
						calibration							
						Battery Voltage	<=	31.999023	Volts				
						Battery Voltage Battery voltage is within the	>=	9	Volts				
						allowable limits for	>=	0.1	Sec				
						Ignition Voltage	<=	31.999023	Volts				
						Ignition Voltage	>=	9	Volts				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value		Secondary Malfunction		Enable Conditions			Time Require	d	Mil Illum.
						Service Fast Learn (SFL) Mode VBS Failsafe	=	FALSE	Boolean				
						Ignition voltage and SFL conditions met for		0.1	Sec				
				с	Disable Conditions:	MIL not Illuminated for DTC's:		, P07C0, P07					
							ECM: None						
Transmission Control Module (TCM)	C1252	The longitudinal accleration sensor signal failed at a low voltge	hardware configuration	CeLATR_e_V = oltageDirectPr op		transient delay timer	>=	30	Sec	>=	75	Sec	Special No MIL
			longitudinal accleration sensor raw signal hardware configuration longitudinal accleration sensor raw	<= -3.849999905 g's CeLATR_e_V = oltageDirectPr op						out of	120	Sec	
			signal	>= -3.849999905 g's		longitudinal acceleration low voltage diagnostic enable calibration	=	1					-
						Battery Voltage Battery Voltage Battery voltage is within the	<= >=	31.999023 9	Volts Volts				
						allowable limits for Ignition Voltage Ignition Voltage	>= <=	0.1 31.999023 9	Sec Volts Volts				
						Service Fast Learn (SFL) Mode VBS Failsafe	=	FALSE	Boolean				
						Ignition voltage and SFL conditions met for		0.1	Sec				
				с	Disable Conditions:	MIL not Illuminated for DTC's:	TCM: U0073 ECM: None						

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value		Secondary Malfunction		Enable Conditions			Tim Requi		Mil Illum.
Transmission Control Module (TCM)	C1253	The longitudinal accleration sensor signal failed at a high voltge	hardware configuration	CeLATR_e_V = oltageDirectPr op		transient delay timer	>=	30	Sec	>=	75	Sec	Special No MIL
			longitudinal accleration sensor raw signal	>= 3.849999905 g's						out of	120	Sec	
			hardware configuration	CeLATR_e_V = oltageDirectPr op									
			longitudinal accleration sensor raw signal	<= 3.849999905 g's									
						longitudinal acceleration high voltage diagnostic enable calibration	=	1					
						Battery Voltage Battery Voltage	<= >=	31.999023 9	Volts Volts				
						Battery voltage is within the allowable limits for	>=	0.1	Sec				
						Ignition Voltage Ignition Voltage Service Fact Learn (SEL) Made	<= >=	31.999023 9	Volts Volts				
						Service Fast Learn (SFL) Mode VBS Failsafe Ignition voltage and SFL	=	FALSE	Boolean				
						conditions met for	>=	0.1	Sec				
				Co	Disable onditions:	MIL not Illuminated for DTC's:	TCM: U0073 ECM: None						
Transmission Control Module (TCM)	C1254	The longitudinal accleration signal is stuck at a high magnitude in range	absolute value (longitudinal accleration)	>= 0.529999971 g's		absolute value (longitudinal accleration) for stablity	>=	0.53	g's	>=	75	Sec	Special No MIL
			absolute value (longitudinal accleration)	<= 3.849999905 g's		absolute value (longitudinal accleration) for stability	<=	3.84999999	g's	out of	120	Sec	
						stability time Diagnostic shifting override command	=	30 FALSE	Sec Boolean				
						Attained Gear State	=	1st through 8th					
						Attained Gear Slip	<=	100	RPM				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		eshold alue	Secondary Malfunction		Enable Conditions			Tiı Requ	me uired	Mil Illum.
						Transmission Type	=	Clutch to Clutch Transmissi					
						High Side Drivers enabled transmssion output speed		on TRUE	Boolean meter/second				
						acceleration Vehicle Speed	>=	0.53 15	/second kph				
						longitudinal acceleration stuck in range diagnostic enable calibration		1	·				
						Battery Voltage Battery Voltage	<= >=	31.999023 9	Volts Volts				
						Battery voltage is within the allowable limits for	~-	0.1	Sec				
						Ignition Voltage Ignition Voltage	<= >=	31.999023 9	Volts Volts				
						Service Fast Learn (SFL) Mode VBS Failsafe Ignition voltage and SFL	=	FALSE	Boolean				
						conditions met for		0.1	Sec				
					Disable Conditions:			BF, P07C0, P07					
							ECM: None						
Tap Up Tap Down Switch (TUTD)	P1761	Tap Up and Down switch signal circuit (rolling count)	Rolling count value received from BCM and expected TCM calculated value not	= TRUE	Boolean					>=	3	Fail Counter (100 msec continuous)	Special No MIL
										>	10	Fail Timer (Sec)	
						Tap up/down message health (message receive occur)	=	TRUE	Boolean				
						Tap up/downswitch signal circuit (rolling count) diagnostic monitor enable calibration	=	1	Boolean				
						Ignition Voltage	<=	31.999023	Volts				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions			Time Required	Mil Illum.
					Ignition Voltage Service Fast Learn (SFL) Mode VBS Failsafe	>=	9 FALSE	Volts Boolean			
					Ignition voltage and SFL conditions met for	>=	0.1	Sec			
					Service mode \$04 active and end of trip pocessing active	=	FALSE	Boolean			
				Disable Conditions:	MIL not Illuminated for DTC's:						
Transmission Cooling Fan	P184F	Transmission Cooling Fan Performance	If drop in TCM trans oil temp after 300 second monitoring period	Refer to Table <= 27 in °C supporting documents					>= 2	Fail Counts 2 (300 sec sample perio	Trips
			delta transmission fluid temperature fail = transmission fluid temperature start of test - current value transmission fluid temperature								
			transmission fluid temperature start of test is latched to the current value of transmission fluid temperature when transmission cooling fan run time is not zero (0.0)								
					Outisde Air Signal Valid	=	TRUE	Boolean			
					Fan Status Valid	=	TRUE	Boolean			
					Battery Voltage Battery Voltage	<= >=	31.99902 9	Volts Volts			
					Battery voltage is within the allowable limits for	>=	0.1	Sec			
					Range Shift State	¥	RangeShift Completed	Enumeration			
					Range Shift State Previous	=	RangeShift Completed	Enumeration			
					Absolute TCC Slip	>=	80	RPM			
					Attained Gear	>=	First - Sixth	Enumeration			
					Transmission Input Speed	<=	3000	RPM			

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable Conditions			Time	Mil
System	Code	Description	Criteria	Value	Malfunction		Conditions		Required	Illum.
					Outside Air	>=	-8192	°C		
					Outside Air	<=	58	°C		
					Outside Air Mask Calibration	=	FALSE	Boolean		
					Transmission Temp	<=	255	°C		
					Transmission Temp	>=	110	°C		
					Powertrain Fan Status	=	FanlsOn	Enumeration		
					Fan Command Percent	>=	18.5	%		
				Disable Conditions:			BF, P07C0, P2			

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	d	Secondary Malfunction		Enable Conditions			Tim Requi		Mil Illum.
Transmission Control Module (TCM)	C1252	The longitudinal accleration sensor signal failed at a low voltge	hardware configuration longitudinal accleration sensor raw signal	CeLATR_e_V = oltageDirectPr op <= -3.849999905 g's CeLATR_e_V		transient delay timer	>=	30	Sec	>= out of	75 120	Sec Sec	Special No MIL
			hardware configuration longitudinal accleration sensor raw signal										
						longitudinal acceleration low voltage diagnostic enable calibration	=	1					
						Battery Voltage Battery Voltage Battery voltage is within the allowable limits for Ignition Voltage Ignition Voltage		31.999023 9 0.1 31.999023 9	Volts Volts Sec Volts Volts				
						Service Fast Learn (SFL) Mode VBS Failsafe	=	FALSE	Boolean				
						Ignition voltage and SFL conditions met for	>=	0.1	Sec				
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: U0073 ECM: None						
Transmission Control Module (TCM)	C1253	The longitudinal accleration sensor signal failed at a high voltge	hardware configuration	0		transient delay timer	>=	30	Sec	>=	75	Sec	Special No MIL
			longitudinal accleration sensor raw signal hardware configuration longitudinal accleration sensor raw signal	<pre>&gt;= 3.849999905 gs CeLATR_e_V = oltageDirectPr</pre>						out of	120	Sec	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions			Time Require	t	Mil Illum.
					longitudinal acceleration high voltage diagnostic enable	=	1					
					calibration Battery Voltage	<=	31.999023	Volts				
					Battery Voltage Battery voltage is within the		9	Volts				
					allowable limits for Ignition Voltage		0.1 31.999023	Sec Volts				
					Ignition Voltage		9	Volts				
					Service Fast Learn (SFL) Mode VBS Failsafe	=	FALSE	Boolean				
					Ignition voltage and SFL conditions met for	>=	0.1	Sec				
				Disabl	e MIL not Illuminated for	TCM: U0073						
				Conditions		ECM: None						
Transmission Control Module (TCM)	C1254	The longitudinal accleration signal is stuck at a high magnitude in range	absolute value (longitudinal accleration)	>= 0.529999971 g's	absolute value (longitudinal accleration) for stablity	>=	0.53	g's	>=	75	Sec	Specia No MIL
			absolute value (longitudinal accleration)	<= 3.849999905 g's	absolute value (longitudinal accleration) for stablity	<=	3.8499999	g's	out of	120	Sec	
					stability time	>=	30	Sec				-
					Diagnostic shifting override command	=	FALSE	Boolean				
					Attained Gear State	=	1st through 8th					
					Attained Gear Slip	<=	100 Clutch to	RPM				
					Transmission Type	=	Clutch Transmissi on					
					High Side Drivers enabled	=	TRUE	Boolean				
					transmssion output speed acceleration	>=	0.53	meter/second /second				
					Vehicle Speed longitudinal acceleration stuck		15	kph				
					in range diagnostic enable calibration		1					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions				me uired	Mil Illum.
					Battery Voltage Battery Voltage		31.999023 9	Volts Volts				
					Battery voltage is within the allowable limits for		0.1	Sec				
					Ignition Voltage Ignition Voltage	<= >=	31.999023 9	Volts Volts				
					Service Fast Learn (SFL) Mode VBS Failsafe	=	FALSE	Boolean				
					Ignition voltage and SFL conditions met for	>=	0.1	Sec				
				Disable Conditions:	DTC's:		F, P07C0, P077					
						ECM: None						
Tap Up Tap Down Switch (TUTD)	P1761	Tap Up and Down switch signal circuit (rolling count)	Rolling count value received from BCM and expected TCM calculated value not	= TRUE Boolean					>=	3	Fail Counter (100 msec continuous)	Special No MIL
									>	10	Fail Timer (Sec)	)
					Tap up/down message health (message receive occur)	=	TRUE	Boolean				
					Tap up/downswitch signal circuit (rolling count) diagnostic monitor enable calibration		1	Boolean				
					Ignition Voltage Ignition Voltage		31.999023 9	Volts Volts				
					Service Fast Learn (SFL) Mode VBS Failsafe	=	FALSE	Boolean				
					Ignition voltage and SFL conditions met for		0.1	Sec				
					Service mode \$04 active and end of trip pocessing active		FALSE	Boolean				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
				Disable Conditions:	MIL not Illuminated for DTC's:			
				conditions.	D103.			