15 OBDG06 TCM Summary Tables (MYA Common)

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
Acceleration Sensor	C124F	The lateral accleration signal is stuck at a low magnitude out of range because of a low circuit	Lateral accleration magnitude	>= -3.85 g's			>= 105 seconds	Special No MIL
			Lateral accleration magnitude is within the range above for	>= 120 Sec			out of 120 sample	
					Lateral accleration magnitude	>= -3.85 g's		
					Lateral accleration magnitude is within the range above for	>= 105 Sec		
					Sensor Type	= Voltage Directional Proportionate		
					Transmission Type	= Clutch to Clutch Transmission		
					Lateral acceleration sensor circuit low diagnostic enable	= TRUE Boolean		
					Battery Voltage	<= 31.99902 Volts		
					Battery Voltage	>= 9 Volts		
					Battery voltage is within the allowable limits for	>= 0.1 Sec		
					Ignition Voltage	<= 31.99902 Volts		
					Ignition Voltage	>= 9 Volts		
					Service Fast Learn (SFL) Mode	= FALSE Boolean		
					Ignition voltage and SFL conditions met for	>= 0.1 Sec		
			Disable Conditions:		MIL not Illuminated for DTC's:	TCM: If calibrated to illuminate the MIL (U0073, U0100) ECM: None		
Acceleration Sensor	C1250	The lateral accleration signal is stuck at a high magnitude out of range because of a high circuit	Lateral accleration magnitude	>= 3.85 g's			>= 105 seconds	Special No MIL
			Lateral accleration magnitude is within the range above for	>= 120 Sec			out of 120 sample	
					Lateral accleration magnitude	>= 3.85 g's		
					Lateral accleration magnitude is within the range above for	>= 105 Sec		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					Sensor Type = Voltage Directional Proportionate			
					Transmission Type = Clutch to Clutch Transmission			
					Lateral acceleration sensor circuit high diagnostic enable = TRUE Boolean			
					Battery Voltage <= 31.99902 Volts Battery Voltage >= 9 Volts Battery voltage is within the allowable limits for >= 0.1 Sec Ignition Voltage <= 31.99902 Volts Ignition Voltage >= 9 Volts Service Fast Learn (SFL) Mode = FALSE Boolean Ignition voltage and SFL conditions met for >= 0.1 Sec			
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: If calibrated to illuminate the MIL (U0073, U0100) ECM: None		
Acceleration Sensor	C1251	The lateral accleration signal is stuck at a high magnitude in range	Lateral accleration magnitude <= 3.85 g's Lateral accleration magnitude >= 0.53 g's Lateral accleration magnitude is within the range above for >= 120 Sec					Special No MIL
					Lateral accleration magnitude <= 3.85 g's Lateral accleration magnitude >= 0.53 g's Lateral accleration magnitude is within the range above for >= 90 Sec Diagnostic shifting override command = FALSE Boolean Attained Gear State = 1st through 6th Attained Gear Slip <= 100 RPM Transmission Type = Clutch to Clutch Transmission High Side Driver 1 On = TRUE Boolean Vehicle Speed >= 15 kph			

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					Lateral acceleration stuck in range diagnostic enable Battery Voltage Battery Voltage Battery voltage is within the allowable limits for Ignition Voltage Ignition Voltage Service Fast Learn (SFL) Mode Ignition voltage and SFL conditions met for	= TRUE Boolean <= 31.99902 Volts >= 9 Volts >= 0.1 Sec <= 31.99902 Volts >= 9 Volts = FALSE Boolean >= 0.1 Sec		
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: If calibrated to illuminate the MIL (P0716, P0717, P0721, P0722, P0723, P07BF, P07C0, P077B, P077C, P077D, P215C, U0073) ECM: None		
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:	TCM: P0601 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 Powerup	= TRUE Boolean			Runs Continously	One Trip
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0603 ECM: None		
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:	TCM: P0604 ECM: None		
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

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: P062F ECM: None		
Transmission Control Module (TCM)	P0634	Transmission Electro-Hydraulic Control Module Internal Temperature Too High	Fail Case 1 Substrate Temperature	>= 142.1016 ºC			>= 5 Fail Time (Sec)	One Trip
			Fail Case 2 Substrate Temperature Ignition Voltage	>= 50 ºC >= 18 Volts			>= 2 Fail Time (Sec)	
			Note: either fail case can set the DTC					
					Ignition Voltage Lo Ignition Voltage Hi Substrate Temp Lo Substrate Temp Hi Substrate Temp Between Temp Range for Time P0634 Status is	>= 8.59961 Volts <= 31.99902 Volts >= 0 ºC <= 170 ºC >= 0.25 Sec ≠ Test Failed This Key On or Fault Active		
				Disable Conditions:	MIL not Illuminated for DTC's:	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 out of 6 Sample Counts	One Trip
					P0658 Status is not High Side Driver 1 On	= Test Failed This Key On or Fault Active = True Boolean		
				Disable Conditions:	MIL not Illuminated for 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	> Refer to Table 19 in supporting documents ºC				Two Trips

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			If TCM substrate temp to power up temp Δ	> Refer to Table 20 in supporting documents °C				
			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.				>= 3000 Fail Counts (100ms loop) 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 Signal Valid Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for Brake torque active	= TRUE Boolean = TRUE Boolean >= 8.59961 Volts <= 31.99902 Volts >= 400 RPM <= 7500 RPM >= 5 Sec = FALSE	
					Below describes the brake torque entry criteria Engine Torque Throttle Transmission Input Speed Vehicle Speed Transmission Range Transmission Range PTO Set Brake Torque Active TRUE if above conditions are met for:	 >= 90 N*m >= 30.0003 Pct <= 200 RPM <= 8 Kph ≠ Park ≠ Neutral = Not Active >= 7 sec	
					Below describes the brake torque exit criteria Brake torque entry criteria Clutch hydraulic pressure Clutch used to exit brake torque active The above clutch pressure is greater than this value for one loop Set Brake Torque Active FALSE if above conditions are met for:	 = Not Met ≠ Clutch Hydraulic Air Purge Event = CeTFTD_e_C3_RatlEnbl >= 600 kpa >= 20 Sec	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					P0667 Status is	≠ Test Failed This Key On or Fault Active		
				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, P0305, P0306, P0307, P0308, P0401, P042E		
Transmission Control Module (TCM)	P0668	TCM internal temperature (substrate) thermistor failed at a low voltge	Type of Sensor Used	= CeTFTI_e_VoltageDirectProp				Two Trips
			If TCM Substrate Temperature Sensor = Direct Proportional and Temp	<= -249 °C				
			If TCM Substrate Temperature Sensor = Indirect Proportional and Temp	>= -249 °C				
			Either condition above will satisfy the fail conditions				>= 60 Fail Timer (Sec)	
					Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for	>= 8.59961 Volts <= 31.99902 Volts >= 400 RPM <= 7500 RPM >= 5 Sec		
					P0668 Status is	≠ Test Failed This Key On or Fault Active		
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None		
Transmission Control Module (TCM)	P0669	TCM internal temperature (substrate) thermistor failed at a high voltage	Type of Sensor Used	= CeTFTI_e_VoltageDirectProp				Two Trips
			If TCM Substrate Temperature Sensor = Direct Proportional and Temp	>= 249 °C				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			If TCM Substrate Temperature Sensor = Indirect Proportional and Temp	<= 249 ℃				
			Either condition above will satisfy the fail conditions				>= 60 Fail Timer (Sec)	
					Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for P0669 Status is For Hybrids, below conditions must also be met Estimated Motor Power Loss Estimated Motor Power Loss greater than limit for time Lost Communication with Hybrid Processor Control Module Estimated Motor Power Loss Fault	>= 8.59961 Volts <= 31.99902 Volts >= 400 RPM <= 7500 RPM >= 5 Sec ≠ Test Failed This Key On or Fault Active >= 0 kW >= 0 Sec = FALSE = FALSE		
			Disable Conditions:		MIL not Illuminated for 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	> Refer to Table 20 in supporting documents ℃ > Refer to Table 18 in supporting documents ℃				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.				>= 3000 Fail Counts (100ms loop) Out of 3750 Sample Counts (100ms loop)	
			Non-continuous (intermittent) fail conditions will delay resetting fail counter until				>= 700 Pass Counts (100ms loop)	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required			Mil Illum.
									Out of	875	Sample Counts (100ms loop)	
					Engine Torque Signal Valid	=	TRUE	Boolean				
					Accelerator Position Signal Valid	=	TRUE	Boolean				
					Ignition Voltage Lo	>=	8.59961	Volts				
					Ignition Voltage Hi	<=	31.99902	Volts				
					Engine Speed Lo	>=	400	RPM				
					Engine Speed Hi	<=	7500	RPM				
					Engine Speed is within the allowable limits for	>=	5	Sec				
					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					
					PTO	=	Not Active					
					Set Brake Torque Active TRUE if above conditions are met for:	>=	7	sec				
					Below describes the brake torque exit criteria							
					Brake torque entry criteria	=	Not Met					
					Clutch hydraulic pressure	≠	Clutch Hydraulic 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 conditions are met for:	>=	20	Sec				
					P06AC Status is	≠	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.
				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, P0305, P0306, P0307, P0308, P0401, P042E		
Transmission Control Module (TCM)	P06AD	TCM power-up thermistor circuit voltage low	Power Up Temp	<= -59 ℃			>= 60 Fail Time (Sec)	Two Trips
					Ignition Voltage Lo	>= 8.59961 Volts		
					Ignition Voltage Hi	<= 31.99902 Volts		
					Engine Speed Lo	>= 400 RPM		
					Engine Speed Hi	<= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		
					P06AD Status is	≠ Test Failed This Key On or Fault Active		
					For Hybrids, below conditions must also be met			
					Estimated Motor Power Loss	>= 0 kW		
					Estimated Motor Power Loss greater than limit for time	>= 0 Sec		
					Lost Communication with Hybrid Processor Control Module	= FALSE		
					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 ℃			>= 60 Fail Time (Sec)	Two Trips
					Ignition Voltage Lo	>= 8.59961 Volts		
					Ignition Voltage Hi	<= 31.99902 Volts		
					Engine Speed Lo	>= 400 RPM		
					Engine Speed Hi	<= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					P06AE Status is	≠ Test Failed This Key On or Fault Active		
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None		
Transmission Fluid Temperature Sensor (TFT)	P0711	Trans Fluid Temp Sensor Circuit Range/Performance	If transmission oil temp to substrate temp Δ	> Refer to Table 19 in supporting documents ℃				Two Trips
			If transmission oil temp to power up temp Δ	> Refer to Table 18 in supporting documents ℃				
			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.				>= 3000 Fail Counts (100ms loop) 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 Signal Valid Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for Brake torque active	= TRUE Boolean = TRUE Boolean >= 8.59961 Volts <= 31.99902 Volts >= 400 RPM <= 7500 RPM >= 5 Sec = FALSE		
					Below describes the brake torque entry criteria Engine Torque Throttle Transmission Input Speed Vehicle Speed Transmission Range Transmission Range PTO	>= 90 N*m >= 30.0003 Pct <= 200 RPM <= 8 Kph ≠ Park ≠ Neutral = Not Active		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					Set Brake Torque Active TRUE if above conditions are met for:	>= 7 sec		
					Below describes the brake torque exit criteria			
					Brake torque entry criteria	= Not Met		
					Clutch hydraulic pressure	≠ Clutch Hydraulic Air Purge Event		
					Clutch used to exit brake torque active	= CeTFTD_e_C3_RatIEnbl		
					The above clutch pressure is greater than this value for one loop	>= 600 kpa		
					Set Brake Torque Active FALSE if above conditions are met for:	>= 20 Sec		
					P0711 Status is	≠ Test Failed This Key On or Fault Active		
				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, 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_VoltageDirectProp				Two Trips
			If Transmission Fluid Temperature Sensor = Direct Proportional and Temp	<= -74 °C				
			If Transmission Fluid Temperature Sensor = Indirect Proportional and Temp	>= -74 °C				
			Either condition above will satisfy the fail conditions				>= 60 Fail Time (Sec)	
					Ignition Voltage Lo	>= 8.59961 Volts		
					Ignition Voltage Hi	<= 31.99902 Volts		
					Engine Speed Lo	>= 400 RPM		
					Engine Speed Hi	<= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					P0712 Status is	≠ Test Failed This Key On or Fault Active		
					For Hybrids, below conditions must also be met			
					Estimated Motor Power Loss	>= 0 kW		
					Estimated Motor Power Loss greater than limit for time	>= 0 Sec		
					Lost Communication with Hybrid Processor Control Module	= FALSE		
					Estimated Motor Power Loss Fault	= FALSE		
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0716, P0717, P0722, P0723 ECM: None		
Transmission Fluid Temperature Sensor (TFT)	P0713	Transmission fluid temperature thermistor failed at a high voltage	Type of Sensor Used	= CeTFTI_e_VoltageDirectProp				Two Trips
			If Transmission Fluid Temperature Sensor = Direct Proportional and Temp	>= 174 °C				
			If Transmission Fluid Temperature Sensor = Indirect Proportional and Temp	<= 174 °C				
			Either condition above will satisfy the fail conditions				>= 60 Fail Time (Sec)	
					Ignition Voltage Lo	>= 8.59961 Volts		
					Ignition Voltage Hi	<= 31.99902 Volts		
					Engine Speed Lo	>= 400 RPM		
					Engine Speed Hi	<= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		
					P0713 Status is	≠ Test Failed This Key On or Fault Active		
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0713, P0716, P0717, P0722, P0723 ECM: None		
Transmission Input Speed Sensor (TISS)	P0716	Input Speed Sensor Performance	Transmission Input Speed Sensor Drops	>= 900 RPM			>= 0.8 Fail Time (Sec)	One Trip

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required	Mil Illum.
					Engine Torque is	>=	0	N*m		
					Engine Torque is	<=	8191.88	N*m		
					Engine Speed	>=	400	RPM		
					Engine Speed	<=	7500	RPM		
					Engine Speed is within the allowable limits for	>=	5	Sec		
					Vehicle Speed is	>=	10	Kph		
					Throttle Position is	>=	0	Pct		

					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	Volts		
					Ignition Voltage	<=	31.99902	Volts		
					P0716 Status is not	=	Test Failed This Key On or Fault Active			
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0717, P0752, P0973, P0974 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	< 33 RPM					>= 4.5 Fail Time (Sec)	One Trip
			Fail Case 2 When P0722 DTC Status equal to Test Failed and Transmission Input Speed is	< 653.13 RPM	Controller uses a single power supply for the speed sensors	=	1	Boolean		
					Engine Torque is	>=	80	N*m		
					Engine Torque is	<=	8191.88	N*m		
					Vehicle Speed	>=	10	Kph		
					Engine Torque Signal Valid	=	TRUE	Boolean		
					Ignition Voltage	>=	8.59961	Volts		
					Ignition Voltage	<=	31.99902	Volts		
					Engine Speed	>=	400	RPM		
					Engine Speed	<=	7500	RPM		
					Engine Speed is within the allowable limits for	>=	5	Sec		
					P0717 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.
				Disable Conditions:	MIL not Illuminated for 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	<= 35 RPM			>= 4.5 Fail Time (Sec)	One Trip
					P0722 Status is not	= Test Failed This Key On or Fault Active		
					Transmission Input Speed Check	= TRUE Boolean		
					Engine Torque Check	= TRUE Boolean		
					Throttle Position	>= 8.0002 Pct		
					Transmission Fluid Temperature	>= -40 ºC		
					Disable this DTC if the PTO is active	= 1 Boolean		
					Engine Torque Signal Valid	= TRUE Boolean		
					Throttle Position Signal Valid	= TRUE Boolean		
					Ignition Voltage is	>= 8.59961 Volts		
					Ignition Voltage is	<= 31.99902 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			
					The Engine Torque Check is TRUE, if either of the two following conditions are TRUE			
					Engine Torque Condition 1			
					Range Shift Status	≠ Range shift completed ENUM		
					OR			
					Transmission Range is	= Park or Neutral		
					Engine Torque is	>= 8191.75 N*m		
					Engine Torque is	<= 8191.75 N*m		
					Engine Torque Condition 2			
					Engine Torque is	>= 50 N*m		
					Engine Torque is	<= 8191.75 N*m		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					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 Transmission Input Speed is	 >= 653.13 RPM <= 5350 RPM		
					TIS Check Condition 2 Engine Speed without the brake applied is Engine Speed with the brake applied is Engine Speed is	 >= 3200 RPM >= 3200 RPM <= 8191.88 RPM		
					Controller uses a single power supply for the speed sensors	= 1 Boolean		
					Powertrain Brake Pedal is Valid	= TRUE Boolean		
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0716, P0717, P0723 ECM: P0101, P0102, P0103, P0121, P0122, P0123		
Transmission Output Speed Sensor (TOSS)	P0723	Output Speed Sensor Circuit Intermittent	Transmission Output Speed Sensor Raw Speed Output Speed Delta Output Speed Drop AND Transmission Range is	>= 105 RPM <= 8192 RPM > 650 RPM = Driven range (R,D)			>= 0 Enable Time (Sec) >= 0 Enable Time (Sec) >= 1.5 Output Speed Drop Recovery Fail Time (Sec)	One Trip
					---------- Range_Disable OR ---------- Neutral_Range_Enable And Neutral_Speed_Enable are TRUE concurrently ----------	 = FALSE See Below = TRUE See Below = TRUE See Below		
					Transmission_Range_Enable Transmission_Input_Speed_Enable No Change in Transfer Case Range (High <-> Low) for	= TRUE See Below = TRUE See Below >= 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	=	1	Boolean		
					Ignition Voltage is	>=	8.59961	Volts		
					Ignition Voltage is	<=	31.99902	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_Speed_Enable 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	>=	0	Enable Time (Sec)		
					Input Speed Delta	<=	4095.88	RPM		
					Raw Input Speed	>=	500	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		

					Neutral_Range_Enable is TRUE when any of the next 3 conditions are TRUE					
					Transmission Range is	=	Neutral	ENUM		
					Transmission Range is	=	Reverse/Neutral Transitonal	ENUM		
					Transmission Range is	=	Neutral/Drive Transitional	ENUM		
					And when a drop occurs					
					Loop to Loop Drop of Transmission Output Speed is	>	650	RPM		

					Range_Disable is TRUE when any of the next three conditions are TRUE					
					Transmission Range is	=	Park	ENUM		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required	Mil Illum.
					Transmission Range is	=	Park/Reverse 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	>	1.5	Seconds		
					Transmission Output Speed	>	130	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	>	-10	RPM		

					Transmission_Range_Enable is TRUE when one of the next six conditions is TRUE					
					Transmission Range is	=	Neutral	ENUM		
					Transmission Range is	=	Reverse/Neutral Transitional	ENUM		
					Transmission Range is	=	Neutral/Drive Transitional	ENUM		
					Time since a driven range (R,D) has been selected	>=	Table Based Time Please Refer to Table 21 in supporting documents	Sec		
					Transmission Output Speed Sensor Raw Speed	>=	500	RPM		
					Output Speed when a fault was detected	>=	500	RPM		
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0973, P0974, P0976, P0977 ECM: P0101, P0102, P0103, P0121, P0122, P0123				
Torque Converter Clutch (TCC)	P0741	TCC System Stuck OFF	TCC Pressure	>= 750 Kpa					>= 2 Enable Time (Sec)	Two Trips

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			Either Condition (A) or (B) Must be Met					
			(A) TCC Slip Error @ TCC On Mode	>= Refer to Table 1 in Supporting Documents RPM			>= 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	>= 8.59961 Volts		
					Ignition Voltage Hi	<= 31.99902 Volts		
					Engine Speed	>= 400 RPM		
					Engine Speed	<= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		
					Engine Torque Lo	>= 50 N*m		
					Engine Torque Hi	<= 8191.88 N*m		
					Throttle Position Lo	>= 8.0002 Pct		
					Throttle Position Hi	<= 99.9985 Pct		
					2nd Gear Ratio Lo	>= 2.19482 Ratio		
					2nd Gear Ratio High	<= 2.52515 Ratio		
					3rd Gear Ratio Lo	>= 1.42285 Ratio		
					3rd Gear Ratio High	<= 1.63708 Ratio		
					4th Gear Ratio Lo	>= 1.06946 Ratio		
					4th Gear Ratio High	<= 1.23047 Ratio		
					5th Gear Ratio Lo	>= 0.79053 Ratio		
					5th Gear Ratio Hi	<= 0.90955 Ratio		
					6th Gear Ratio Lo	>= 0.62305 Ratio		
					6th Gear Ratio High	<= 0.71692 Ratio		
					Transmission Fluid Temperature Lo	>= -6.6563 °C		
					Transmission Fluid Temperature Hi	<= 130 °C		
					PTO Not Active	= TRUE Boolean		
					Engine Torque Signal Valid	= TRUE Boolean		
					Throttle Position Signal Valid	= TRUE Boolean		
					Dynamic Mode	= FALSE Boolean		
					P0741 Status is	≠ 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.
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0716, P0717, P0722, P0723, P0742, P2763, P2764 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		
Torque Converter Clutch (TCC)	P0742	TCC System Stuck ON	TCC Slip Speed TCC Slip Speed If Above Conditions Have been Met, and Fail Timer Expired, Increment Fail Counter	>= -50 RPM <= 13 RPM			>= 1.5 Fail Time (Sec) >= 6 Fail Counter	One Trip
					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	<= 6000 RPM		
					Engine Speed Lo	>= 500 RPM		
					Vehicle Speed HI	<= 511 KPH		
					Vehicle Speed Lo	>= 1 KPH		
					Engine Torque Hi	<= 8191.88 Nm		
					Engine Torque Lo	>= 80 Nm		
					Current Range	≠ Neutral Range		
					Current Range	≠ Reverse Range		
					Transmission Sump Temperature	<= 130 °C		
					Transmission Sump Temperature	>= 18 °C		
					Throttle Position Hyst High AND	>= 5.0003 Pct		
					Max Vehicle Speed to Meet Throttle Enable	<= 8 KPH		
					Once Hyst High has been met, the enable will remain while Throttle Position	>= 2.0004 Pct		
					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 true	= 1 Boolean		
					Disable if in MUMD and value true	= 1 Boolean		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					Disable if in TUTD and value true	= 1 Boolean		
					4 Wheel Drive Low Active	= FALSE Boolean		
					Disable if Air Purge active and value false	= 0 Boolean		
					RVT Diagnostic Active	= FALSE Boolean		
					Ignition Voltage	>= 8.59961 V		
					Ignition Voltage	<= 31.99902 V		
					Vehicle Speed	<= 511 KPH		
					Engine Speed	>= 400 RPM		
					Engine Speed	<= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		
					Engine Torque Signal Valid	= TRUE Boolean		
					Throttle Position Signal Valid	= TRUE Boolean		
					P0742 Status is	≠ Test Failed This Key On or Fault Active		
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0716, P0717, P0722, P0723, P0741, P2763, P2764 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	P0751	Shift Solenoid Valve A Stuck Off	Commaned Gear Slip	>= 400 RPM				Two Trips
			Commanded Gear Ratio	= 1st Lock rpm				
			Gear Ratio	<= 1.20959			>= 0.2 Fail Tmr	
			Gear Ratio	>= 1.09436			= 5 Fail Counts	
			If the above parameters are true				≠ 0 Neutral Timer (Sec)	
							>= 0.3 Fail Timer (Sec)	
							>= 8 Counts	
					Ignition Voltage Lo	>= 8.59961 Volts		
					Ignition Voltage Hi	<= 31.99902 Volts		
					Engine Speed Lo	>= 400 RPM		
					Engine Speed Hi	<= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		
					Transmission Fluid Temperature	>= -6.6563 °C		
					Range Shift State	= Range Shift Completed ENUM		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					TPS >= 0.5005 %			
					OR			
					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:	MIL not Illuminated for 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		
Mode 2 Multiplex Valve	P0752	Shift Solenoid Valve A Stuck On	Gear Box Slip	>= 400 RPM			>= Please Refer to Table 16 in Supporting Documents Neutral Timer (Sec)	One Trip
			Commanded Gear	= 3rd Gear				
			Commanded Gear has Achieved 1st Locked OR 1st Free-Wheel OR 2nd with Mode 2 Sol. Commanded On	= TRUE Boolean				
			If the above parameters are true					
			Command 4th Gear once Output Shaft Speed	<= 400 RPM				
			If Gear Ratio	>= 3.82568				
			And Gear Ratio	<= 4.22839			>= 1.5 Fail Timer (Sec)	
							>= 5 Counts	
					Ignition Voltage Lo	>= 8.59961 Volts		
					Ignition Voltage Hi	<= 31.99902 Volts		
					Engine Speed Lo	>= 400 RPM		
					Engine Speed Hi	<= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		
					High-Side Driver is Enabled	= TRUE Boolean		
					Throttle Position Signal Valid from ECM	= TRUE Boolean		
					Output Speed	>= 67 RPM		
					OR			

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					TPS >= 0.5005 %			
					Range Shift State = Range Shift Completed ENUM			
					Transmission Fluid Temperature >= -6.6563 ºC			
					Input Speed Sensor fault = FALSE Boolean			
					Output Speed Sensor fault = FALSE Boolean			
					Default Gear Option is not present = TRUE			
				Disable Conditions:	MIL not Illuminated for 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		
Mode 2 Multiplex Valve	P0756	Shift Solenoid Valve B Stuck Off	Fail Case 1 Commanded Gear = 1st Locked Gear Box Slip >= 400 RPM Intrusive Shift to 2nd Commanded Gear Previous = 1st Locked Gear Gear Ratio <= 2.48218 Gear Ratio >= 2.24585 If the above parameters are true				>= Please Refer to Table 5 in Supporting Documents Neutral Timer (Sec) >= 1 sec >= 3 counts	One Trip
					Ignition Voltage Lo >= 8.59961 Volts			
					Ignition Voltage Hi <= 31.99902 Volts			
					Engine Speed Lo >= 400 RPM			
					Engine Speed Hi <= 7500 RPM			
					Engine Speed is within the allowable limits for >= 5 Sec			
					Output Speed >= 67 RPM OR TPS >= 0.5005 %			
					Range Shift State = Range Shift Completed ENUM			
					Transmission Fluid Temperature >= -6.6563 ºC			
					High-Side Driver is Enabled = TRUE Boolean			
					Throttle Position Signal Valid from ECM = TRUE Boolean			
					Input Speed Sensor fault = FALSE Boolean			
					Output Speed Sensor fault = FALSE Boolean			

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					Default Gear Option is not present	= TRUE		
				Disable Conditions:	MIL not Illuminated for 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)	P0776	Pressure Control (PC) Solenoid B Stuck Off [C35R]	Fail Case 1 Case: Steady State 3rd Gear Commanded Gear Gearbox Slip Command 4th Gear once Output Shaft Speed If Gear Ratio And Gear Ratio It the above condiations are true, Increment 3rd gear fail counter and C35R Fail counter	 = 3rd Gear >= 400 RPM <= 400 RPM >= 1.09436 <= 1.20959			>= Please Refer to Table 16 in Supporting Documents Neutral Timer (Sec) >= 3 Fail Timer (Sec) >= 3 3rd Gear Fail Counts or >= 14 3-5R Clutch Fail Counts	One Trip
			Fail Case 2 Case: Steady State 5th Gear Commanded Gear Gearbox Slip Intrusive Test: Command 6th Gear If attained Gear=6th gear Time It the above condiations are true, Increment 5th gear fail counter and C35R Fail counter	 = 5th Gear >= 400 Rpm >= Please refer to Table 3 in supporting documents Shift Time (Sec)			>= Please Refer to Table 5 in Supporting Documents Neutral Timer (Sec) >= 3 5th Gear Fail Counts or >= 14 3-5R Clutch Fail Counts	
					PRNDL State defaulted inhibit RVT IMS fault pending indication	= FALSE Boolean = FALSE Boolean = FALSE Boolean		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					TPS validity flag = TRUE Boolean Hydraulic System Pressurized = TRUE Boolean Minimum output speed for RVT A OR B (A) Output speed enable >= 67 RPM (B) Accelerator Pedal enable >= 0.5005 Pct Common Enable Criteria Ignition Voltage Lo >= 8.59961 Volts Ignition Voltage Hi <= 31.99902 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 Default Gear Option is not present = TRUE		
				Disable Conditions:	MIL not Illuminated for 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)	P0777	Pressure Control (PC) Solinoid B Stuck On [C35R] (Steady State)	Fail Case 1 Case: Steady State 1st Attained Gear slip >= 400 RPM If the Above is True for Time >= Table Based Time Please Refer to Table 4 in supporting documents Enable Time (Sec) Intrusive test: (CBR1 clutch exhausted) Gear Ratio <= 1.60864 Gear Ratio >= 1.45544 If the above parameters are true				>= 1.1 Fail Timer (Sec) >= 2 Fail Count in 1st Gear or >= 3 Total Fail Counts	One Trip

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			Fail Case 2 Case: Steady State 2nd gear					
			Max Delta Output Speed Hysteresis	>= Table Based value Please Refer to 3D Table 1 in supporting documents rpm/sec				
			Min Delta Output Speed Hysteresis	>= Table Based value Please Refer to 3D Table 2 in supporting documents rpm/sec				
			If the Above is True for Time	>= Table Based Time Please Refer to Table 17 in supporting documents Sec				
			Intrusive test: (CB26 clutch exhausted)					
			Gear Ratio	<= 1.60864				
			Gear Ratio	>= 1.45544				
			If the above parameters are true				>= 1.1 Fail Timer (Sec)	
							>= 3 Fail Count in 2nd Gear or	
							>= 3 Total Fail Counts	
			Fail Case 3 Case: Steady State 4th gear					
			Max Delta Output Speed Hysteresis	>= Table Based value Please Refer to 3D Table 1 in supporting documents rpm/sec				
			Min Delta Output Speed Hysteresis	>= Table Based value Please Refer to 3D Table 2 in supporting documents rpm/sec				
			If the Above is True for Time	>= Table Based Time Please Refer to Table 17 in supporting documents Sec				
			Intrusive test: (C1234 clutch exhausted)					
			Gear Ratio	<= 0.89465				
			Gear Ratio	>= 0.80945				
			If the above parameters are true				>= 1.1 Fail Timer (Sec)	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
							>= 3 Fail Count in 4th Gear or >= 3 Total Fail Counts	
			Fail Case 4 Case: Steady State 6th gear					
			Max Delta Output Speed Hysteresis	>= Table Based value Please Refer to 3D Table 1 in supporting documents rpm/sec				
			Min Delta Output Speed Hysteresis	>= Table Based value Please Refer to 3D Table 2 in supporting documents rpm/sec				
			If the Above is True for Time	>= Table Based Time Please Refer to Table 17 in supporting documents Sec				
			Intrusive test: (CB26 clutch exhausted)					
			Gear Ratio	<= 0.89465			>= 1.1 Fail Timer (Sec)	
			Gear Ratio	>= 0.80945			>= 3 counts	
			If the above parameters are true				>= 1.1 Fail Timer (Sec)	
							>= 3 Fail Count in 6th Gear or >= 3 Total Fail Counts	
					PRNDL State defaulted	= FALSE Boolean		
					inhibit RVT	= FALSE Boolean		
					IMS fault pending indication	= FALSE Boolean		
					output speed	>= 0 RPM		
					TPS validity flag	= TRUE Boolean		
					HSD Enabled	= TRUE Boolean		
					Hydraulic_System_Pressurized	= TRUE Boolean		
					A OR B			
					(A) Output speed enable	>= 67 Nm		
					(B) Accelerator Pedal enable	>= 0.5005 Nm		
					Ignition Voltage Lo	>= 8.59961 Volts		
					Ignition Voltage Hi	<= 31.99902 Volts		
					Engine Speed Lo	>= 400 RPM		
					Engine Speed Hi	<= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		
					if Attained Gear=1st FW Accelerator Pedal enable	>= 5.0003 Pct		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					if Attained Gear=1st FW Engine Torque Enable	>= 5 Nm		
					if Attained Gear=1st FW Engine Torque Enable	<= 8191.88 Nm		
					Transmission Fluid Temperature	>= -6.6563 °C		
					Input Speed Sensor fault	= FALSE Boolean		
					Output Speed Sensor fault	= FALSE Boolean		
				Disable Conditions:	MIL not Illuminated for 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)	P0777	Pressure Control (PC) Solenoid B StuckOn [C35R] (Dymanic)	Primary Offgoing Clutch is exhausted (See Table 12 in Supporting Documents for Exhaust Delay Timers)	= TRUE Boolean				One Trip
			Primary Oncoming Clutch Pressure Command Status	= Maximum pressurized Clutch				
			Primary Offgoing Clutch Pressure Command Status	= exhaust command				
			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)	>= 0.2998 Fail Time (Sec)				
			fail timer 1 (3-2 shifting with Closed Throttle)	>= 0.5 Fail Time (Sec)				
			fail timer 1 (3-4 shifting with Throttle)	>= 0.2998 Fail Time (Sec)				
			fail timer 1 (3-4shifting with Closed Throttle)	>= 0.5 Fail Time (Sec)				
			fail timer 1 (3-5 shifting with Throttle)	>= 0.2998 Fail Time (Sec)				
			fail timer 1 (3-5 shifting with Closed Throttle)	>= 0.5 Fail Time (Sec)				
			fail timer 1 (5-3 shifting with Throttle)	>= 0.2998 Fail Time (Sec)				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			fail timer 1 (5-3 shifting with Closed Throttle)	>= 0.5 Fail Time (Sec)				
			fail timer 1 (5-4 shifting with Throttle)	>= 0.2998 Fail Time (Sec)				
			fail timer 1 (5-4 shifting with Closed Throttle)	>= 0.5 Fail Time (Sec)				
			fail timer 1 (5-6 shifting with Throttle)	>= 0.2998 Fail Time (Sec)				
			fail timer 1 (5-6 shifting with Closed Throttle)	>= 0.5 Fail Time (Sec)				
							Total Fail Time = (Fail 1 + Fail 2) See Enable Timers for	
			If Attained Gear Slip is Less than Above Cal Increment Fail Timers				>= 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					
			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	>= -6.6563 °C		
					Input Speed Sensor fault	= FALSE Boolean		
					Output Speed Sensor fault	= FALSE Boolean		
					Command / Attained Gear	≠ 1st Boolean		
					High Side Driver ON	= TRUE Boolean		
					output speed limit for TUT	>= 100 RPM		
					input speed limit for TUT	>= 150 RPM		
					PRNDL state defaulted	= FALSE Boolean		
					IMS Fault Pending	= FALSE Boolean		
					Service Fast Learn Mode	= FALSE Boolean		
					HSD Enabled	= TRUE Boolean		
					Default Gear Option is not present	= TRUE		

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: 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 Gear slip	>= 400 RPM			>= Please See Table 5 For Neutral Time Cal Neutral Timer (Sec)	One Trip
			Intrusive test: commanded 5th gear If attained Gear ≠5th for time	>= Please refer to Table 3 in Supporting Documents Shift Time (Sec)				
			if the above conditions have been met Increment 4th Gear Fail Counter				>= 3 4th Gear Fail Count	
			and C456 Fail Counters				OR >= 14 C456 Fail Counts	
			Fail Case 2 Case: Steady State 5th Gear Gear slip	>= 400 RPM			>= Please See Table 5 For Neutral Time Cal Neutral Timer (Sec)	
			Intrusive test: commanded 6th gear If attained Gear ≠ 6th for time	>= Please Refer to Table 3 in Supporting Documents Shift Time (Sec)				
			if the above conditions have been met Increment 5th Gear Fail Counter				>= 3 5th Gear Fail Count	
			and C456 Fail Counters				OR >= 14 C456 Fail Counts	
			Fail Case 3 Case: Steady State 6th Gear Gear slip	>= 400 RPM			>= Please See Table 5 For Neutral Time Cal Neutral Timer (Sec)	
			Intrusive test: commanded 5th gear					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			If attained Gear ≠ 5th for time	>= Please refer to Table 3 in Supporting Documents Shift Time (Sec)				
			if the above conditions have been met Increment 6th Gear Fail Counter and C456 Fail Counter				>= 3 6th Gear Fail Count OR	
			and C456 Fail Counter				>= 14 C456 Fail Counts	
					PRNDL State defaulted	= FALSE Boolean		
					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 A OR B	>= 67 RPM		
					(A) Output speed enable	>= 67 RPM		
					(B) Accelerator Pedal enable	>= 0.5005 Pct		
					Common Enable Criteria			
					Ignition Voltage Lo	>= 8.59961 Volts		
					Ignition Voltage Hi	<= 31.99902 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		
					OutputSpeed Sensor fault	= FALSE Boolean		
					Default Gear Option is not present	= TRUE		
				Disable Conditions:	MIL not Illuminated for 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)	P0797	Pressure Control (PC) Solenoid C Stuck On [C456] (Steady State)	Fail Case 1 Case: Steady State 1st Attained Gear slip	>= 400 RPM				One Trip

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			If the Above is True for Time	>= Table Based Time Please Refer to Table 4 in supporting documents Enable Time (Sec)				
			Intrusive test: (CBR1 clutch exhausted)					
			Gear Ratio	<= 1.20959				
			Gear Ratio	>= 1.09436				
			If the above parameters are true				>= 1.1 Fail Timer (Sec) >= 2 Fail Count in 1st Gear or >= 3 Total Fail Counts	
			Fail Case 2 Case Steady State 2nd					
			Max Delta Output Speed Hysteresis	>= Table Based value Please Refer to 3D Table 1 in supporting documents rpm/sec				
			Min Delta Output Speed Hysteresis	>= Table Based value Please Refer to 3D Table 2 in supporting documents rpm/sec				
			If the Above is True for Time	>= Table Based Time Please Refer to Table 17 in supporting documents Sec				
			Intrusive test: (CB26 clutch exhausted)					
			Gear Ratio	<= 1.20959				
			Gear Ratio	>= 1.09436				
			If the above parameters are true				>= 1.1 Fail Timer (Sec) >= 3 Fail Count in 2nd Gear or >= 3 Total fail counts	
			Fail Case 3 Case Steady State 3rd					
			Max Delta Output Speed Hysteresis	>= Table Based value Please Refer to 3D Table 1 in supporting documents rpm/sec				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			Min Delta Output Speed Hysteresis	>= Table Based value Please Refer to 3D Table 2 in supporting documents rpm/sec				
			If the Above is True for Time	>= Table Based Time Please Refer to Table 17 in supporting documents Sec				
			Intrusive test: (C35R clutch exhausted)					
			Gear Ratio	<= 1.20959				
			Gear Ratio	>= 1.09436				
			If the above parameters are true				>= 1.1 Fail Timer (Sec)	
							>= 3 Fail Count in 3rd Gear	
							OR	
							>= 3 Total Fail Counts	
					PRNDL State defaulted	= FALSE Boolean		
					inhibit RVT	= FALSE Boolean		
					IMS fault pending indication	= FALSE Boolean		
					output speed	>= 0 RPM		
					TPS validity flag	= TRUE Boolean		
					HSD Enabled	= TRUE Boolean		
					Hydraulic_System_Pressurized	= TRUE Boolean		
					A OR B			
					(A) Output speed enable	>= 67 Nm		
					(B) Accelerator Pedal enable	>= 0.5005 Nm		
					Ignition Voltage Lo	>= 8.59961 Volts		
					Ignition Voltage Hi	<= 31.99902 Volts		
					Engine Speed Lo	>= 400 RPM		
					Engine Speed Hi	<= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		
					if Attained Gear=1st FW Accelerator Pedal enable	>= 5.0003 Pct		
					if Attained Gear=1st FW Engine Torque Enable	>= 5 Nm		
					if Attained Gear=1st FW Engine Torque Enable	<= 8191.88 Nm		
					Transmission Fluid Temperature	>= -6.6563 ºC		
					Input Speed Sensor fault	= FALSE Boolean		
					Output Speed Sensor fault	= FALSE Boolean		
					Default Gear Option is not present	= TRUE		

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: 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)	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 Pressure Command Status Primary Offgoing Clutch Pressure Command Status Range Shift Status 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 (4-1 shifting without throttle) fail timer 1 (4-2 shifting with throttle) fail timer 1 (4-2 shifting without throttle) fail timer 1 (4-3 shifting with throttle) fail timer 1 (4-3 shifting without 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 (6-2 shifting without throttle)	= TRUE Boolean = Maximum pressurized = Clutch exhaust command ≠ Initial Clutch Control <= 40 RPM >= 0.2998 Fail Time (Sec) >= 0.5 Fail Time (Sec) >= 0.2998 Fail Time (Sec) >= 0.5 Fail Time (Sec) >= 0.2998 Fail Time (Sec) >= 0.5 Fail Time (Sec) >= 0.2998 Fail Time (Sec) >= 0.5 Fail Time (Sec) >= 0.2998 Fail Time (Sec) >= 0.5 Fail Time (Sec)				One Trip

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			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 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	>= -6.6563 °C		
					Input Speed Sensor fault	= FALSE Boolean		
					Output Speed Sensor fault	= FALSE Boolean		
					Command / Attained Gear	≠ 1st Boolean		
					High Side Driver ON	= TRUE Boolean		
					output speed limit for TUT	>= 100 RPM		
					input speed limit for TUT	>= 150 RPM		
					PRNDL state defaulted	= FALSE 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, 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		
Tap Up Tap Down Switch (TUTD)	P0815	Upshift Switch Circuit	Fail Case 1 Tap Up Switch Stuck in the Up Position in Range 1 Enabled	= 1 Boolean				Special No MIL
			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				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			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	= 1 Boolean				
			Tap Up Switch Stuck in the Up Position in Park Enabled	= 1 Boolean				
			Tap Up Switch Stuck in the Up Position in Reverse Enabled	= 1 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				
			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	= 1 Boolean				
			Tap Up Switch Stuck in the Up Position in Park Enabled	= 1 Boolean				
			Tap Up Switch Stuck in the Up Position in Reverse Enabled	= 1 Boolean				
			Tap Up Switch ON NOTE: Both Failcase1 and Failcase 2 Must Be Met	= TRUE Boolean			>= 600 Fail Time (Sec)	
					Time Since Last Range Change	>= 1 Enable Time (Sec)		
					Ignition Voltage Lo	>= 8.59961 Volts		
					Ignition Voltage Hi	<= 31.99902 Volts		
					Engine Speed Lo	>= 400 RPM		
					Engine Speed Hi	<= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					P0815 Status is	≠ Test Failed This Key On or Fault Active		
					MIL not Illuminated for DTC's:	TCM: P0816, P0826, P182E, P1876, P1877, P1915, P1761		
				Disable Conditions:		ECM: None		
Tap Up Tap Down Switch (TUTD)	P0816	Downshift Switch Circuit	Fail Case 1					Special No MIL
			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 Range Neutral Enabled	= 1 Boolean				
			Tap Down Switch Stuck in the Down Position in Range Park Enabled	= 1 Boolean				
			Tap Down Switch Stuck in the Down Position in Range Reverse Enabled	= 1 Boolean				
			Tap Down Switch ON	= TRUE Boolean			>= 1 sec	
			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				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			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	= 1 Boolean				
			Tap Down Switch Stuck in the Down Position in Park Enabled	= 1 Boolean				
			Tap Down Switch Stuck in the Down Position in Reverse Enabled	= 1 Boolean				
			Tap Down Switch ON NOTE: Both Failcase1 and Failcase 2 Must Be Met	= TRUE Boolean			>= 600 sec	
					Time Since Last Range Change	>= 1 Enable Time (Sec)		
					Ignition Voltage Lo	>= 8.59961 Volts		
					Ignition Voltage Hi	<= 31.99902 Volts		
					Engine Speed Lo	>= 400 RPM		
					Engine Speed Hi	<= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		
					P0816 Status is	≠ Test Failed This Key On or Fault Active		
			Disable Conditions:		MIL not Illuminated for DTC's:	TCM: P0815, P0826, P182E, P1876, P1877, P1915, P1761 ECM: None		
Tap Up Tap Down Switch (TUTD)	P0826	Up and Down Shift Switch Circuit	TUTD Circuit Reads Invalid Voltage	= TRUE Boolean			>= 60 Fail Time (Sec)	Special No MIL
					Ignition Voltage Lo	>= 8.59961 Volts		
					Ignition Voltage Hi	<= 31.99902 Volts		
					Engine Speed Lo	>= 400 RPM		
					Engine Speed Hi	<= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					P0826 Status is	≠ Test Failed This Key On or Fault Active		
					Disable Conditions: MIL not Illuminated for 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) out of 5 Sample Time (Sec)	Two Trips
					Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable limits for	>= 8.59961 Volts <= 31.99902 Volts >= 400 RPM <= 7500 RPM >= 5 Sec		
					Disable Conditions: MIL not Illuminated for 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) out of 1.875 Sample Time (Sec)	One Trip
					Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable limits for	>= 8.59961 Volts <= 31.99902 Volts >= 400 RPM <= 7500 RPM >= 5 Sec		
					Disable Conditions: MIL not Illuminated for 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			>= 4.4 Fail Time (Sec) out of 5 Sample Time (Sec)	Two Trips
					Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable limits for	>= 8.59961 Volts <= 31.99902 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.
				Disable Conditions:	MIL not Illuminated for 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) out of 0.375 Sample Time (Sec)	One Trip
					Ignition Voltage >= 8.59961 Volts Ignition Voltage <= 31.99902 Volts Engine Speed >= 400 RPM Engine Speed <= 7500 RPM Engine Speed is within the allowable limits for >= 5 Sec P0966 Status is not = Test Failed This Key On or Fault Active			
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None		
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) out of 0.375 Sample Time (Sec)	One Trip
					Ignition Voltage >= 8.59961 Volts Ignition Voltage <= 31.99902 Volts Engine Speed >= 400 RPM Engine Speed <= 7500 RPM Engine Speed is within the allowable limits for >= 5 Sec P0967 Status is not = Test Failed This Key On or Fault Active			
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None		
Variable Bleed Solenoid (VBS)	P0970	Pressure Control (PC) Solenoid C Control Circuit Low Voltage (C456/CBR1 VBS)	The HWIO reports a low voltage (ground short) error flag	= TRUE Boolean			>= 0.3 Fail Time (Sec) out of 0.375 Sample Time (Sec)	One Trip

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					P0970 Status is not	= Test Failed This Key On or Fault Active		
					Ignition Voltage	>= 8.59961 Volts		
					Ignition Voltage	<= 31.99902 Volts		
					Engine Speed	>= 400 RPM		
					Engine Speed	<= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None		
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 of 0.375 Sample Time (Sec)	One Trip
					P0971 Status is not	= Test Failed This Key On or Fault Active		
					Ignition Voltage	>= 8.59961 Volts		
					Ignition Voltage	<= 31.99902 Volts		
					Engine Speed	>= 400 RPM		
					Engine Speed	<= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None		
Shift Solinoid	P0973	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) out of 1.5 Sample Time (Sec)	One Trip
					P0973 Status is not	= Test Failed This Key On or Fault Active		
					Ignition Voltage	>= 8.59961 Volts		
					Ignition Voltage	<= 31.99902 Volts		
					Engine Speed	>= 400 RPM		
					Engine Speed	<= 7500 RPM		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					Engine Speed is within the allowable limits for	>= 5 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) out of 1.5 Sample Time (Sec)	Two Trips
					P0974 Status is not	= Test Failed This Key On or Fault Active		
					Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable limits for	>= 8.59961 Volts <= 31.99902 Volts >= 400 RPM <= 7500 RPM >= 5 Sec		
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None		
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			>= 1.2 Sec out of 1.5 Sec	One Trip
					P0977 Status is not	= Test Failed This Key On or Fault Active		
					Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable limits for	>= 8.59961 Volts <= 31.99902 Volts >= 400 RPM <= 7500 RPM >= 5 Sec		
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
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 Fail Counter > 10 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 Boolean >= 400 RPM <= 7500 RPM >= 5 Sec	
			Disable Conditions:		MIL not Illuminated for DTC's:	TCM: None ECM: None	
Tap Up Tap Down Switch (TUTD)	P1765	Upshift Switch Circuit #2	Fail Case 1 Tap Up Switch Stuck in the Up Position in Range 1 Enabled Tap Up Switch Stuck in the Up Position in Range 2 Enabled Tap Up Switch Stuck in the Up Position in Range 3 Enabled Tap Up Switch Stuck in the Up Position in Range 4 Enabled Tap Up Switch Stuck in the Up Position in Range 5 Enabled Tap Up Switch Stuck in the Up Position in Range 6 Enabled Tap Up Switch Stuck in the 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 Enabled Tap Up Switch ON	= 0 Boolean = 0 Boolean = 0 Boolean = 0 Boolean = 0 Boolean = 0 Boolean = 1 Boolean = 1 Boolean = 0 Boolean = TRUE Boolean			>= 1 Fail Time (Sec)	Special No MIL
			Fail Case 2 Tap Up Switch Stuck in the Up Position in Range 1 Enabled Tap Up Switch Stuck in the Up Position in Range 2 Enabled Tap Up Switch Stuck in the Up Position in Range 3 Enabled Tap Up Switch Stuck in the Up Position in Range 4 Enabled Tap Up Switch Stuck in the Up Position in Range 5 Enabled Tap Up Switch Stuck in the Up Position in Range 6 Enabled Tap Up Switch Stuck in the 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 Enabled Tap Up Switch ON	= 1 Boolean = 1 Boolean = 1 Boolean = 1 Boolean = 1 Boolean = 1 Boolean = 0 Boolean = 0 Boolean = 0 Boolean = TRUE Boolean				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			NOTE: Both Failcase1 and Failcase 2 Must Be Met				>= 600 Fail Time (Sec)	
					Time Since Last Range Change	>= 1 Enable Time (Sec)		
					Ignition Voltage Lo	>= 8.59961 Volts		
					Ignition Voltage Hi	<= 31.99902 Volts		
					Engine Speed Lo	>= 400 RPM		
					Engine Speed Hi	<= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		
					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	= 0 Boolean				Special No MIL
			Tap Down Switch Stuck in the Down Position in Range 2 Enabled	= 0 Boolean				
			Tap Down Switch Stuck in the Down Position in Range 3 Enabled	= 0 Boolean				
			Tap Down Switch Stuck in the Down Position in Range 4 Enabled	= 0 Boolean				
			Tap Down Switch Stuck in the Down Position in Range 5 Enabled	= 0 Boolean				
			Tap Down Switch Stuck in the Down Position in Range 6 Enabled	= 0 Boolean				
			Tap Down Switch Stuck in the Down Position in Range Neutral Enabled	= 1 Boolean				
			Tap Down Switch Stuck in the Down Position in Range Park Enabled	= 1 Boolean				
			Tap Down Switch Stuck in the Down Position in Range Reverse Enabled	= 0 Boolean				
			Tap Down Switch ON	= TRUE Boolean			>= 1 sec	
			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				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			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			>= 600 sec	
					Time Since Last Range Change	>= 1 Sec		
					Ignition Voltage Lo	>= 8.59961 Volts		
					Ignition Voltage Hi	<= 18 Volts		
					Engine Speed Lo	>= 400 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		
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P1767, P1761, P182E, P1915 ECM: None		
Tap Up Tap Down Switch (TUTD)	P1767	Up and Down Shift Switch Circuit #2	TUTD Circuit Reads Invalid Voltage	= TRUE Boolean			>= 60 Fail Time (Sec)	Special No MIL
					Ignition Voltage Lo	>= 8.59961 Volts		
					Ignition Voltage Hi	<= 31.99902 Volts		
					Engine Speed Lo	>= 400 RPM		
					Engine Speed Hi	<= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		
					P1767 Status is	≠ 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.
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P1761 ECM: None		
Internal Mode Switch (IMS)	P182E	Internal Mode Switch - Invalid Range	Fail Case 1					One Trip
			Current range	= Transition 1 (bit state 1110) Range				
			Previous range	≠ CeTRGR_e_PRNDL_Drive 6 Range				
			Previous range	≠ CeTRGR_e_PRNDL_Drive 5 Range				
			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	>= 8.0002 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 2 Output Speed	<= 70 rpm				
			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 0111) Range				
			PRNDL state	= Drive 6 (bit state 0110) Range				
			PRNDL state	= Transition 1 (bit state 1110) Range				
			Above sequencing occurs in	<= 1 Sec				
			Neutral Idle Mode	= Inactive				
			If all conditions above are met Increment delay Timer					
			If the below two conditions are met Increment Fail Timer				>= 3 Fail Seconds	
			delay timer	>= 1 Sec				
			Input Speed	>= 400 Sec				
			If Fail Timer has Expired then Increment Fail Counter				>= 2 Fail Counts	
			Fail Case 3 Current range	= Transition 13 (bit state 0010) Range	Previous range	≠ CeTRGR_e_PRNDL_Drive5		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			Engine Torque	>= -8192 Nm	Previous range	≠ CeTRGR_e_PRNDL_Drive5		
			Engine Torque	<= 8191.75 Nm	IMS is 7 position configuration	= 0 Boolean		
			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" = "Transition 13"		>= 0.225 Seconds	
			If Fail Timer has Expired then Increment Fail Counter				>= 15 Fail Counts	
			Fail Case 4 Current range	= Transition 8 (bit state 0111) Range	Disable Fail Case 4 if last positive range was Drive 6 and current range is transition 8			
			Inhibit bit (see definition)	= FALSE	Set inhibit bit true if PRNDL = 1100 (rev) or 0100 (Rev-Neu transition 11) Set inhibit bit false if PRNDL = 1001 (park)			
			Steady State Engine Torque	>= 30 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				>= 15 Fail Counts	
			Fail Case 5 Throttle Position Available	= TRUE Boolean				
			The following PRNDL sequence events occur in this exact order:					
			PRNDL State	= Reverse (bit state 1100) Range				
			PRNDL State	= Transition 11 (bit state 0100) Range				
			PRNDL State	= Neutral (bit state 0101) Range				
			PRNDL State	= Transition 11 (bit state 0100) Range				
			Above sequencing occurs in Then delay timer increments	<= 1 Sec				
			Delay timer	>= 5 sec				
			Range Shift State	= Range Shift Complete				
			Absolute Attained Gear Slip	<= 50 rpm				
			Attained Gear	<= Sixth				
			Attained Gear	>= First				
			Throttle Position	>= 8.0002 pct				
			Output Speed	>= 200 rpm				
			If the above conditions are met Increment Fail Timer				>= 20 Seconds	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			Fail Case 6					
			Current range	= Illegal (bit state 0000 or 1000 or 0001)	A Open Circuit Definition (flag set false if the following conditions are met):			
			and		Current Range	≠ Transition 11 (bit state 0100)		
			A Open Circuit (See Definition)	= FALSE Boolean	or			
					Last positive state	≠ Neutral (bit state 0101)		
					or			
					Previous transition state	≠ Transition 8 (bit state 0111)		
					Fail case 5 delay timer	= 0 sec		
			If the above Condtions are met then, Increment Fail timer				>= 6.25 Seconds	
			Fail Case 7					
			Current PRNDL State	= PRNDL circuit ABCP = 1101 Range				
			and					
			Previous PRNDL state	= PRNDL circuit ABCP =1111 Range				
			Input Speed	>= 150 RPM				
			Reverse Trans Ratio	<= 2.97595 ratio				
			Reverse Trans Ratio	>= 3.42395 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	>= 8.59961 Volts		
					Ignition Voltage Hi	<= 31.99902 Volts		
					Engine Speed Lo	>= 400 RPM		
					Engine Speed Hi	<= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		
					Engine Torque Signal Valid	= TRUE Boolean		
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0716, P0717, P0722, P0723, P07C0, P07BF, P077C, P077D 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		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
Tap Up Tap Down Switch (TUTD)	P1876	Tap Up and Down Enable Switch Circuit	Current range	= Park or Reverse or Neutral Range State				Special No MIL
			TUTD Enable Switch is Active	= TRUE Boolean			>= 3 Fail Time (Sec)	
							>= 5 Fail Counts	
					Ignition Voltage Lo	>= 8.59961 Volts		
					Ignition Voltage Hi	<= 31.99902 Volts		
					Vehicle Speed Lo	<= 511 KPH		
					Engine Speed Lo	>= 400 RPM		
					Engine Speed Hi	<= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		
					P1876 Status is	≠ Test Failed This Key On or Fault Active		
			Disable Conditions:		MIL not Illuminated for DTC's:	TCM: P0815, P0816, P0826, P1761, P1825, P1877, P1915, U0100		
						ECM: None		
Internal Mode Switch (IMS)	P1915	Internal Mode Switch Does Not Indicate Park/Neutral (P/N) During Start	PRNDL State is	≠ Park or Neutral Enumeration				One Trip
			The following events must occur Sequentially					
			Initial Engine speed	<= 50 RPM			>= 0.25 Enable Time (Sec)	
			Then Engine Speed Between Following Cals					
			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	>= 6 V		
					Ignition Voltage Hi	<= 31.99902 V		
					Ignition Voltage Hyst High (enables above this value)	>= 5 V		
					Ignition Voltage Hyst Low (disabled below this value)	<= 2 V		
					Transmission Output Speed	<= 90 rpm		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					P1915 Status is	≠ Test Failed This Key On or Fault Active		
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0722, P0723 ECM: None		
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 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	= TRUE Boolean		
					ECM run/crank active status	= TRUE Boolean		
				Disable Conditions:	MIL not Illuminated for DTC's:	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 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	= TRUE Boolean		
					ECM run/crank active status	= FALSE 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 1 Case: Steady State 2nd Gear					One Trip
			Gear slip	>= 400 RPM			>= Please See Table 5 For Neutral Time Cal Neutral Timer (Sec)	
			Intrusive test: commanded 3rd gear					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			If attained Gear = 3rd for Time	>= Table Based Time Please see Table 2 in Supporting Documents Enable Time (Sec)				
			If Above Conditions have been met					
			Increment 2nd gear fail count				>= 3 2nd Gear Fail Count or	
			and CB26 Fail Count				>= 14 CB26 Fail Count	
			Fail Case 2 Case: Steady State 6th Gear					
			Gear slip	>= 400 RPM			>= Please See Table 5 For Neutral Time Cal Neutral Timer (Sec)	
			Intrusive test: commanded 5th gear					
			If attained Gear = 5th For Time	>= Table Based Time Please see Table 2 in Supporting Documents Enable Time (Sec)				
			If Above Conditions have been met, Increment 5th gear fail counter				>= 3 5th Gear Fail Count or	
			and CB26 Fail Count				>= 14 CB26 Fail Count	
					PRNDL State defaulted	= FALSE Boolean		
					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 A OR B	>= 0 RPM		
					(A) Output speed enable	>= 67 RPM		
					(B) Accelerator Pedal enable	>= 0.5005 Pct		
					Common Enable Criteria			
					Ignition Voltage Lo	>= 8.59961 Volts		
					Ignition Voltage Hi	<= 31.99902 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		
					Default Gear Option is not present	= TRUE		

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: 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)	= TRUE Boolean				One Trip
			Primary Oncoming Clutch Pressure Command Status	= Maximum pressurized Clutch				
			Primary Offgoing Clutch Pressure Command Status	= exhaust command				
			Range Shift Status	≠ Initial Clutch Control				
			Attained Gear Slip	<= 40 RPM				
			If above coditons are true, increment appropriate Fail 1 Timers Below:					
			fail timer 1 (2-1 shifting with throttle)	>= 0.2998 Fail Time (Sec)				
			fail timer 1 (2-1 shifting without throttle)	>= 0.5 Fail Time (Sec)				
			fail timer 1 (2-3 shifting with throttle)	>= 0.2998 Fail Time (Sec)				
			fail timer 1 (2-3 shifting without throttle)	>= 0.5 Fail Time (Sec)				
			fail timer 1 (2-4 shifting with throttle)	>= 0.2998 Fail Time (Sec)				
			fail timer 1 (2-4 shifting without throttle)	>= 0.5 Fail Time (Sec)				
			fail timer 1 (6-4 shifting with throttle)	>= 0.2998 Fail Time (Sec)				
			fail timer 1 (6-4 shifting without throttle)	>= 0.5 Fail Time (Sec)				
			fail timer 1 (6-5 shifting with throttle)	>= 0.2998 Fail Time (Sec)				
			fail timer 1 (6-5 shifting without throttle)	>= 0.5 Fail Time (Sec)				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			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 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	
			6th gear fail counter				OR >= 3 Fail Counter From 6th Gear	
			total fail counter				OR >= 5 Total Fail Counter	
					TUT Enable temperature	>= -6.6563 °C		
					Input Speed Sensor fault	= FALSE Boolean		
					Output Speed Sensor fault	= FALSE Boolean		
					Command / Attained Gear	≠ 1st Boolean		
					High Side Driver ON	= TRUE Boolean		
					output speed limit for TUT	>= 100 RPM		
					input speed limit for TUT	>= 150 RPM		
					PRNDL state defaulted	= FALSE 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, 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] (Steady State)	Fail Case 1 Case: Steady State 1st					One Trip
			Attained Gear slip	>= 400 RPM				
			If the Above is True for Time	>= Table Based Time Please Refer to Table 4 in supporting documents Enable Time (Sec)				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			Intrusive test: (CBR1 clutch exhausted) Gear Ratio Gear Ratio If the above parameters are true	<= 2.48218 >= 2.24585			>= 1.1 Fail Timer (Sec) >= 5 Fail Count in 1st Gear or >= 5 Total Fail Counts	
			Fail Case 2 Case: Steady State 3rd Gear Max Delta Output Speed Hysteresis Min Delta Output Speed Hysteresis If the Above is True for Time Intrusive test: (C35R clutch exhausted) Gear Ratio Gear Ratio If the above parameters are true	>= Table Based value Please Refer to 3D Table 1 in supporting documents rpm/sec >= Table Based value Please Refer to 3D Table 2 in supporting documents rpm/sec >= Table Based Time Please Refer to Table 17 in supporting documents Sec <= 2.48218 >= 2.24585			>= 1.1 Fail Timer (Sec) >= 3 Fail Count in 3rd Gear or >= 5 Total Fail Counts	
			Fail Case 3 Case: Steady State 4rd Gear Max Delta Output Speed Hysteresis Min Delta Output Speed Hysteresis	>= Table Based value Please Refer to 3D Table 1 in supporting documents rpm/sec >= Table Based value Please Refer to 3D Table 2 in supporting documents rpm/sec				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			If the Above is True for Time	>= Table Based Time Please Refer to Table 17 in supporting documents Sec				
			Intrusive test: (C1234 clutch exhausted)					
			Gear Ratio	<= 0.70032				
			Gear Ratio	>= 0.63367				
			If the above parameters are true					
							>= 1.1 Fail Timer (Sec)	
							>= 3 Fail Count in 4th Gear or	
							>= 5 Total Fail Counts	
			Fail Case 4 Case: Steady State 5th Gear					
			Max Delta Output Speed Hysteresis	>= Table Based value Please Refer to 3D Table 1 in supporting documents rpm/sec				
			Min Delta Output Speed Hysteresis	>= Table Based value Please Refer to 3D Table 2 in supporting documents rpm/sec				
			If the Above is True for Time	>= Table Based Time Please Refer to Table 17 in supporting documents Sec				
			Intrusive test: (C35R clutch exhausted)					
			Gear Ratio	<= 0.70032				
			Gear Ratio	>= 0.63367				
			If the above parameters are true					
							>= 1.1 Fail Timer (Sec)	
							>= 3 Fail Count in 5th Gear or	
							>= 5 Total Fail Counts	
					PRNDL State defaulted	= FALSE Boolean		
					inhibit RVT	= FALSE Boolean		
					IMS fault pending indication	= FALSE Boolean		
					output speed	>= 0 RPM		
					TPS validity flag	= TRUE Boolean		
					HSD Enabled	= TRUE Boolean		
					Hydraulic_System_Pressurized	= TRUE Boolean		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required			Mil Illum.
					A OR B							
					(A) Output speed enable	>=	67	Nm				
					(B) Accelerator Pedal enable	>=	0.5005	Nm				
					Ignition Voltage Lo	>=	8.59961	Volts				
					Ignition Voltage Hi	<=	31.99902	Volts				
					Engine Speed Lo	>=	400	RPM				
					Engine Speed Hi	<=	7500	RPM				
					Engine Speed is within the allowable limits for	>=	5	Sec				
					if Attained Gear=1st FW Accelerator Pedal enable	>=	5.0003	Pct				
					if Attained Gear=1st FW Engine Torque Enable	>=	5	Nm				
					if Attained Gear=1st FW Engine Torque Enable	<=	8191.88	Nm				
					Transmission Fluid Temperature	>=	-6.6563	ºC				
					Input Speed Sensor fault	=	FALSE	Boolean				
					Output Speed Sensor fault	=	FALSE	Boolean				
					Default Gear Option is not present	=	TRUE					
				Disable Conditions:	MIL not Illuminated for 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)	P2720	Pressure Control (PC) Solenoid D Control Circuit Low (CB26 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)	
					P2770 Status is not	=	Test Failed This Key On or Fault Active					
					Ignition Voltage	>=	8.59961	Volts				
					Ignition Voltage	<=	31.99902	Volts				
					Engine Speed	>=	400	RPM				
					Engine Speed	<=	7500	RPM				
					Engine Speed is within the allowable limits for	>=	5	Sec				

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: None ECM: None		
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			>= 0.3 Fail Time (Sec) out of 0.375 Sample Time (Sec)	One Trip
					P2721 Status is not	= Test Failed This Key On or Fault Active		
					Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable limits for	>= 8.59961 Volts <= 31.99902 Volts >= 400 RPM <= 7500 RPM >= 5 Sec		
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None		
Variable Bleed Solenoid (VBS)	P2723	Pressure Control (PC) Solenoid E Stuck Off	Fail Case 1 Case: Steady State 1st Gear					One Trip
			Gear slip	>= 400 RPM			>= Please See Table 5 For Neutral Time Cal Neutral Timer (Sec)	
			Intrusive test: commanded 2nd gear					
			If attained Gear ≠ 2nd for Time	>= Please refer to Table 3 in Supporting Documents Shift Time (Sec)				
			If Above Conditions have been met, Increment 1st gear fail counter				>= 3 1st Gear Fail Count	
			and C1234 fail counter				>= 14 or C1234 Clutch Fail Count	
			Fail Case 2 Case: Steady State 2nd Gear					
			Gear slip	>= 400 RPM			>= Please See Table 5 For Neutral Time Cal Neutral Timer (Sec)	
			Intrusive test: commanded 3rd gear					
			If attained Gear ≠ 3rd for Time	>= Please refer to Table 3 in Supporting Documents Shift Time (Sec)				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			If Above Conditions have been met, Increment 2nd gear fail counter				>= 3 2nd Gear Fail Count	
			and C1234 fail counter				or >= 14 C1234 Clutch Fail Count	
			Fail Case 3 Case: Steady State 3rd Gear					
			Gear slip	>= 400 RPM			>= Please See Table 5 For Neutral Time Cal Neutral Timer (Sec)	
			Intrusive test: commanded 4th gear					
			If attained Gear ≠ 4th for time	>= Please refer to Table 3 in Supporting Documents Shift Time (Sec)				
			If Above Conditions have been met, Increment 3rd gear fail counter				>= 3 3rd Gear Fail Count	
			and C1234 fail counter				or >= 14 C1234 Clutch Fail Count	
			Fail Case 4 Case: Steady State 4th Gear					
			Gear slip	>= 400 RPM			>= Please See Table 5 For Neutral Time Cal Neutral Timer (Sec)	
			Intrusive test: commanded 5th gear					
			If attained Gear = 5th For Time	>= Please refer to Table 3 in Supporting Documents Shift Time (Sec)				
			If Above Conditions have been met, Increment 4th gear fail counter				>= 3 4th Gear Fail Count	
			and C1234 fail counter				or >= 14 C1234 Clutch Fail Count	
					PRNDL State defaulted	= FALSE Boolean		
					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 A OR B	>= 0 RPM		
					(A) Output speed enable	>= 67 RPM		
					(B) Accelerator Pedal enable	>= 0.5005 Pct		
					Common Enable Criteria			
					Ignition Voltage Lo	>= 8.59961 Volts		
					Ignition Voltage Hi	<= 31.99902 Volts		
					Engine Speed Lo	>= 400 RPM		
					Engine Speed Hi	<= 7500 RPM		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					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		
					Default Gear Option is not present	= TRUE		
				Disable Conditions:	MIL not Illuminated for 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)	P2724	Pressure Control (PC) Solenoid E Stuck On (Dynamic)	Primary Offgoing Clutch is exhausted (See Table 10 in Supporting Documents for Exhaust Delay Timers)	= TRUE Boolean				One Trip
			Primary Oncoming Clutch Pressure Command Status	= Maximum pressurized Clutch				
			Primary Offgoing Clutch Pressure Command Status	= exhaust command				
			Range Shift Status	≠ Initial Clutch Control				
			Attained Gear Slip	<= 40 RPM				
			If the above conditions are true increment appropriate Fail 1 Timers Below:					
			fail timer 1 (2-6 shifting with throttle)	>= 0.2998 sec				
			fail timer 1 (2-6 shifting without throttle)	>= 0.5 sec				
			fail timer 1 (3-5 shifting with throttle)	>= 0.2998 sec				
			fail timer 1 (3-5 shifting without throttle)	>= 0.5 sec				
			fail timer 1 (4-5 shifting with throttle)	>= 0.2998 sec				
			fail timer 1 (4-5 shifting without throttle)	>= 0.5 sec				
			fail timer 1 (4-6 shifting with throttle)	>= 0.2998 sec				
			fail timer 1 (4-6 shifting without throttle)	>= 0.5 sec				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			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 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	
			3rd gear fail counter				>= 3 Fail Counter From 3rd Gear	
			4th gear fail counter				>= 3 Fail Counter From 4th Gear	
			total fail counter				>= 5 Total Fail Counter	
					TUT Enable temperature	>= -6.6563 °C		
					Input Speed Sensor fault	= FALSE Boolean		
					Output Speed Sensor fault	= FALSE Boolean		
					Command / Attained Gear	≠ 1st Boolean		
					High Side Driver ON	= TRUE Boolean		
					output speed limit for TUT	>= 100 RPM		
					input speed limit for TUT	>= 150 RPM		
					PRNDL state defaulted	= FALSE 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, 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)	P2724	Pressure Control (PC) Solenoid E Stuck On (Steady State)	Fail Case 1 Case: 5th Gear					One Trip

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			Max Delta Output Speed Hysteresis	>= Table Based value Please Refer to 3D Table 1 in supporting documents rpm/sec				
			Min Delta Output Speed Hysteresis	>= Table Based value Please Refer to 3D Table 2 in supporting documents rpm/sec				
			If the Above is True for Time	>= Table Based Time Please Refer to Table 17 in supporting documents Sec				
			Intrusive test: (C35R clutch exhausted)					
			Gear Ratio	<= 1.20959				
			Gear Ratio	>= 1.09436				
			If the above parameters are true				>= 1.1 Fail Timer (Sec)	
							>= 3 Fail Count in 5th Gear OR	
							>= 3 Total Fail Counts	
			Fail Case 2 Case: 6th Gear					
			Max Delta Output Speed Hysteresis	>= Table Based value Please Refer to 3D Table 1 in supporting documents rpm/sec				
			Min Delta Output Speed Hysteresis	>= Table Based value Please Refer to 3D Table 2 in supporting documents rpm/sec				
			If the Above is True for Time	>= Table Based Time Please Refer to Table 17 in supporting documents Sec				
			Intrusive test: (CB26 clutch exhausted)					
			Gear Ratio	<= 1.20959				
			Gear Ratio	>= 1.09436				
			If the above parameters are true				>= 1.1 Fail Timer (Sec)	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required			Mil Illum.
									>=	3	Fail Count in 6th Gear OR	
									>=	3	Total Fail Counts	
						PRNDL State defaulted	=	FALSE Boolean				
						inhibit RVT	=	FALSE Boolean				
						IMS fault pending indication	=	FALSE Boolean				
						output speed	>=	0 RPM				
						TPS validity flag	=	TRUE Boolean				
						HSD Enabled	=	TRUE Boolean				
						Hydraulic_System_Pressurized	=	TRUE Boolean				
						A OR B						
						(A) Output speed enable	>=	67 Nm				
						(B) Accelerator Pedal enable	>=	0.5005 Nm				
						Ignition Voltage Lo	>=	8.59961 Volts				
						Ignition Voltage Hi	<=	31.99902 Volts				
						Engine Speed Lo	>=	400 RPM				
						Engine Speed Hi	<=	7500 RPM				
						Engine Speed is within the allowable limits for	>=	5 Sec				
						if Attained Gear=1st FW Accelerator Pedal enable	>=	5.0003 Pct				
						if Attained Gear=1st FW Engine Torque Enable	>=	5 Nm				
						if Attained Gear=1st FW Engine Torque Enable	<=	8191.88 Nm				
						Transmission Fluid Temperature	>=	-6.6563 °C				
						Input Speed Sensor fault	=	FALSE Boolean				
						Output Speed Sensor fault	=	FALSE Boolean				
						Default Gear Option is not present	=	TRUE				
					Disable Conditions:	MIL not Illuminated for 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)	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.
					P2729 Status is not	= Test Failed This Key On or Fault Active		
					Ignition Voltage	>= 8.59961 Volt		
					Ignition Voltage	<= 31.99902 Volt		
					Engine Speed	>= 400 RPM		
					Engine Speed	<= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None		
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 of 0.375 Sample Time (Sec)	One Trip
					P2730 Status is not	= Test Failed This Key On or Fault Active		
					Ignition Voltage	>= 8.59961 Volt		
					Ignition Voltage	<= 31.99902 Volt		
					Engine Speed	>= 400 RPM		
					Engine Speed	<= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None		
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) out of 5 Sample Time (Sec)	Two Trips
					P2763 Status is not	= Test Failed This Key On or Fault Active		
					Ignition Voltage	>= 8.59961 Volt		
					Ignition Voltage	<= 31.99902 Volt		
					Engine Speed	>= 400 RPM		
					Engine Speed	<= 7500 RPM		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					Engine Speed is within the allowable limits for	>= 5 Sec		
					High Side Driver Enabled	= TRUE Boolean		
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0658, P0659 ECM: None		
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			>= 4.4 Fail Time (Sec) out of 5 Sample Time (Sec)	One Trip
					P2764 Status is not	= Test Failed This Key On or Fault Active		
					Ignition Voltage	>= 8.59961 Volt		
					Ignition Voltage	<= 31.99902 Volt		
					Engine Speed	>= 400 RPM		
					Engine Speed	<= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		
					High Side Driver Enabled	= TRUE Boolean		
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0658, P0659 ECM: None		
Communication	U0073	Controller Area Network Bus Communication Error	CAN Hardware Circuitry Detects a Low Voltage Error	= TRUE Boolean			>= 62 Fail counts (≈ 10 seconds) Out of 70 Sample Counts (≈ 11 seconds)	One Trip
			Delay timer	>= 0.1125 sec				
					Stabilization delay	>= 3 sec		
					Ignition Voltage	>= 8.59961 Volt		
					Ignition Voltage	<= 31.99902 Volt		
					Power Mode	= Run		
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None		
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	>= 3 sec		
					Ignition Voltage	>= 8.59961 Volt		
					Ignition Voltage	<= 31.99902 Volt		
					Power Mode	= Run		

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: U0073 ECM: None		

15 OBDG06 TCM Summary Tables (MGG Unique)

Component / System	Fault Code	Monitor Strategy / Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
System Voltage	P0563	System Voltage High	Battery Voltage	> 18 [V]	Ignition Voltage The Input Speed signal is available from the Input Speed Sensor Input Speed P07C0 (Input/Turbine Speed Sensor "A" Circuit High) P07BF (Input/Turbine Speed Sensor "A" Circuit Low) P0717 (Input/Turbine Speed Sensor "A" Circuit No Signal) OR Ignition Voltage Engine speed Engine speed signal validity U0073 (CAN Bus-OFF) U0100 (Lost Communication with ECM/PCM "A")	> 9000 [mV] = TRUE > 400 [rpm] for [> 2 sec] = NOT DETECTED = NOT DETECTED = NOT DETECTED > 9000 [mV] > 400 [rpm] for [> 2 sec] = VALID = NOT DETECTED = NOT DETECTED	10 sec	1
Transmission Control Module (TCM)	P0606	Control Module Processor	Main Processor Failure This TCM is an ISO 26262 (System Functional Safety) compliant module. In order to confirm that the TCM control system functioning properly, the TCM is equipped with a secondary CPU which validates the basic operation / calculations of the primary CPU (and ultimately, the control system software). There are several Safety Integrity Functions which are capable of detecting microprocessor or TCM hardware related malfunctions, which would require the activation of safe state reactions. The TCM performs checks on the processor performance every 10 msec. If any of the following checks fail a single time, then this malfunction is confirmed. CPU Core Check malfunction confirmed ROM Check malfunction confirmed RAM Check malfunction confirmed Program Flow Check malfunction confirmed	= TRUE = TRUE = TRUE = TRUE	(none)	(none)	10 msec	1
Transmission Control Module (TCM)	P0606	Control Module Processor	Communication Failure with Sub Processor The Main and Sub Processor both check for correct communication with eachother every 10 msec. If either processor detects a communication error a single time, this malfunction is confirmed. Communication Error between Main and Sub Processors is detected	= TRUE	(none)	(none)	10 msec	1
Transmission Control Module (TCM)	P0606	Control Module Processor	Solenoid Cut Malfunction (Main OR Sub Processor Solenoid Cut Line) During a TCM power-down, both the Primary and Secondary CPU's perform a test on their ability to cut (override) the command current to the linear		TCM is powering down (Ignition Voltage transitions from High to Low)	= TRUE	100 msec	1

Component / System	Fault Code	Monitor Strategy / Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
			shift solenoids. The basic test performed by each CPU is as follows: • After commanding an all solenoid current cut, the feedback current from linear solenoids SL1 to SL5 (all drive clutch linear solenoids) is less than a calibrated threshold for a calibrated time period. (Note that this calibrated threshold is less than the solenoid standby current) If the above test does NOT pass, a malfunction is assumed and a flag is stored in the TCM non-volatile memory. Upon the next TCM power-up, the OBD system will report the malfunction and illuminate the MIL. Main Processor Solenoid Cut Request Feedback Current for any of the solenoids (SL1 - SL5) OR Sub Processor Solenoid Cut Request Feedback Current for any of the solenoids (SL1 - SL5)	 = ACTIVE > 20 [mA] = ACTIVE > 20 [mA]				
Transmission Range Sensor "A" Circuit	P0705	Transmission Range Switch Circuit	Transmission Range Sensor P,R,N, and D Circuits Vehicle Speed P077D (Output Speed Sensor Circuit Low) P077C (Output Speed Sensor Circuit High) P0722 (Output Speed Sensor No Pulse)	> (Battery Voltage - 2 [V]) >= 30 [kph] = NOT DETECTED = NOT DETECTED = NOT DETECTED	Ignition Voltage Battery Voltage Battery Voltage Engine Speed Engine Speed Signal Validity U0100 (Lost Communication with ECM/PCM "A") U0073 (CAN Bus-OFF) The TCM has completed the read operation of its Emergency Mode (*4)	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] > 400 [RPM] = VALID = NOT DETECTED = NOT DETECTED = NOT ACTIVE	30 sec	1
Transmission Range Sensor "A" Circuit	P0706	Transmission Range Switch Performance	2 or more Transmission Range Sensor P,R,N, or D Circuits	< 2 [V]	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously)	5 sec	1
Gear Ratio (6th Gear)	P0729	Gear 6 Incorrect Ratio	Difference between actual Gear Ratio and 6th Gear Ratio	> 20 [%]	Current Gear Output Speed Ignition Voltage Battery Voltage Battery Voltage Engine Speed Engine Speed Signal Validity U0100 (Lost Communication with ECM/PCM "A") U0073 (CAN Bus-OFF) Emergency Mode (*4) Neutral Avoidance Control Solenoid Cut Condition (*Note 3) Time since Solenoid Cut (*Note 3) control has been	= 6TH GEAR >= 500 [rpm] > 9000 [mV] for 10 [msec] > 10.2 [V] <= 32.0 [V] > 400 [RPM] = VALID = NOT DETECTED = NOT DETECTED = NOT ACTIVE = NOT ACTIVE = NOT ACTIVE > 8 [sec]	12 sec (cumulatively)	1

Component / System	Fault Code	Monitor Strategy / Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					INACTIVE	ALL Malfunctions = NOT DETECTED		
					P0974 (Shift Solenoid "A" Control Circuit High) P0973 (Shift Solenoid "A" Control Circuit Low) Status of all of the Gear Ratio malfunctions: (P0967, P0971, P2721, P2730, P2739, P0963, P2763, P0966, P0970, P2720, P2729, P2738, P0962, P2764, P0778, P0798, P2716, P2725, P2734, P0748, P2761) P07C0 (Input/Turbine Speed Sensor "A" Circuit High) P07BF (Input/Turbine Speed Sensor "A" Circuit Low) P0717 (Input/Turbine Speed Sensor "A" Circuit No Signal) P077D (Output Speed Sensor Circuit Low) P077C (Output Speed Sensor Circuit High) P0722 (Output Speed Sensor No Pulse) P0592 (System Voltage Low Supply 2) (*Note 1) P0563 (System Voltage High) P2535 (Ignition Switch Run/Start Position Circuit High)			
					Range Selector Position Switch	= D Range		
					P0705 (Transmission Range Switch Circuit)	= NOT DETECTED		
					P0706 (Transmission Range Switch Performance)	= NOT DETECTED		
					Garage Shift Control has been INACTIVE for this amount of time continuously	T_GarageFin (*1)		
					Shift Control has been INACTIVE for this amount of time continuously	T_ShiftFin (*1)		
					The Input Speed signal is available from the Input Speed Sensor	= TRUE		
					The Output Speed signal is available from the Output Speed Sensor	= TRUE		
					ATF Temperature	>= -20 [deg C]		
					Quick Stop Detection Flag (*Note 4)	= FALSE		
					Safe Gear Control has been INACTIVE for this amount of time continuously	tmr_inh_GE (*1)		
					The TCM is not commanding a neutral condition as a reaction to Safe Gear Control.	= TRUE		
						AND the following conditions are NOT satisfied		
					Difference between actual Gear Ratio and 7th Gear Ratio	< 4 [%] for 1 [sec] continuously		
Gear Ratio (6th Gear Stuck)	P0729	Gear 6 Incorrect Ratio	Difference between actual Gear Ratio and 7th Gear Ratio	< 4 %	Current Gear	= 6TH GEAR	5 sec	1
					Output Speed	>= 60 [rpm]		
					Input Torque	>= 50 [Nm] OR <= -50 [Nm] (occur at least 1 time during detection)		
					Ignition Voltage	> 9000 [mV] for 10 [msec]		
					Battery Voltage	> 10.2 [V]		
					Battery Voltage	<= 32.0 [V]		
					Engine Speed	> 400 [RPM]		
					Engine Speed Signal Validity	= VALID		
					U0100 (Lost Communication with ECM/PCM "A")	= NOT DETECTED		
					U0073 (CAN Bus-OFF)	= NOT DETECTED		
					Emergency Mode (*4)	= NOT ACTIVE		

Component / System	Fault Code	Monitor Strategy / Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Neutral Avoidance Control	= NOT ACTIVE		
					Solenoid Cut Condition (*Note 3)	= NOT ACTIVE		
					Time since Solenoid Cut (*Note 3) control has been INACTIVE	> 8 [sec]		
						ALL Malfunctions = NOT DETECTED		
					P0974 (Shift Solenoid "A" Control Circuit High) P0973 (Shift Solenoid "A" Control Circuit Low) Status of all of the Gear Ratio malfunctions: (P0967, P0971, P2721, P2730, P2739, P0963, P2763, P0966, P0970, P2720, P2729, P2738, P0962, P2764, P0778, P0798, P2716, P2725, P2734, P0748, P2761) P07C0 (Input/Turbine Speed Sensor "A" Circuit High) P07BF (Input/Turbine Speed Sensor "A" Circuit Low) P0717 (Input/Turbine Speed Sensor "A" Circuit No Signal) P077D (Output Speed Sensor Circuit Low) P077C (Output Speed Sensor Circuit High) P0722 (Output Speed Sensor No Pulse) P0592 (System Voltage Low Supply 2) (*Note 1) P0563 (System Voltage High) P2535 (Ignition Switch Run/Start Position Circuit High)			
					Range Selector Position Switch	= D Range		
					P0705 (Transmission Range Switch Circuit)	= NOT DETECTED		
					P0706 (Transmission Range Switch Performance)	= NOT DETECTED		
					Garage Shift Control has been INACTIVE for this amount of time continuously	T_GarageFin (*1)		
					Shift Control has been INACTIVE for this amount of time continuously	T_ShiftFin (*1)		
					The Input Speed signal is available from the Input Speed Sensor	= TRUE		
					The Output Speed signal is available from the Output Speed Sensor	= TRUE		
					ATF Temperature	>= -20 [deg C]		
					Quick Stop Detection Flag (*Note 4)	= FALSE		
					Safe Gear Control has been INACTIVE for this amount of time continuously	tmr_inh_GE (*1)		
					The TCM is not commanding a neutral condition as a reaction to Safe Gear Control.	= TRUE		
Gear Ratio (1st Gear Stuck)	P0731	Gear 1 Incorrect Ratio	Difference between actual Gear Ratio and 2nd Gear Ratio	< 4 [%]	Current Gear	= 1ST GEAR	2.25 sec	1
			OR		Output Speed	>= 60 [rpm]		
			Difference between actual Gear Ratio and 3rd Gear Ratio	< 4 [%]	Input Speed	<= 6000 [rpm]		
			OR		Engine Torque	{if ATF Temp >= 0 [degC]} >= 80 [Nm] {if ATF Temp < 0 [degC]} >= 150 [Nm]		
			Difference between actual Gear Ratio and 4th Gear Ratio	< 4 [%]	Ignition Voltage	> 9000 [mV] for 10 [msec]		
					Battery Voltage	> 10.2 [V]		
			OR		Battery Voltage	<= 32.0 [V]		
			Difference between actual Gear Ratio and 5th Gear Ratio	< 4 [%]	Engine Speed	> 400 [RPM]		
					Engine Speed Signal Validity	= VALID		

Component / System	Fault Code	Monitor Strategy / Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					U0100 (Lost Communication with ECM/PCM "A")	= NOT DETECTED		
					U0073 (CAN Bus-OFF)	= NOT DETECTED		
					The TCM has completed the read operation of its non-volatile memory	(all 8 criteria for 2 [sec] continuously)		
					Emergency Mode (*4)	= NOT ACTIVE		
					Neutral Avoidance Control	= NOT ACTIVE		
					Solenoid Cut Condition (*Note 3)	= NOT ACTIVE		
					Time since Solenoid Cut (*Note 3) control has been INACTIVE	> 8 [sec]		
						ALL Malfunctions = NOT DETECTED		
					P0974 (Shift Solenoid "A" Control Circuit High) P0973 (Shift Solenoid "A" Control Circuit Low) Status of all of the Gear Ratio malfunctions: (P0967, P0971, P2721, P2730, P2739, P0963, P2763, P0966, P0970, P2720, P2729, P2738, P0962, P2764, P0778, P0798, P2716, P2725, P2734, P0748, P2761) P07C0 (Input/Turbine Speed Sensor "A" Circuit High) P07BF (Input/Turbine Speed Sensor "A" Circuit Low) P0717 (Input/Turbine Speed Sensor "A" Circuit No Signal) P077D (Output Speed Sensor Circuit Low) P077C (Output Speed Sensor Circuit High) P0722 (Output Speed Sensor No Pulse) P0592 (System Voltage Low Supply 2) (*Note 1) P0563 (System Voltage High) P2535 (Ignition Switch Run/Start Position Circuit High)			
					Range Selector Position Switch	= D Range		
					P0705 (Transmission Range Switch Circuit)	= NOT DETECTED		
					P0706 (Transmission Range Switch Performance)	= NOT DETECTED		
					Garage Shift Control has been INACTIVE for this amount of time continuously	T_GarageFin (*1)		
					Shift Control has been INACTIVE for this amount of time continuously	T_ShiftFin (*1)		
					The Input Speed signal is available from the Input Speed Sensor	= TRUE		
					The Output Speed signal is available from the Output Speed Sensor	= TRUE		
					ATF Temperature	>= -20 [deg C]		
					Quick Stop Detection Flag (*Note 4)	= FALSE		
					Safe Gear Control has been INACTIVE for this amount of time continuously	tmr_inh_GE (*1)		
					The TCM is not commanding a neutral condition as a reaction to Safe Gear Control.	= TRUE		
Gear Ratio (2nd Gear)	P0732	Gear 2 Incorrect Ratio	Difference between actual Gear Ratio and 2nd Gear Ratio	> 20 [%]	Current Gear	= 2ND GEAR	12 sec (cumulatively)	1
					Output Speed	>= 500 [rpm]		
					Ignition Voltage	> 9000 [mV] for 10 [msec]		
					Battery Voltage	> 10.2 [V]		
					Battery Voltage	<= 32.0 [V]		
					Engine Speed	> 400 [RPM]		
					Engine Speed Signal Validity	= VALID		
					U0100 (Lost Communication with ECM/PCM "A")	= NOT DETECTED		

Component / System	Fault Code	Monitor Strategy / Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					U0073 (CAN Bus-OFF)	= NOT DETECTED		
					Emergency Mode (*4)	= NOT ACTIVE		
					Neutral Avoidance Control	= NOT ACTIVE		
					Solenoid Cut Condition (*Note 3)	= NOT ACTIVE		
					Time since Solenoid Cut (*Note 3) control has been INACTIVE	> 8 [sec]		
						ALL Malfunctions = NOT DETECTED		
					P0974 (Shift Solenoid "A" Control Circuit High) P0973 (Shift Solenoid "A" Control Circuit Low) Status of all of the Gear Ratio malfunctions: (P0967, P0971, P2721, P2730, P2739, P0963, P2763, P0966, P0970, P2720, P2729, P2738, P0962, P2764, P0778, P0798, P2716, P2725, P2734, P0748, P2761) P07C0 (Input/Turbine Speed Sensor "A" Circuit High) P07BF (Input/Turbine Speed Sensor "A" Circuit Low) P0717 (Input/Turbine Speed Sensor "A" Circuit No Signal) P077D (Output Speed Sensor Circuit Low) P077C (Output Speed Sensor Circuit High) P0722 (Output Speed Sensor No Pulse) P0592 (System Voltage Low Supply 2) (*Note 1) P0563 (System Voltage High) P2535 (Ignition Switch Run/Start Position Circuit High)				
					Range Selector Position Switch	= D Range		
					P0705 (Transmission Range Switch Circuit)	= NOT DETECTED		
					P0706 (Transmission Range Switch Performance)	= NOT DETECTED		
					Garage Shift Control has been INACTIVE for this amount of time continuously	T_GarageFin (*1)		
					Shift Control has been INACTIVE for this amount of time continuously	T_ShiftFin (*1)		
					The Input Speed signal is available from the Input Speed Sensor	= TRUE		
					The Output Speed signal is available from the Output Speed Sensor	= TRUE		
					ATF Temperature	>= -20 [deg C]		
					Quick Stop Detection Flag (*Note 4)	= FALSE		
					Safe Gear Control has been INACTIVE for this amount of time continuously	tmr_inh_GE (*1)		
					The TCM is not commanding a neutral condition as a reaction to Safe Gear Control.	= TRUE		
						AND the following conditions are NOT satisfied		
					Difference between actual Gear Ratio and 3rd Gear Ratio	< 4 [%] for 1 [sec] continuously		
					Difference between actual Gear Ratio and 4th Gear Ratio	< 4 [%] for 1 [sec] continuously		
					Difference between actual Gear Ratio and 7th Gear Ratio	< 4 [%] for 1 [sec] continuously		
					Difference between actual Gear Ratio and 8th Gear Ratio	< 4 [%] for 1 [sec] continuously		
Gear Ratio (2nd Gear Stuck)	P0732	Gear 2 Incorrect Ratio	Difference between actual Gear Ratio and 3rd Gear Ratio	< 4 %	Current Gear	= 2ND GEAR	5 sec	1

Component / System	Fault Code	Monitor Strategy / Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Output Speed	>= 60 [rpm]		
			OR					
			Difference between actual Gear Ratio and 4th Gear Ratio	< 4 %	Input Torque	>= 50 [Nm] OR <= -50 [Nm] (occur at least 1 time during detection)		
					Ignition Voltage	> 9000 [mV] for 10 [msec]		
			OR		Battery Voltage	> 10.2 [V]		
			Difference between actual Gear Ratio and 8th Gear Ratio	< 4 %	Battery Voltage	<= 32.0 [V]		
					Engine Speed	> 400 [RPM]		
					Engine Speed Signal Validity	= VALID		
					U0100 (Lost Communication with ECM/PCM "A")	= NOT DETECTED		
					U0073 (CAN Bus-OFF)	= NOT DETECTED		
					The TCM has completed the read operation of its Emergency Mode (*4)	= NOT ACTIVE		
					Neutral Avoidance Control	= NOT ACTIVE		
					Solenoid Cut Condition (*Note 3)	= NOT ACTIVE		
					Time since Solenoid Cut (*Note 3) control has been INACTIVE	> 8 [sec]		
					P0974 (Shift Solenoid "A" Control Circuit High) P0973 (Shift Solenoid "A" Control Circuit Low) Status of all of the Gear Ratio malfunctions: (P0967, P0971, P2721, P2730, P2739, P0963, P2763, P0966, P0970, P2720, P2729, P2738, P0962, P2764, P0778, P0798, P2716, P2725, P2734, P0748, P2761) P07C0 (Input/Turbine Speed Sensor "A" Circuit High) P07BF (Input/Turbine Speed Sensor "A" Circuit Low) P0717 (Input/Turbine Speed Sensor "A" Circuit No Signal) P077D (Output Speed Sensor Circuit Low) P077C (Output Speed Sensor Circuit High) P0722 (Output Speed Sensor No Pulse) P0592 (System Voltage Low Supply 2) (*Note 1) P0563 (System Voltage High) P2535 (Ignition Switch Run/Start Position Circuit High)	ALL Malfunctions = NOT DETECTED		
					Range Selector Position Switch	= D Range		
					P0705 (Transmission Range Switch Circuit)	= NOT DETECTED		
					P0706 (Transmission Range Switch Performance)	= NOT DETECTED		
					Garage Shift Control has been INACTIVE for this amount of time continuously	T_GarageFin (*1)		
					Shift Control has been INACTIVE for this amount of time continuously	T_ShiftFin (*1)		
					The Input Speed signal is available from the Input Speed Sensor	= TRUE		
					The Output Speed signal is available from the Output Speed Sensor	= TRUE		
					ATF Temperature	>= -20 [deg C]		
					Quick Stop Detection Flag (*Note 4)	= FALSE		
					Safe Gear Control has been INACTIVE for this amount of time continuously	tmr_inh_GE (*1)		
					The TCM is not commanding a neutral condition as a reaction to Safe Gear Control.	= TRUE		

Component / System	Fault Code	Monitor Strategy / Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Gear Ratio (3rd Gear)	P0733	Gear 3 Incorrect Ratio	Difference between actual Gear Ratio and 3rd Gear Ratio	> 20 [%]	Current Gear	= 3RD GEAR	12 sec (cumulatively)	1
					Output Speed	>= 500 [rpm]		
					Ignition Voltage	> 9000 [mV] for 10 [msec]		
					Battery Voltage	> 10.2 [V]		
					Battery Voltage	<= 32.0 [V]		
					Engine Speed	> 400 [RPM]		
					Engine Speed Signal Validity	= VALID		
					U0100 (Lost Communication with ECM/PCM "A")	= NOT DETECTED		
					U0073 (CAN Bus-OFF)	= NOT DETECTED		
					Emergency Mode (*4)	= NOT ACTIVE		
					Neutral Avoidance Control	= NOT ACTIVE		
					Solenoid Cut Condition (*Note 3)	= NOT ACTIVE		
					Time since Solenoid Cut (*Note 3) control has been INACTIVE	> 8 [sec]		
						ALL Malfunctions = NOT DETECTED		
					P0974 (Shift Solenoid "A" Control Circuit High) P0973 (Shift Solenoid "A" Control Circuit Low) Status of all of the Gear Ratio malfunctions: (P0967, P0971, P2721, P2730, P2739, P0963, P2763, P0966, P0970, P2720, P2729, P2738, P0962, P2764, P0778, P0798, P2716, P2725, P2734, P0748, P2761) P07C0 (Input/Turbine Speed Sensor "A" Circuit High) P07BF (Input/Turbine Speed Sensor "A" Circuit Low) P0717 (Input/Turbine Speed Sensor "A" Circuit No Signal) P077D (Output Speed Sensor Circuit Low) P077C (Output Speed Sensor Circuit High) P0722 (Output Speed Sensor No Pulse) P0592 (System Voltage Low Supply 2) (*Note 1) P0563 (System Voltage High) P2535 (Ignition Switch Run/Start Position Circuit High)			
					Range Selector Position Switch	= D Range		
					P0705 (Transmission Range Switch Circuit)	= NOT DETECTED		
					P0706 (Transmission Range Switch Performance)	= NOT DETECTED		
					Garage Shift Control has been INACTIVE for this amount of time continuously	T_GarageFin (*1)		
					Shift Control has been INACTIVE for this amount of time continuously	T_ShiftFin (*1)		
					The Input Speed signal is available from the Input Speed Sensor	= TRUE		
					The Output Speed signal is available from the Output Speed Sensor	= TRUE		
					ATF Temperature	>= -20 [deg C]		
					Quick Stop Detection Flag (*Note 4)	= FALSE		
					Safe Gear Control has been INACTIVE for this amount of time continuously	tmr_inh_GE (*1)		
					The TCM is not commanding a neutral condition as a reaction to Safe Gear Control.	= TRUE		
						AND the following conditions are NOT satisfied		
					Difference between actual Gear Ratio and 7th Gear Ratio	< 4 [%] for 1 [sec] continuously		

Component / System	Fault Code	Monitor Strategy / Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Gear Ratio (3rd Gear Stuck)	P0733	Gear 3 Incorrect Ratio	Difference between actual Gear Ratio and 7th Gear Ratio	< 4 [%]	Current Gear	= 3RD GEAR	5 sec	1
					Output Speed	>= 60 [rpm]		
					Input Torque	>= 50 [Nm] OR <= -50 [Nm] (occur at least 1 time during detection)		
					Ignition Voltage	> 9000 [mV] for 10 [msec]		
					Battery Voltage	> 10.2 [V]		
					Battery Voltage	<= 32.0 [V]		
					Engine Speed	> 400 [RPM]		
					Engine Speed Signal Validity	= VALID		
					U0100 (Lost Communication with ECM/PCM "A")	= NOT DETECTED		
					U0073 (CAN Bus-OFF)	= NOT DETECTED		
					Emergency Mode (*4)	= NOT ACTIVE		
					Neutral Avoidance Control	= NOT ACTIVE		
					Solenoid Cut Condition (*Note 3)	= NOT ACTIVE		
					Time since Solenoid Cut (*Note 3) control has been INACTIVE	> 8 [sec]		
						ALL Malfunctions = NOT DETECTED		
					P0974 (Shift Solenoid "A" Control Circuit High) P0973 (Shift Solenoid "A" Control Circuit Low) Status of all of the Gear Ratio malfunctions: (P0967, P0971, P2721, P2730, P2739, P0963, P2763, P0966, P0970, P2720, P2729, P2738, P0962, P2764, P0778, P0798, P2716, P2725, P2734, P0748, P2761) P07C0 (Input/Turbine Speed Sensor "A" Circuit High) P07BF (Input/Turbine Speed Sensor "A" Circuit Low) P0717 (Input/Turbine Speed Sensor "A" Circuit No Signal) P077D (Output Speed Sensor Circuit Low) P077C (Output Speed Sensor Circuit High) P0722 (Output Speed Sensor No Pulse) P0592 (System Voltage Low Supply 2) (*Note 1) P0563 (System Voltage High) P2535 (Ignition Switch Run/Start Position Circuit High)			
					Range Selector Position Switch	= D Range		
					P0705 (Transmission Range Switch Circuit)	= NOT DETECTED		
					P0706 (Transmission Range Switch Performance)	= NOT DETECTED		
					Garage Shift Control has been INACTIVE for this amount of time continuously	T_GarageFin (*1)		
					Shift Control has been INACTIVE for this amount of time continuously	T_ShiftFin (*1)		
					The Input Speed signal is available from the Input Speed Sensor	= TRUE		
					The Output Speed signal is available from the Output Speed Sensor	= TRUE		
					ATF Temperature	>= -20 [deg C]		
					Quick Stop Detection Flag (*Note 4)	= FALSE		
					Safe Gear Control has been INACTIVE for this amount of time continuously	tmr_inh_GE (*1)		
					The TCM is not commanding a neutral condition as a reaction to Safe Gear Control.	= TRUE		

Component / System	Fault Code	Monitor Strategy / Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Gear Ratio (4th Gear)	P0734	Gear 4 Incorrect Ratio	Difference between actual Gear Ratio and 4th Gear Ratio	> 20 [%]	Current Gear	= 4TH GEAR	12 sec (cumulatively)	1
					Output Speed	>= 500 [rpm]		
					Ignition Voltage	> 9000 [mV] for 10 [msec]		
					Battery Voltage	> 10.2 [V]		
					Battery Voltage	<= 32.0 [V]		
					Engine Speed	> 400 [RPM]		
					Engine Speed Signal Validity	= VALID		
					U0100 (Lost Communication with ECM/PCM “A”)	= NOT DETECTED		
					U0073 (CAN Bus-OFF)	= NOT DETECTED		
					Emergency Mode (*4)	= NOT ACTIVE		
					Neutral Avoidance Control	= NOT ACTIVE		
					Solenoid Cut Condition (*Note 3)	= NOT ACTIVE		
					Time since Solenoid Cut (*Note 3) control has been INACTIVE	> 8 [sec]		
						ALL Malfunctions = NOT DETECTED		
					P0974 (Shift Solenoid "A" Control Circuit High) P0973 (Shift Solenoid "A" Control Circuit Low) Status of all of the Gear Ratio malfunctions: (P0967, P0971, P2721, P2730, P2739, P0963, P2763, P0966, P0970, P2720, P2729, P2738, P0962, P2764, P0778, P0798, P2716, P2725, P2734, P0748, P2761) P07C0 (Input/Turbine Speed Sensor "A" Circuit High) P07BF (Input/Turbine Speed Sensor "A" Circuit Low) P0717 (Input/Turbine Speed Sensor "A" Circuit No Signal) P077D (Output Speed Sensor Circuit Low) P077C (Output Speed Sensor Circuit High) P0722 (Output Speed Sensor No Pulse) P0592 (System Voltage Low Supply 2) (*Note 1) P0563 (System Voltage High) P2535 (Ignition Switch Run/Start Position Circuit High)				
					Range Selector Position Switch	= D Range		
					P0705 (Transmission Range Switch Circuit)	= NOT DETECTED		
					P0706 (Transmission Range Switch Performance)	= NOT DETECTED		
					Garage Shift Control has been INACTIVE for this amount of time continuously	T_GarageFin (*1)		
					Shift Control has been INACTIVE for this amount of time continuously	T_ShiftFin (*1)		
					The Input Speed signal is available from the Input Speed Sensor	= TRUE		
					The Output Speed signal is available from the Output Speed Sensor	= TRUE		
					ATF Temperature	>= -20 [deg C]		
					Quick Stop Detection Flag (*Note 4)	= FALSE		
					Safe Gear Control has been INACTIVE for this amount of time continuously	tmr_inh_GE (*1)		
					The TCM is not commanding a neutral condition as a reaction to Safe Gear Control.	= TRUE		
						AND the following conditions are NOT satisfied		
					Difference between actual Gear Ratio and 3rd Gear Ratio	< 4 [%] for 1 [sec] continuously		

Component / System	Fault Code	Monitor Strategy / Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Difference between actual Gear Ratio and 6th Gear Ratio Difference between actual Gear Ratio and 7th Gear Ratio	< 4 [%] for 1 [sec] continuously < 4 [%] for 1 [sec] continuously		
Gear Ratio (4th Gear Stuck)	P0734	Gear 4 Incorrect Ratio	Difference between actual Gear Ratio and 3rd Gear Ratio OR Difference between actual Gear Ratio and 6th Gear Ratio	< 4 % < 4 %	Current Gear Output Speed Input Torque Ignition Voltage Battery Voltage Battery Voltage Engine Speed Engine Speed Signal Validity U0100 (Lost Communication with ECM/PCM "A") U0073 (CAN Bus-OFF) Emergency Mode (*4) Neutral Avoidance Control Solenoid Cut Condition (*Note 3) Time since Solenoid Cut (*Note 3) control has been INACTIVE P0974 (Shift Solenoid "A" Control Circuit High) P0973 (Shift Solenoid "A" Control Circuit Low) Status of all of the Gear Ratio malfunctions: (P0967, P0971, P2721, P2730, P2739, P0963, P2763, P0966, P0970, P2720, P2729, P2738, P0962, P2764, P0778, P0798, P2716, P2725, P2734, P0748, P2761) P07C0 (Input/Turbine Speed Sensor "A" Circuit High) P07BF (Input/Turbine Speed Sensor "A" Circuit Low) P0717 (Input/Turbine Speed Sensor "A" Circuit No Signal) P077D (Output Speed Sensor Circuit Low) P077C (Output Speed Sensor Circuit High) P0722 (Output Speed Sensor No Pulse) P0592 (System Voltage Low Supply 2) (*Note 1) P0563 (System Voltage High) P2535 (Ignition Switch Run/Start Position Circuit High) Range Selector Position Switch P0705 (Transmission Range Switch Circuit) P0706 (Transmission Range Switch Performance) Garage Shift Control has been INACTIVE for this amount of time continuously Shift Control has been INACTIVE for this amount of time continuously The Input Speed signal is available from the Input Speed Sensor The Output Speed signal is available from the Output Speed Sensor ATF Temperature	= 4TH GEAR >= 60 [rpm] >= 50 [Nm] OR <= -50 [Nm] (occur at least 1 time during detection) > 9000 [mV] for 10 [msec] > 10.2 [V] <= 32.0 [V] > 400 [RPM] = VALID = NOT DETECTED = NOT DETECTED = NOT ACTIVE = NOT ACTIVE = NOT ACTIVE > 8 [sec] ALL Malfunctions = NOT DETECTED = D Range = NOT DETECTED = NOT DETECTED T_GarageFin (*1) T_ShiftFin (*1) = TRUE = TRUE >= -20 [deg C]	5 sec	1

Component / System	Fault Code	Monitor Strategy / Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Quick Stop Detection Flag (*Note 4) Safe Gear Control has been INACTIVE for this amount of time continuously The TCM is not commanding a neutral condition as a reaction to Safe Gear Control.	= FALSE tmr_inh_GE (*1) = TRUE		
Gear Ratio (5th Gear)	P0735	Gear 5 Incorrect Ratio	Difference between actual Gear Ratio and 5th Gear Ratio	> 20 [%]	Current Gear Output Speed Ignition Voltage Battery Voltage Battery Voltage Engine Speed Engine Speed Signal Validity U0100 (Lost Communication with ECM/PCM "A") U0073 (CAN Bus-OFF) Emergency Mode (*4) Neutral Avoidance Control Solenoid Cut Condition (*Note 3) Time since Solenoid Cut (*Note 3) control has been INACTIVE P0974 (Shift Solenoid "A" Control Circuit High) P0973 (Shift Solenoid "A" Control Circuit Low) Status of all of the Gear Ratio malfunctions: (P0967, P0971, P2721, P2730, P2739, P0963, P2763, P0966, P0970, P2720, P2729, P2738, P0962, P2764, P0778, P0798, P2716, P2725, P2734, P0748, P2761) P07C0 (Input/Turbine Speed Sensor "A" Circuit High) P07BF (Input/Turbine Speed Sensor "A" Circuit Low) P0717 (Input/Turbine Speed Sensor "A" Circuit No Signal) P077D (Output Speed Sensor Circuit Low) P077C (Output Speed Sensor Circuit High) P0722 (Output Speed Sensor No Pulse) P0592 (System Voltage Low Supply 2) (*Note 1) P0563 (System Voltage High) P2535 (Ignition Switch Run/Start Position Circuit High) Range Selector Position Switch P0705 (Transmission Range Switch Circuit) P0706 (Transmission Range Switch Performance) Garage Shift Control has been INACTIVE for this amount of time continuously Shift Control has been INACTIVE for this amount of time continuously The Input Speed signal is available from the Input Speed Sensor The Output Speed signal is available from the Output Speed Sensor ATF Temperature Quick Stop Detection Flag (*Note 4) Safe Gear Control has been INACTIVE for this amount of time continuously	= 5TH GEAR >= 500 [rpm] > 9000 [mV] for 10 [msec] > 10.2 [V] <= 32.0 [V] > 400 [RPM] = VALID = NOT DETECTED = NOT DETECTED = NOT ACTIVE = NOT ACTIVE = NOT ACTIVE > 8 [sec] ALL Malfunctions = NOT DETECTED = D Range = NOT DETECTED = NOT DETECTED T_GarageFin (*1) T_ShiftFin (*1) = TRUE = TRUE >= -20 [deg C] = FALSE tmr_inh_GE (*1)	12 sec (cumulatively)	1

Component / System	Fault Code	Monitor Strategy / Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					The TCM is not commanding a neutral condition as a reaction to Safe Gear Control.	= TRUE		
					AND the following conditions are NOT satisfied			
					Difference between actual Gear Ratio and 6th Gear Ratio	< 4 [%] for 1 [sec] continuously		
					Difference between actual Gear Ratio and 7th Gear Ratio	< 4 [%] for 1 [sec] continuously		
					Difference between actual Gear Ratio and 8th Gear Ratio	< 4 [%] for 1 [sec] continuously		
Gear Ratio (5th Gear Stuck)	P0735	Gear 5 Incorrect Ratio	Difference between actual Gear Ratio and 6th Gear Ratio	< 4 %	Current Gear	= 5TH GEAR	5 sec	1
					Output Speed	>= 60 [rpm]		
			OR					
			Difference between actual Gear Ratio and 7th Gear Ratio	< 4 %	Input Torque	>= 50 [Nm] OR <= -50 [Nm] (occur at least 1 time during detection)		
					Ignition Voltage	> 9000 [mV] for 10 [msec]		
			OR		Battery Voltage	> 10.2 [V]		
			Difference between actual Gear Ratio and 8th Gear Ratio	< 4 %	Battery Voltage	<= 32.0 [V]		
					Engine Speed	> 400 [RPM]		
					Engine Speed Signal Validity	= VALID		
					U0100 (Lost Communication with ECM/PCM “A”)	= NOT DETECTED		
					U0073 (CAN Bus-OFF)	= NOT DETECTED		
					The TCM has completed the read operation of its Emergency Mode (*4)	= NOT ACTIVE		
					Neutral Avoidance Control	= NOT ACTIVE		
					Solenoid Cut Condition (*Note 3)	= NOT ACTIVE		
					Time since Solenoid Cut (*Note 3) control has been INACTIVE	> 8 [sec]		
						ALL Malfunctions = NOT DETECTED		
					P0974 (Shift Solenoid "A" Control Circuit High) P0973 (Shift Solenoid "A" Control Circuit Low) Status of all of the Gear Ratio malfunctions: (P0967, P0971, P2721, P2730, P2739, P0963, P2763, P0966, P0970, P2720, P2729, P2738, P0962, P2764, P0778, P0798, P2716, P2725, P2734, P0748, P2761) P07C0 (Input/Turbine Speed Sensor "A" Circuit High) P07BF (Input/Turbine Speed Sensor "A" Circuit Low) P0717 (Input/Turbine Speed Sensor "A" Circuit No Signal) P077D (Output Speed Sensor Circuit Low) P077C (Output Speed Sensor Circuit High) P0722 (Output Speed Sensor No Pulse) P0592 (System Voltage Low Supply 2) (*Note 1) P0563 (System Voltage High) P2535 (Ignition Switch Run/Start Position Circuit High)			
					Range Selector Position Switch	= D Range		
					P0705 (Transmission Range Switch Circuit)	= NOT DETECTED		
					P0706 (Transmission Range Switch Performance)	= NOT DETECTED		
					Garage Shift Control has been INACTIVE for this amount of time continuously	T_GarageFin (*1)		

Component / System	Fault Code	Monitor Strategy / Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Shift Control has been INACTIVE for this amount of time continuously The Input Speed signal is available from the Input Speed Sensor The Output Speed signal is available from the Output Speed Sensor ATF Temperature Quick Stop Detection Flag (*Note 4) Safe Gear Control has been INACTIVE for this amount of time continuously The TCM is not commanding a neutral condition as a reaction to Safe Gear Control.	T_ShiftFin (*1) = TRUE = TRUE >= -20 [deg C] = FALSE tmr_inh_GE (*1) = TRUE		
Pressure Control Solenoid "A" Control Circuit (SLT Solenoid)	P0748	Pressure Control Solenoid "A" Electrical	sum_ie (*) (*) The first algorithm checks the cumulative sum of the difference of the linear solenoid feedback current and commanded current. This sum, named "sum_ie", will be updated on every clock cycle of the microprocessor (10 msec). If the value of the sum becomes greater than a calibrated threshold, a malfunction will be confirmed. ie: Difference of "commanded current" and "feedback current" ie added to "sum_ie" every 10 msec sum_ie is cleared if at least one of the following conditions are satisfied 1) Enable conditions are not satisfied 2) -50mA =< ie =< 50mA" 3) Sign of ie is changed	> 60000 [mA]	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory Battery Voltage Linear Solenoid Feedback current Solenoid Cut Condition (*Note 3) P0962 (Pressure Control Solenoid "A" Control Circuit Low) P0963 (Pressure Control Solenoid "A" Control Circuit High) Emergency Mode (*4)	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously) > 11 [V] for [> 500 msec] < 1358 [mA] = NOT ACTIVE = NOT DETECTED = NOT DETECTED = NOT ACTIVE	1 to 3 sec cumulatively	1
			OR					
			| ie | (*) (*) The second algorithm checks the absolute value of the difference of the linear solenoid feedback current and commanded current over time. If the absolute value of the difference of the linear solenoid feedback current and commanded current exceeds a calibrated threshold for a calibrated period of time continuously, a malfunction will be detected. | ie |: Absolute value of ie ie: Difference between "commanded current" and "feedback current"	> 50 [mA]	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory Battery Voltage Linear Solenoid Feedback current Solenoid Cut Condition (*Note 3) P0962 (Pressure Control Solenoid "A" Control Circuit Low) P0963 (Pressure Control Solenoid "A" Control Circuit High) Emergency Mode (*4)	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously) > 11 [V] for [> 500 msec] < 1358 [mA] = NOT ACTIVE = NOT DETECTED = NOT DETECTED = NOT ACTIVE	2 sec	1
Gear Ratio (7th Gear)	P076F	Gear 7 Incorrect Ratio	Difference between actual Gear Ratio and 7th Gear Ratio	> 20 [%]	Current Gear	= 7TH GEAR	12 sec (cumulatively)	1

Component / System	Fault Code	Monitor Strategy / Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Output Speed	>= 500 [rpm]		
					Ignition Voltage	> 9000 [mV] for 10 [msec]		
					Battery Voltage	> 10.2 [V]		
					Battery Voltage	<= 32.0 [V]		
					Engine Speed	> 400 [RPM]		
					Engine Speed Signal Validity	= VALID		
					U0100 (Lost Communication with ECM/PCM “A”)	= NOT DETECTED		
					U0073 (CAN Bus-OFF)	= NOT DETECTED		
					Emergency Mode (*4)	= NOT ACTIVE		
					Neutral Avoidance Control	= NOT ACTIVE		
					Solenoid Cut Condition (*Note 3)	= NOT ACTIVE		
					Time since Solenoid Cut (*Note 3) control has been INACTIVE	> 8 [sec]		
					P0974 (Shift Solenoid "A" Control Circuit High) P0973 (Shift Solenoid "A" Control Circuit Low) Status of all of the Gear Ratio malfunctions: (P0967, P0971, P2721, P2730, P2739, P0963, P2763, P0966, P0970, P2720, P2729, P2738, P0962, P2764, P0778, P0798, P2716, P2725, P2734, P0748, P2761) P07C0 (Input/Turbine Speed Sensor "A" Circuit High) P07BF (Input/Turbine Speed Sensor "A" Circuit Low) P0717 (Input/Turbine Speed Sensor "A" Circuit No Signal) P077D (Output Speed Sensor Circuit Low) P077C (Output Speed Sensor Circuit High) P0722 (Output Speed Sensor No Pulse) P0592 (System Voltage Low Supply 2) (*Note 1) P0563 (System Voltage High) P2535 (Ignition Switch Run/Start Position Circuit High)	ALL Malfunctions = NOT DETECTED		
					Range Selector Position Switch	= D Range		
					P0705 (Transmission Range Switch Circuit) P0706 (Transmission Range Switch Performance)	= NOT DETECTED = NOT DETECTED		
					Garage Shift Control has been INACTIVE for this amount of time continuously	T_GarageFin (*1)		
					Shift Control has been INACTIVE for this amount of time continuously	T_ShiftFin (*1)		
					The Input Speed signal is available from the Input Speed Sensor	= TRUE		
					The Output Speed signal is available from the Output Speed Sensor	= TRUE		
					ATF Temperature	>= -20 [deg C]		
					Quick Stop Detection Flag (*Note 4)	= FALSE		
					Safe Gear Control has been INACTIVE for this amount of time continuously	tmr_inh_GE (*1)		
					The TCM is not commanding a neutral condition as a reaction to Safe Gear Control.	= TRUE		

Component / System	Fault Code	Monitor Strategy / Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Output Speed Sensor Circuit	P077C	Output Speed Sensor Circuit High	Output Speed Sensor Circuit Voltage	< 0.206 [V]	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously)	1 sec	1
Output Speed Sensor Circuit	P077D	Output Speed Sensor Circuit Low	Output Speed Sensor Circuit Voltage	> 2.727 [V]	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously)	1 sec	1
Pressure Control Solenoid "C" Control Circuit (SL2 Solenoid)	P0798	Pressure Control Solenoid "C" Electrical	sum_ie (*) (*) The first algorithm checks the cumulative sum of the difference of the linear solenoid feedback current and commanded current. This sum, named "sum_ie", will be updated on every clock cycle of the microprocessor (10 msec). If the value of the sum becomes greater than a calibrated threshold, a malfunction will be confirmed. ie: Difference of "commanded current" and "feedback current" ie added to "sum_ie" every 10 msec sum_ie is cleared if at least one of the following conditions are satisfied 1) Enable conditions are not satisfied 2) -50mA =< ie =< 50mA" 3) Sign of ie is changed	> 60000 [mA]	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory Battery Voltage Linear Solenoid Feedback current Solenoid Cut Condition (*Note 3) P0970 (Pressure Control Solenoid "C" Control Circuit Low) P0971 (Pressure Control Solenoid "C" Control Circuit High) Emergency Mode (*4)	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously) > 11 [V] for [> 500 msec] < 1358 [mA] = NOT ACTIVE = NOT DETECTED = NOT DETECTED = NOT ACTIVE	1 to 3 sec cumulatively	1
			OR					
			| ie | (*) (*) The second algorithm checks the absolute value of the difference of the linear solenoid feedback current and commanded current over time. If the absolute value of the difference of the linear solenoid feedback current and commanded current exceeds a calibrated threshold for a calibrated period of time continuously, a malfunction will be detected. | ie |: Absolute value of ie ie: Difference between "commanded current" and "feedback current"	> 50 [mA]	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory Battery Voltage Linear Solenoid Feedback current Solenoid Cut Condition (*Note 3) P0970 (Pressure Control Solenoid "C" Control Circuit Low) P0971 (Pressure Control Solenoid "C" Control Circuit High) Emergency Mode (*4)	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously) > 11 [V] for [> 500 msec] < 1358 [mA] = NOT ACTIVE = NOT DETECTED = NOT DETECTED = NOT ACTIVE	2 sec	1

Component / System	Fault Code	Monitor Strategy / Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Input/Turbine Speed Sensor "A" Circuit	P07BF	Input/Turbine Speed Sensor "A" Circuit Low	Input Speed Sensor Circuit Voltage	< 0.206 V	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously)	1 sec	1
Input/Turbine Speed Sensor "A" Circuit	P07C0	Input/Turbine Speed Sensor "A" Circuit High	Input Speed Sensor Circuit Voltage	> 2.727 V	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously)	1 sec	1
Gear Ratio (8th Gear)	P07D9	Gear 8 Incorrect Ratio	Difference between actual Gear Ratio and 8th Gear Ratio	> 20 [%]	Current Gear Output Speed Ignition Voltage Battery Voltage Battery Voltage Engine Speed Engine Speed Signal Validity U0100 (Lost Communication with ECM/PCM "A") U0073 (CAN Bus-OFF) Emergency Mode (*4) Neutral Avoidance Control Solenoid Cut Condition (*Note 3) Time since Solenoid Cut (*Note 3) control has been INACTIVE P0974 (Shift Solenoid "A" Control Circuit High) P0973 (Shift Solenoid "A" Control Circuit Low) Status of all of the Gear Ratio malfunctions: (P0967, P0971, P2721, P2730, P2739, P0963, P2763, P0966, P0970, P2720, P2729, P2738, P0962, P2764, P0778, P0798, P2716, P2725, P2734, P0748, P2761) P07C0 (Input/Turbine Speed Sensor "A" Circuit High) P07BF (Input/Turbine Speed Sensor "A" Circuit Low) P0717 (Input/Turbine Speed Sensor "A" Circuit No Signal) P077D (Output Speed Sensor Circuit Low) P077C (Output Speed Sensor Circuit High) P0722 (Output Speed Sensor No Pulse) P0592 (System Voltage Low Supply 2) (*Note 1) P0563 (System Voltage High) P2535 (Ignition Switch Run/Start Position Circuit High) Range Selector Position Switch P0705 (Transmission Range Switch Circuit) P0706 (Transmission Range Switch Performance) Garage Shift Control has been INACTIVE for this amount of time continuously Shift Control has been INACTIVE for this amount of time continuously	= 8TH GEAR >= 500 [rpm] > 9000 [mV] for 10 [msec] > 10.2 [V] <= 32.0 [V] > 400 [RPM] = VALID = NOT DETECTED = NOT DETECTED = NOT ACTIVE = NOT ACTIVE = NOT ACTIVE > 8 [sec] ALL Malfunctions = NOT DETECTED = D Range = NOT DETECTED = NOT DETECTED T_GarageFin (*1) T_ShiftFin (*1)	12 sec (cumulatively)	1

Component / System	Fault Code	Monitor Strategy / Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					The Input Speed signal is available from the Input Speed Sensor	= TRUE		
					The Output Speed signal is available from the Output Speed Sensor	= TRUE		
					ATF Temperature	>= -20 [deg C]		
					Quick Stop Detection Flag (*Note 4)	= FALSE		
					Safe Gear Control has been INACTIVE for this amount of time continuously	tmr_inh_GE (*1)		
					The TCM is not commanding a neutral condition as a reaction to Safe Gear Control.	= TRUE		
						AND the following conditions are NOT satisfied		
					Difference between actual Gear Ratio and 6th Gear Ratio	< 4 [%] for 1 [sec] continuously		
					Difference between actual Gear Ratio and 7th Gear Ratio	< 4 [%] for 1 [sec] continuously		
Gear Ratio (8th Gear Stuck)	P07D9	Gear 8 Incorrect Ratio	Difference between actual Gear Ratio and 7th Gear Ratio	< 4 %	Current Gear	= 8TH GEAR	5 sec	1
					Output Speed	>= 60 [rpm]		
			OR					
			Difference between actual Gear Ratio and 6th Gear Ratio	< 4 %	Input Torque	>= 50 [Nm] OR <= -50 [Nm] (occur at least 1 time during detection)		
					Ignition Voltage	> 9000 [mV] for 10 [msec]		
					Battery Voltage	> 10.2 [V]		
					Battery Voltage	<= 32.0 [V]		
					Engine Speed	> 400 [RPM]		
					Engine Speed Signal Validity	= VALID		
					U0100 (Lost Communication with ECM/PCM “A”)	= NOT DETECTED		
					U0073 (CAN Bus-OFF)	= NOT DETECTED		
					Emergency Mode (*4)	= NOT ACTIVE		
					Neutral Avoidance Control	= NOT ACTIVE		
					Solenoid Cut Condition (*Note 3)	= NOT ACTIVE		
					Time since Solenoid Cut (*Note 3) control has been INACTIVE	> 8 [sec]		
						ALL Malfunctions = NOT DETECTED		
					P0974 (Shift Solenoid "A" Control Circuit High) P0973 (Shift Solenoid "A" Control Circuit Low) Status of all of the Gear Ratio malfunctions: (P0967, P0971, P2721, P2730, P2739, P0963, P2763, P0966, P0970, P2720, P2729, P2738, P0962, P2764, P0778, P0798, P2716, P2725, P2734, P0748, P2761) P07C0 (Input/Turbine Speed Sensor "A" Circuit High) P07BF (Input/Turbine Speed Sensor "A" Circuit Low) P0717 (Input/Turbine Speed Sensor "A" Circuit No Signal) P077D (Output Speed Sensor Circuit Low) P077C (Output Speed Sensor Circuit High) P0722 (Output Speed Sensor No Pulse) P0592 (System Voltage Low Supply 2) (*Note 1) P0563 (System Voltage High) P2535 (Ignition Switch Run/Start Position Circuit High)			
					Range Selector Position Switch	= D Range		

Component / System	Fault Code	Monitor Strategy / Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					P0705 (Transmission Range Switch Circuit) P0706 (Transmission Range Switch Performance) Garage Shift Control has been INACTIVE for this amount of time continuously Shift Control has been INACTIVE for this amount of time continuously The Input Speed signal is available from the Input Speed Sensor The Output Speed signal is available from the Output Speed Sensor ATF Temperature Quick Stop Detection Flag (*Note 4) Safe Gear Control has been INACTIVE for this amount of time continuously The TCM is not commanding a neutral condition as a reaction to Safe Gear Control.	= NOT DETECTED = NOT DETECTED T_GarageFin (*1) T_ShiftFin (*1) = TRUE = TRUE >= -20 [deg C] = FALSE tmr_inh_GE (*1) = TRUE		
Manual Mode Switch	P0827	Up and Down Shift Switch Circuit Low Voltage	Manual Mode Switch Signal Level (*) (*) The Manual Mode Switch signal level is determined as a percentage of Ignition Voltage (= Manual Mode Switch Voltage / Ignition Voltage [%])	< 5.0 [%]	Ignition Voltage Battery Voltage Battery Voltage Engine Speed Engine Speed Signal Validity U0100 (Lost Communication with ECM/PCM "A") U0073 (CAN Bus-OFF) Ignition Voltage P2534 (Ignition Voltage Low Supply) P2535 (Ignition Switch Run/Start Position Circuit High)	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] > 400 [RPM] = VALID = NOT DETECTED = NOT DETECTED 9 [V] <= IG <= 32 [V] = NOT DETECTED = NOT DETECTED	30 sec	No MIL "Special C"
Manual Mode Switch	P0828	Up and Down Shift Switch Circuit High Voltage	Manual Mode Switch Signal Level (*) (*) The Manual Mode Switch signal level is determined as a percentage of Ignition Voltage (= Manual Mode Switch Voltage / Ignition Voltage [%])	> 25.5 [%]	Ignition Voltage Battery Voltage Battery Voltage Engine Speed Engine Speed Signal Validity U0100 (Lost Communication with ECM/PCM "A") U0073 (CAN Bus-OFF) Ignition Voltage P2534 (Ignition Voltage Low Supply) P2535 (Ignition Switch Run/Start Position Circuit High)	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] > 400 [RPM] = VALID = NOT DETECTED = NOT DETECTED 9 [V] <= IG <= 32 [V] = NOT DETECTED = NOT DETECTED	30 sec	No MIL "Special C"
Transmission Fluid Pressure Sensor/Switch "A" Circuit	P0842	Transmission Fluid Pressure Sensor/Switch "A" Circuit Low	Transmission Fluid Pressure Sensor Status	= ON	The following parameters must be met for a calibrated period of time. Ignition Voltage Battery Voltage Battery Voltage Engine Speed Engine Speed Signal Validity U0100 (Lost Communication with ECM/PCM "A") U0073 (CAN Bus-OFF) Emergency Mode (*4) Neutral Avoidance Control Solenoid Cut Condition (*Note 3) Time since Solenoid Cut (*Note 3) control has been INACTIVE P0974 (Shift Solenoid "A" Control Circuit High) P0973 (Shift Solenoid "A" Control Circuit Low)	Time_SwONfailw (*2) > 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] > 400 [RPM] = VALID = NOT DETECTED = NOT DETECTED = NOT ACTIVE = NOT ACTIVE = NOT ACTIVE > 8 [sec] ALL Malfunctions = NOT DETECTED	1 sec	2

Component / System	Fault Code	Monitor Strategy / Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Status of all of the Gear Ratio malfunctions: (P0967, P0971, P2721, P2730, P2739, P0963, P2763, P0966, P0970, P2720, P2729, P2738, P0962, P2764, P0778, P0798, P2716, P2725, P2734, P0748, P2761) P07C0 (Input/Turbine Speed Sensor "A" Circuit High) P07BF (Input/Turbine Speed Sensor "A" Circuit Low) P0717 (Input/Turbine Speed Sensor "A" Circuit No Signal) P077D (Output Speed Sensor Circuit Low) P077C (Output Speed Sensor Circuit High) P0722 (Output Speed Sensor No Pulse) P0592 (System Voltage Low Supply 2) (*Note 1) P0563 (System Voltage High) P2535 (Ignition Switch Run/Start Position Circuit High) P0601 (Internal Control Module Memory Checksum Error)			
					Garage Shift Control has been INACTIVE for this amount of time continuously	T_GarageFin (*1)		
					Shift Control has been INACTIVE for this amount of time continuously	T_ShiftFin (*1)		
					ATF Temperature	>= 20 [deg C]		
					P0713 (Transmission Fluid Temperature Sensor "A" Circuit High)	= NOT DETECTED		
					P0712 (Transmission Fluid Temperature Sensor "A" Circuit Low)	= NOT DETECTED		
					Range Selector Position Switch	= P or R or N Range		
					Time Since Shifting to P,R, or N	Time_SwDNFin (*2)		
					The Input Speed signal is available from the Input Speed Sensor	= TRUE		
					The Output Speed signal is available from the Output Speed Sensor	= TRUE		
					Quick Stop Detection Flag (*Note 4)	= FALSE		
					Safe Gear Control has been INACTIVE for this amount of time continuously	tmr_inh_GE (*1)		
					Gear Ratio Failure Status (P0731, P0732, P0733, P0734, P0735, P0729, P076F, P07D9)	ALL = NOT DETECTED		
					The TCM is not commanding a neutral condition as a reaction to Safe Gear Control.	= TRUE		
Transmission Fluid Pressure Sensor/Switch "A" Circuit	P0843	Transmission Fluid Pressure Sensor/Switch "A" Circuit High	Current Gear	= 1st, 2nd, 3rd, 4th, or 5th	The following parameters must be met for a calibrated period of time continuously.	Time_SwOFFfailw (*2)	2 sec	2
			Difference between actual Gear Ratio and Expected Gear Ratio	< 4 %	Ignition Voltage	> 9000 [mV] for 10 [msec] continuously		
					Battery Voltage	> 10.2 [V]		
			ATF Pressure Command	>= 1600 [kPa]	Battery Voltage	<= 32.0 [V]		
			ATF Pressure Switch Status	= OFF	Engine Speed	> 400 [RPM]		
			Engine Speed	> 500 [rpm]	Engine Speed Signal Validity	= VALID		
			Time since Engine Speed exceeded threshold above	> 1000 [msec]	U0100 (Lost Communication with ECM/PCM "A")	= NOT DETECTED		
					U0073 (CAN Bus-OFF)	= NOT DETECTED		
			Output Speed	>= 60 [rpm]	The TCM has completed the read operation of its non-volatile memory	(all 8 criteria for 2 [sec] continuously)		
			Engine Torque without Acceleration	>= 80 [Nm]	Emergency Mode (*4)	= NOT ACTIVE		
			Input Speed	<= 6000 [rpm]	Neutral Avoidance Control	= NOT ACTIVE		
					Solenoid Cut Condition (*Note 3)	= NOT ACTIVE		
					Time since Solenoid Cut (*Note 3) control has been	> 8 [sec]		

Component / System	Fault Code	Monitor Strategy / Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					INACTIVE			
					P0974 (Shift Solenoid "A" Control Circuit High) P0973 (Shift Solenoid "A" Control Circuit Low) Status of all of the Gear Ratio malfunctions: (P0967, P0971, P2721, P2730, P2739, P0963, P2763, P0966, P0970, P2720, P2729, P2738, P0962, P2764, P0778, P0798, P2716, P2725, P2734, P0748, P2761) P07C0 (Input/Turbine Speed Sensor "A" Circuit High) P07BF (Input/Turbine Speed Sensor "A" Circuit Low) P0717 (Input/Turbine Speed Sensor "A" Circuit No Signal) P077D (Output Speed Sensor Circuit Low) P077C (Output Speed Sensor Circuit High) P0722 (Output Speed Sensor No Pulse) P0592 (System Voltage Low Supply 2) (*Note 1) P0563 (System Voltage High) P2535 (Ignition Switch Run/Start Position Circuit High)	ALL Malfunctions = NOT DETECTED		
					Range Selector Position Switch	= D Range		
					Garage Shift Control has been INACTIVE for this amount of time continuously	T_GarageFin (*1)		
					Shift Control has been INACTIVE for this amount of time continuously	T_ShiftFin (*1)		
					ATF Temperature	>= OT_Sw_det (*14)		
					P0713 (Transmission Fluid Temperature Sensor "A" Circuit High)	= NOT DETECTED		
					P0712 (Transmission Fluid Temperature Sensor "A" Circuit Low)	= NOT DETECTED		
					The Input Speed signal is available from the Input Speed Sensor	= TRUE		
					The Output Speed signal is available from the Output Speed Sensor	= TRUE		
					Quick Stop Detection Flag (*Note 4)	= FALSE		
					Safe Gear Control has been INACTIVE for this amount of time continuously	tmr_inh_GE (*1)		
					Gear Ratio Failure Status (P0731, P0732, P0733, P0734, P0735, P0729, P076F, P07D9)	ALL = NOT DETECTED		
					The TCM is not commanding a neutral condition as a reaction to Safe Gear Control.	= TRUE		
Manual Mode Switch	P085F	Up and Down Shift Switch Circuit Stuck in Range	Manual Mode Switch Signal Level (*) (*) The Manual Mode Switch signal level is determined as a percentage of Ignition Voltage (= Manual Mode Switch Voltage / Ignition Voltage [%])	10.4 [%] < Manual Switch < 14.8 [%]	Ignition Voltage Battery Voltage Battery Voltage Engine Speed Engine Speed Signal Validity U0100 (Lost Communication with ECM/PCM "A") U0073 (CAN Bus-OFF)	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] > 400 [RPM] = VALID = NOT DETECTED = NOT DETECTED	30 sec	No MIL "Special C"
					Ignition Voltage P2534 (Ignition Voltage Low Supply) P2535 (Ignition Switch Run/Start Position Circuit High)	9 [V] <= IG <= 32 [V] = NOT DETECTED = NOT DETECTED		
Manual Mode Switch	P085F	Up and Down Shift Switch Circuit Stuck in Range	Manual Mode Switch Signal Level (*) (*) The Manual Mode Switch signal level is	14.8 [%] <= Manual Switch < 25.5 [%]	Ignition Voltage Battery Voltage Battery Voltage	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V]	34 sec (cumulative between P/R/N and D range tests)	No MIL "Special C"

Component / System	Fault Code	Monitor Strategy / Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
			determined as a percentage of Ignition Voltage (= Manual Mode Switch Voltage / Ignition Voltage [%]) The time period is based on the Gear Selector Position: - for 4 sec continuously in P,R, or N range AND - for 30 sec continuously in D range		Engine Speed Engine Speed Signal Validity U0100 (Lost Communication with ECM/PCM "A") U0073 (CAN Bus-OFF) Ignition Voltage P2534 (Ignition Voltage Low Supply) P2535 (Ignition Switch Run/Start Position Circuit High) P0705 (Transmission Range Switch Circuit) P0706 (Transmission Range Switch Performance)	> 400 [RPM] = VALID = NOT DETECTED = NOT DETECTED 9 [V] <= IG <= 32 [V] = NOT DETECTED = NOT DETECTED = NOT DETECTED = NOT DETECTED		
Transmission Control Module (TCM)	P16F3	Control Module Redundant Memory Performance	Downshift commanded (*) (*) The solenoid patterns for the currently engaged gear, target gear, and minimum allowed gear (which is dependent on the vehicle speed) are compared, and the downshift to be commanded would cause unintended vehicle deceleration.	< Minimum Safe Gear (*)	P0606 (Control Module Processor) - Solenoid Cut Malfunction Solenoid Cut Request	= NOT DETECTED = INACTIVE	150 msec	1
Un-usual shifting with Max Pressure Pressure Control Solenoid "B" Control Circuit (SL1 Solenoid) Pressure Control Solenoid "C" Control Circuit (SL2 Solenoid) Pressure Control Solenoid "D" Control Circuit (SL3 Solenoid) Pressure Control Solenoid "E" Control Circuit (SL4 Solenoid) Pressure Control Solenoid "F" Control Circuit (SL5 Solenoid)	P170A P170B P170C P170D P170E	Pressure Control Solenoid Valve "2" Max Pressure Not Achieved Pressure Control Solenoid Valve "3" Max Pressure Not Achieved Pressure Control Solenoid Valve "4" Max Pressure Not Achieved Pressure Control Solenoid Valve "5" Max Pressure Not Achieved Pressure Control Solenoid Valve "6" Max Pressure Not Achieved	Each component (C1, C2, C3, C4, and B1) diagnosed has its own unique error counter, which will diagnose the failed component if the malfunction is detected. These counters are shared between all of the algorithms. If any one of those counters becomes equal to a calibrated total value, the malfunction will be confirmed and a DTC will be stored. There are (7) unique algorithms which run simultaneously in order to attempt to detect a MAX pressure malfunction. These algorithms are fairly complex; therefore they have been described in detail in section 5. count_fail_SLC1MAX_usft (*) count_fail_SLC2MAX_usft (*) count_fail_SLC3MAX_usft (*) count_fail_SLC4MAX_usft (*) count_fail_SLB1MAX_usft (*) (*):refer to conditions A-1 to E below	>= 5 >= 5 >= 5 >= 5 >= 5	Ignition Voltage Battery Voltage Battery Voltage Engine Speed Engine Speed Signal Validity U0100 (Lost Communication with ECM/PCM "A") U0073 (CAN Bus-OFF) The TCM has completed the read operation of its non-volatile memory Emergency Mode (*4) Neutral Avoidance Control Solenoid Cut Condition (*Note 3) Time since Solenoid Cut (*Note 3) control has been INACTIVE P0974 (Shift Solenoid "A" Control Circuit High) P0973 (Shift Solenoid "A" Control Circuit Low) Status of all of the Gear Ratio malfunctions: (P0967, P0971, P2721, P2730, P2739, P0963, P2763, P0966, P0970, P2720, P2729, P2738, P0962, P2764, P0778, P0798, P2716, P2725, P2734, P0748, P2761) P07C0 (Input/Turbine Speed Sensor "A" Circuit High) P07BF (Input/Turbine Speed Sensor "A" Circuit Low)	> 9000 [mV] for 10 [msec] > 10.2 [V] <= 32.0 [V] > 400 [RPM] = VALID = NOT DETECTED = NOT DETECTED (all 8 criteria for 2 [sec] continuously) = NOT ACTIVE = NOT ACTIVE = NOT ACTIVE > 8 [sec] ALL Malfunctions = NOT DETECTED	(Shift time dependent) 300 msec to 2 sec, 5 times cumulatively.	1

Component / System	Fault Code	Monitor Strategy / Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					P0717 (Input/Turbine Speed Sensor "A" Circuit No Signal) P077D (Output Speed Sensor Circuit Low) P077C (Output Speed Sensor Circuit High) P0722 (Output Speed Sensor No Pulse) P0592 (System Voltage Low Supply 2) (*Note 1) P0563 (System Voltage High) P2535 (Ignition Switch Run/Start Position Circuit High)			
					Garage Shift Control has been INACTIVE for this amount of time continuously Range Selector Position Switch Wheel Spin Detected Output Speed ATF temperature The Input Speed signal is available from the Input Speed Sensor The Output Speed signal is available from the Output Speed Sensor Safe Gear Control has been INACTIVE for this amount of time continuously	T_GarageFin (*1) = D Range = FALSE >= 300 [rpm] >= -100 [degC] = TRUE = TRUE tmr_inh_GE (*1)		
			Unusual Shifting Test A-1: Up-shift with Tie-up (C1, C3, C4, or B1 not released)					
			If a pressure control malfunction exists during an up-shift, it may be impossible to release the element commanded to disengage. Such a malfunction is possible to detect when the transmission takes an excessively long time to start the up-shift (Input Speed change from current gear to target gear) while the engagement					
			When the following conditions are ALL satisfied, then the criteria is considered to be met. Based on the Upshift that was occurring, the associated counter is					
			for up-shifts (2-8, 3-7, 4-6, 5-6, 5-7, 5-8) for up-shifts (3-4, 3-5, 7-8) for up-shifts (4-5, 6-7, 6-8) for up-shifts (2-3, 2-4, 2-5)	count_fail_SLC1MAX_usft count_fail_SLC3MAX_usft count_fail_SLC4MAX_usft count_fail_SLB1MAX_usft				
			During any of the following Up-Shifts Shift Control for Torque Phase B has begun Time since beginning of Torque Phase B Applied Element Command Pressure Shifting does not begin despite of shifting commanded. (No change in inRpm eventhough the shift command is made) Max of engine flare ratio The gear ratio before shift control began is normal (*A) OR The gear ratio at the beginning of the shift is normal (*B) Input Torque (*A) This condition is met if the following is true: Difference between actual Gear Ratio and expected Gear Ratio (*B) This condition is met if the following is true:	(2-8, 3-7, 4-6, 5-6, 5-7, 5-8, 3-4, 3-5, 7-8, 4-5, 6-7, 6-8, 2-3, 2-4, 2-5) = TRUE >= TimeTrp_B (*10) > 2.5 [kg/cm^2] = TRUE <= 50 [rpm] = TRUE >= 50 [Nm] OR <= -50 [Nm] < 4 [%]				

Component / System	Fault Code	Monitor Strategy / Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
			Difference between actual Gear Ratio and expected Gear Ratio	< 8 [%]				
			Unusual Shifting Test A-2: Down-shift with Tie-up (C1, C3, C4, or B1 not released)					
			If a pressure control malfunction exists during a down-shift, it may be impossible to release an element which is supposed to disengage. Such a malfunction is possible to detect when the transmission takes an excessively long time to start a down-shift (Input Speed change from current gear to target gear) while the engagement					
			When the following conditions are ALL satisfied, then the criteria is considered to be met. Based on the Down-shift that was occurring, the associated counter is					
			for down-shifts (5-2, 5-3, 5-4, 6-4,7-3, 8-2) for down-shifts (3-2, 7-5, 7-6) for down-shifts (4-2, 4-3, 6-5) for down-shifts (8-5, 8-6, 8-7)	count_fail_SLC2MAX_usft count_fail_SLC3MAX_usft count_fail_SLC4MAX_usft count_fail_SLB1MAX_usft				
			During any of the following Down-Shifts After "Start of initial release pressure control phase" Release Pressure Control Phase Duration Applied Element Command Pressure Shifting does not begin despite of shifting commanded. (No change in inRpm eventhough the shift command is made) Min of engine flare ratio The gear ratio before shift control began is normal (*A) OR The gear ratio at the beginning of the shift is normal (*B) Input Torque (*A) This condition is met if the following is true: Difference between actual Gear Ratio and expected Gear Ratio (*B) This condition is met if the following is true: Difference between actual Gear Ratio and expected Gear Ratio	(3-2, 4-2, 4-3, 5-2, 5-3, 5-4, 6-4, 6-5, 7-3, 7-5, 7-6, 8-2, 8-5, 8-6, 8-7) = TRUE >= Time_failA_down1 (*10) AND >= Time_failA_down2 (*10) > 3.0 [kg/cm^2] when Input Torque with No Acceleration < 100 [Nm] = TRUE >= -50 [rpm] = TRUE >= 50 [Nm] OR <= -50 [Nm] < 4% < 8 [%]				
			Unusual Shifting Test B-1: Up-shift with Engine Flare (C1, C4, or B1 not released)					
			The TL80SN 8-Speed transmission is equipped with failsafe valves to mitigate any effects of falsely engaged brakes or clutches. However, during some shift types if an element is falsely engaged, the torque transfer from the expected clutches and/or brakes will be disrupted.					
			When ALL of the conditions of a state are satisfied, the function then moves to the next state. Based on the Up-shift that was occurring, the associated counter is					
			for up-shifts (6-7, 6-8) for up-shifts (7-8) for up-shifts (3-4, 3-5, 4-5)	count_fail_SLC1MAX_usft count_fail_SLC4MAX_usft count_fail_SLB1MAX_usft				

Component / System	Fault Code	Monitor Strategy / Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
			State 1 (Start Detection due to Deviation from Expected Transmission Input Speed) If ALL conditions are met:					
			During any of the following single clutch to clutch Up-shifts	(6-7, 6-8, 7-8, 3-4, 3-5, 4-5)				
			Input Speed - (Output Speed x Gear Ratio of current gear before shifting)	>= flare_fail_up (*11)				
			NOT in multiplex shifting	= TRUE				
			State 2 (Determine the Fault Type or check for Input Speed Deviation Correction)					
			Criteria 2-1: if ALL conditions are met:					
			Input Speed - (Output Speed x Gear Ratio of current gear before shifting)	<= flare_fail_up (*11) - 200 [rpm]				
			TCM currently commanding a Clutch-to-Clutch Up-shift	= FALSE				
			Criteria 2-2: if ALL conditions are met:					
			The TCM is commanding a (3-4, 3-5, or 4-5 up-shift)	= TRUE				
			"Time Since State 1" timer	> Time324 (*10) [sec]				
			Input Speed Acceleration	> 5000 [rpm/sec] for 0.03 [sec]				
			Time since the start of the apply pressure control	< 1.0 [sec]				
			Criteria 2-3: if ALL conditions are met:					
			The TCM is commanding a (6-7 or 6-8 up-shift)	= TRUE				
			"Time Since State 1" timer	> Time324 (*10) [sec]				
			Input Speed Acceleration	> 5000 [rpm/sec] for 0.03 [sec]				
			Time since the start of the apply pressure control	< 1.0 [sec]				
			Criteria 2-4: if ALL conditions are met:					
			The TCM is commanding a (7-8 up-shift)	= TRUE				
			"Time Since State 1" timer	> Time324 (*X) [sec]				
			Input Speed Acceleration	> 5000 [rpm/sec] for 0.03 [sec]				
			Time since the start of the apply pressure control	< 1.0 [sec]				
			Criteria 2-5: if condition (A) AND (condition (B) OR (C)) are met:					
			(A) "Time Since State 1" timer	> TimeFailB (*10) [sec]				
			(B) "Release Element Pressure at Flare Start"	> 2.0 [kg/cm^2]				
			(C) Applied Element Commanded Pressure	> 2.0 [kg/cm^2]				
			State 3 (Conclude Malfunction Detection and Resume Normal Operations) if ALL conditions are met:					
			"Exit Unusual Shifting Test B-1" timer	> TimeFailB (*10) [sec]				
			Unusual Shifting Test B-2: Down-shift with Engine Flare (B1 not released)					
			The TL80SN 8-Speed transmission is equipped with failsafe valves to mitigate any effects of falsely engaged brakes or clutches. However, during some shift types if an element is falsely engaged, the torque transfer from the expected clutches and/or brakes will be disrupted. A symptom of such a malfunction is a large Input Speed					
			State 1 (Start Detection due to Deviation from Expected Transmission Input Speed)					
			Criteria 1-1: if ALL conditions are met:					
			During the following Down-shift	(4-3)				
			Time since the start of the apply pressure control	< 1.0 [sec]				

Component / System	Fault Code	Monitor Strategy / Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
			NOT in multiplex shifting	= TRUE				
			Input Speed - (Output Speed x Gear Ratio of gear expected after the shift)	>= 500 [rpm]				
			Input Speed Acceleration	> 5000 [rpm/sec] for 0.03 [sec]				
			The gear ratio before shift control began is normal (*A) OR The gear ratio at the beginning of the shift is normal (*B)	= TRUE				
			(*A) This condition is met if the following is true:					
			Difference between actual Gear Ratio and expected Gear Ratio	< 4%				
			(*B) This condition is met if the following is true:					
			Difference between actual Gear Ratio and expected Gear Ratio	< 8 [%]				
			Criteria 1-2: if ALL conditions are met:					
			During the following Down-shift	(5-4, 5-3)				
			Time since the start of the apply pressure control	< 1.0 [sec]				
			NOT in multiplex shifting	= TRUE				
			Input Speed - (Output Speed x Gear Ratio of gear expected after the shift)	>= 500 [rpm]				
			Input Speed Acceleration	> 5000 [rpm/sec] for 0.03 [sec]				
			The gear ratio at the beginning of the shift indicates 8th gear	= TRUE				
			State 2 (Increment the malfunction counter or wait for the shift to complete)					
			Criteria 2-1: if ALL conditions are met:					
			"Time Since State 1" timer	> Time324 (*10) [sec]				
			Criteria 2-2: if condition (A) AND (condition (B) OR (C)) are met:					
			(A) During the following Down-shift	(4-3)				
			(B) The shift has completed	= TRUE				
			(C) Input Speed - (Output Speed x Gear Ratio of gear expected after the shift)	< 500 [rpm]				
			Criteria 2-3: if condition (A) AND (condition (B) OR (C)) are met:					
			(A) During the following Down-shift	(5-4, 5-3)				
			(B) The shift has completed	= TRUE				
			(C) Input Speed - (Output Speed x Gear Ratio of gear expected after the shift)	< 500 [rpm]				
			State 3 (Conclude Malfunction Detection and Resume Normal Operations) if ALL conditions are met:					
			"Exit Unusual Shifting Test B-2" timer	> Time423B (*10) [sec]				
			Unusual Shifting Test B-3: Down-shift with Engine Flare (C1 not released)					
			The TL80SN 8-Speed transmission is equipped with failsafe valves to mitigate any effects of falsely engaged brakes or clutches. However, during some shift types if an element is falsely engaged, the torque transfer from the expected clutches and/or brakes will be disrupted. A symptom of such a malfunction is a large Input Speed					
			State 1 (Start Detection due to Deviation from Expected Transmission Input Speed)					
			Criteria 1-1: if ALL conditions are met:					
			During the following Down-shift	(8-7, 8-6, 7-6)				
			Time since the start of the apply pressure control	< 1.0 [sec]				

Component / System	Fault Code	Monitor Strategy / Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
			NOT in multiplex shifting	= TRUE				
			Input Speed - (Output Speed x Gear Ratio of gear expected after the shift)	>= 300 [rpm]				
			Input Speed Acceleration	> 5000 [rpm/sec] for 0.03 [sec]				
			The gear ratio before shift control began is normal (*A) OR The gear ratio at the beginning of the shift is normal (*B)	= TRUE				
			(*A) This condition is met if the following is true:					
			Difference between actual Gear Ratio and expected Gear Ratio	< 4 [%]				
			(*B) This condition is met if the following is true:					
			Difference between actual Gear Ratio and expected Gear Ratio	< 8 [%]				
			State 2 (Increment the malfunction counter or wait for the shift to complete)					
			Criteria 2-1: if ALL conditions are met:					
			"Time Since State 1" timer	> Time857a (*10) [sec]				
			Criteria 2-2: if condition (A) AND (condition (B) OR (C)) are met:					
			(A) During the following Down-shift	(8-7, 8-6, 7-6)				
			(B) The shift has completed	= TRUE				
			(C) Input Speed - (Output Speed x Gear Ratio of gear expected after the shift)	< 300 [rpm]				
			State 3 (Conclude Malfunction Detection and Resume Normal Operations) if ALL conditions are met:					
			"Exit Unusual Shifting Test B-3" timer	> Time857b (*X) [sec]				
			Unusual Shifting Test B-4: Down-shift with Engine Flare (C3 not released)					
			The TL80SN 8-Speed transmission is equipped with failsafe valves to mitigate any effects of falsely engaged brakes or clutches. However, during some shift types if an element is falsely engaged, the torque transfer from the expected clutches and/or brakes will be disrupted. A symptom of such a malfunction is a large Input Speed					
			State 1 (Start Detection due to Deviation from Expected Transmission Input Speed)					
			Criteria 1-1: if ALL conditions are met:					
			During the following Down-shift	(5-4)				
			Time since the start of the apply pressure control	< 1.0 [sec]				
			NOT in multiplex shifting	= TRUE				
			Input Speed - (Output Speed x Gear Ratio of gear expected after the shift)	>= 300 [rpm]				
			Input Speed Acceleration	> 5000 [rpm/sec] for 0.03 [sec]				
			The gear ratio at the beginning of the shift is 7th gear	= TRUE				
			State 2 (Increment the malfunction counter or wait for the shift to complete)					
			Criteria 2-1: if ALL conditions are met:					
			"Time Since State 1" timer	> Time54a (*10) [sec]				
			Criteria 2-2: if condition (A) AND (condition (B) OR (C)) are met:					
			During the following Down-shift	(5-4)				
			(B) The shift has completed	= TRUE				
			(C) Input Speed - (Output Speed x Gear Ratio of gear expected after the shift)	< 300 [rpm]				

Component / System	Fault Code	Monitor Strategy / Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
			State 3 (Conclude Malfunction Detection and Resume Normal Operations) if ALL conditions are met:					
			"Exit Unusual Shifting Test B-4" timer	> Time54b (*X) [sec]				
			Unusual Shifting Test E: Gear Ratio Malfunction during Shifting					
			Note: To confirm if a shift ratio is fulfilled, the following criteria is used:					
			If all of the following conditions are met:					
			During the following shifts 5th gear ratio fulfilled at the beginning of the shift for 1.0 sec Input Torque Applied Element Command Pressure	(1-2, 1-3, 1-4, 1-5) = TRUE <= -50 [Nm] OR >= 50 [Nm] > 2.5 [kg/cm^2]				
			If all of the following conditions are met:					
			During the following shifts 8th gear ratio fulfilled at the beginning of the shift for 1.0 sec Input Torque	(2-8) = TRUE <= -50 [Nm] OR >= 50 [Nm]				
			If all of the following conditions are met:					
			During the following shifts 7th gear ratio fulfilled at the beginning of the shift for 1.0 sec Input Torque	(3-7) = TRUE <= -50 [Nm] OR >= 50 [Nm]				
			If all of the following conditions are met:					
			During the following shifts 6th gear ratio fulfilled at the beginning of the shift for 1.0 sec Input Torque	(4-6) = TRUE <= -50 [Nm] OR >= 50 [Nm]				
			If all of the following conditions are met:					
			During the following shifts 3rd gear ratio fulfilled at the beginning of the shift for 1.0 sec Input Torque Applied Element Command Pressure (this condition only applies to the following shifts (1-2, 1-3, 1-4, 1-5)	(1-2, 1-3, 1-4, 1-5, 2-3, 2-4, 2-5, 4-5, 4-3, 4-2, 4-1, 2-1, 2-1EB, 1EB-1, 1-1EB) = TRUE <= -50 [Nm] OR >= 50 [Nm] > 2.5 [kg/cm^2]				
			If all of the following conditions are met:					
			During the following shifts 7th gear ratio fulfilled at the beginning of the shift for 1.0 sec Input Torque	(5-6, 5-7, 5-8, 6-5, 6-7, 6-8, 8-7, 8-6, 8-5, 8-2) = TRUE <= -50 [Nm] OR >= 50 [Nm]				
			If all of the following conditions are met:					
			During the following shifts	(1-2, 1-3, 1-4, 1-5, 2-3, 2-4, 2-5, 2-1, 2-1EB, 1EB-1, 1-1EB)				

Component / System	Fault Code	Monitor Strategy / Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
			4th gear ratio fulfilled at the beginning of the shift for 1.0 sec	= TRUE				
			Input Torque	<= -50 [Nm] OR >= 50 [Nm]				
			Applied Element Command Pressure (this condition only applies to the following shifts (1-2, 1-3, 1-4, 1-5)	> 2.5 [kg/cm^2]				
			If all of the following conditions are met:					
			During the following shifts	(5-6, 5-7, 5-8, 8-7, 8-6, 8-5)				
			6th gear ratio fulfilled at the beginning of the shift for 1.0 sec	= TRUE				
			Input Torque	<= -50 [Nm] OR >= 50 [Nm]				
			If all of the following conditions are met:					
			During the following shifts	(1-2, 1-3, 1-4, 1-5, 1EB-1, 1-1EB)				
			2nd gear ratio fulfilled at the beginning of the shift for 1.0 sec	= TRUE				
			Input Torque	<= -50 [Nm] OR >= 50 [Nm]				
			Applied Element Command Pressure (this condition only applies to the following shifts (1-2, 1-3, 1-4, 1-5)	> 2.5 [kg/cm^2]				
			If all of the following conditions are met:					
			During the following shifts	(5-6, 5-7, 5-8)				
			8th gear ratio fulfilled at the beginning of the shift for 1.0 sec	= TRUE				
			Input Torque	<= -50 [Nm] OR >= 50 [Nm]				
Lateral Acceleration Sensor Signal (Rolling Count)	P175F	Acceleration Sensor Signal message Counter Incorrect	The "Longitude/Latitude Acceleration Sensor Value Alive Rolling Count" CAN signal is not updated for a calibratable number of counts consecutively.	= 5 counts	Ignition Voltage Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory Diagnostic Service Request to Disable Normal Communication U0140 (Lost Communication with Body Control Module)	> 9000 [mV] for 3 sec continuously > 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously) = NOT PRESENT = NOT DETECTED	250 msec	No MIL "Special C"
Pressure Control Solenoid "F" Control Circuit (SL5 Solenoid)	P2734	Pressure Control Solenoid "F" Electrical	sum_ie (*) (*) The first algorithm checks the cumulative sum of the difference of the linear solenoid feedback current and commanded current. This sum, named "sum_ie", will be updated on every clock cycle of the microprocessor (10 msec). If the value of the sum becomes greater than a calibrated threshold, a malfunction will be confirmed.	> 60000 [mA]	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory Battery Voltage Linear Solenoid Feedback current Solenoid Cut Condition (*Note 3) P2738 (Pressure Control Solenoid "F" Control Circuit Low) P2739 (Pressure Control Solenoid "F" Control Circuit High) Emergency Mode (*4)	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously) > 11 [V] for [> 500 msec] < 1358 [mA] = NOT ACTIVE = NOT DETECTED = NOT DETECTED = NOT ACTIVE	1 to 3 sec cumulatively	1

Component / System	Fault Code	Monitor Strategy / Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
			ie: Difference of "commanded current" and "feedback current" ie added to "sum_ie" every 10 msec sum_ie is cleared if at least one of the following conditions are satisfied 1) Enable conditions are not satisfied 2) -50mA =< ie =< 50mA" 3) Sign of ie is changed					
			OR					
			| ie | (*)	> 50 [mA]	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously)	2 sec	1
			(*) The second algorithm checks the absolute value of the difference of the linear solenoid feedback current and commanded current over time. If the absolute value of the difference of the linear solenoid feedback current and commanded current exceeds a calibrated threshold for a calibrated period of time continuously, a malfunction will be detected. | ie |: Absolute value of ie ie: Difference between "commanded current" and "feedback current"		Battery Voltage Linear Solenoid Feedback current Solenoid Cut Condition (*Note 3) P2738 (Pressure Control Solenoid "F" Control Circuit Low) P2739 (Pressure Control Solenoid "F" Control Circuit High) Emergency Mode (*4)	> 11 [V] for [> 500 msec] < 1358 [mA] = NOT ACTIVE = NOT DETECTED = NOT DETECTED = NOT ACTIVE		
Pressure Control Solenoid "F" Control Circuit (SL5 Solenoid)	P2738	Pressure Control Solenoid "F" Control Circuit Low	Linear Solenoid Feedback Current	< 20mA	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory Solenoid Cut Condition (*Note 3) P2739 (Pressure Control Solenoid "F" Control Circuit High)	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously) = NOT ACTIVE = NOT DETECTED for [1 sec]	500 msec	1
Pressure Control Solenoid "F" Control Circuit (SL5 Solenoid)	P2739	Pressure Control Solenoid "F" Control Circuit High	Linear Solenoid Feedback Current	>= 1358mA	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory P2738 (Pressure Control Solenoid "F" Control Circuit Low)	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously) = NOT DETECTED for [1 sec]	500 msec	1
Torque Converter Clutch Pressure Control Solenoid Control Circuit (SLU Solenoid)	P2761	Torque Converter Clutch Pressure Control Solenoid Control Circuit/Open	sum_ie (*) (*) The first algorithm checks the cumulative sum of the difference of the linear solenoid feedback current and commanded current. This sum, named "sum_ie", will be updated on every clock cycle of the microprocessor (10 msec). If the	> 60000 [mA]	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory Battery Voltage Linear Solenoid Feedback current Solenoid Cut Condition (*Note 3) P2764 (Torque Converter Clutch Pressure Control Solenoid Control Circuit Low)	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously) > 11 [V] for [> 500 msec] < 1358 [mA] = NOT ACTIVE = NOT DETECTED	1 to 3 sec cumulatively	1

Component / System	Fault Code	Monitor Strategy / Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
			value of the sum becomes greater than a calibrated threshold, a malfunction will be confirmed. ie: Difference of "commanded current" and "feedback current" ie added to "sum_ie" every 10 msec sum_ie is cleared if at least one of the following conditions are satisfied 1) Enable conditions are not satisfied 2) -50mA =< ie =< 50mA 3) Sign of ie is changed		P2763 (Torque Converter Clutch Pressure Control Solenoid Control Circuit High) Emergency Mode (*4)	= NOT DETECTED = NOT ACTIVE		
			OR					
			| ie | (*) (*) The second algorithm checks the absolute value of the difference of the linear solenoid feedback current and commanded current over time. If the absolute value of the difference of the linear solenoid feedback current and commanded current exceeds a calibrated threshold for a calibrated period of time continuously, a malfunction will be detected. | ie |: Absolute value of ie ie: Difference between "commanded current" and "feedback current"	> 50 [mA]	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory Battery Voltage Linear Solenoid Feedback current Solenoid Cut Condition (*Note 3) P2764 (Torque Converter Clutch Pressure Control Solenoid Control Circuit Low) P2763 (Torque Converter Clutch Pressure Control Solenoid Control Circuit High) Emergency Mode (*4)	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously) > 11 [V] for [> 500 msec] < 1358 [mA] = NOT ACTIVE = NOT DETECTED = NOT DETECTED = NOT ACTIVE	2 sec	1
Torque Converter Clutch (TCC) Enable Solenoid (SL solenoid)	P2769	Torque Converter Clutch Circuit Low	Comparison of SL solenoid Commanded State to Actual State (*) The TCM software does not directly determine the Actual State of the solenoid. This is done by the solenoid driver hardware. The software just reads the state as ON or OFF. The solenoid driver determines the state is ON at Battery	Actual State is "OFF" when Commanded State is "ON"	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory SL Solenoid Command Time elapsed since last solenoid state change	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously) = ON > 10 msec	500 msec	2
Torque Converter Clutch (TCC) Enable Solenoid (SL solenoid)	P2770	Torque Converter Clutch Circuit High	Comparison of SL solenoid Commanded State to Actual State (*) The TCM software does not directly determine the Actual State of the solenoid. This is done by the solenoid driver hardware. The software just reads the state as ON or OFF. The solenoid driver determines the state is ON at Battery	Actual State is "ON" when Commanded State is "OFF"	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory SL Solenoid Command Time elapsed since last solenoid state change	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously) = OFF > 10 msec	500 msec	2
Anti-Lock Brake System (ABS) Module	U0121	Lost Communication with Anti-Lock Brake System (ABS) Control Module	CAN frame: "PPEI_Chassis_General_Status_1"	= NOT RECEIVED	Ignition Voltage Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory U0073 (CAN Bus-OFF) Diagnostic Service Request to Disable Normal Communication	> 9000 [mV] for 5 sec continuously > 9000 [mV] > 10.2 [V] <= 32.0 [V] (all 4 criteria for 5 [sec] continuously) = NOT DETECTED = NOT PRESENT	4 sec	No MIL "Special C"
Body Control Module (BCM)	U0140	Lost Communication with Body	CAN frame:	= NOT RECEIVED	Ignition Voltage	> 9000 [mV] for 5 sec continuously	4 sec	No MIL

15 OBDG06 TCM Summary Tables (MGG Unique)

Component / System	Fault Code	Monitor Strategy / Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
		Control Module	"PPEI_Platform_Trans_Requests"		Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory U0073 (CAN Bus-OFF) Diagnostic Service Request to Disable Normal Communication	> 9000 [mV] > 10.2 [V] <= 32.0 [V] (all 4 criteria for 5 [sec] continuously) = NOT DETECTED = NOT PRESENT		"Special C"

15 OBDG06 TCM Summary Tables (MYB Unique)

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
Mode Switch	P07CE	Transmission Mode Switch D Circuit	Tour Mode Switch state	= TRUE Boolean			>= 600 Fail Time (Sec)	Special No MIL
					Ignition Voltage Lo	>= 8.5996094 Volts		
					Ignition Voltage Hi	<= 31.999023 Volts		
					Engine Speed Lo	>= 400 RPM		
					Engine Speed Hi	<= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P1762 ECM: None		
Mode Switch	P07D1	Transmission Mode Switch E Circuit	Comfort Mode Switch state	= TRUE Boolean			>= 600 Fail Time (Sec)	Special No MIL
					Ignition Voltage Lo	>= 8.5996094 Volts		
					Ignition Voltage Hi	<= 31.999023 Volts		
					Engine Speed Lo	>= 400 RPM		
					Engine Speed Hi	<= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P1762 ECM: None		
Mode Switch	P07D4	Transmission Mode Switch F Circuit	Normal Mode Switch state	= TRUE Boolean			>= 600 Fail Time (Sec)	Special No MIL
					Ignition Voltage Lo	>= 8.5996094 Volts		
					Ignition Voltage Hi	<= 31.999023 Volts		
					Engine Speed Lo	>= 400 RPM		
					Engine Speed Hi	<= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P1762 ECM: None		
Mode 3 Multiplex Valve	P0976	Shift Solenoid BControl Circuit Low (Mode 3 Solenoid)	The HWIO reports a low voltage (ground short) error flag	= TRUE Boolean			>= 1.2 Sec out of 1.5 Sec	Two Trips
					P0976 Status is not	= Test Failed This Key On or Fault Active		
					Ignition Voltage	>= 8.5996094 Volts		
					Ignition Voltage	<= 31.999023 Volts		
					Engine Speed	>= 400 RPM		
					Engine Speed	<= 7500 RPM		

15 OBDG06 TCM Summary Tables (MYB Unique)

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required	Mil Illum.
					Engine Speed is within the allowable limits for	>=	5	Sec		
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None				

15 OBDG06 TCM Summary Tables (MYA Unique)

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
Mode Switch	P071D	Transmission Mode Switch B Circuit	Sport Mode Switch state	= TRUE Boolean			>= 600 Fail Time (Sec)	Special No MIL
					Ignition Voltage Lo	>= 8.5996094 Volts		
					Ignition Voltage Hi	<= 31.999023 Volts		
					Engine Speed Lo	>= 400 RPM		
					Engine Speed Hi	<= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		
					MIL not Illuminated for DTC's:	TCM: P1762 ECM: None		
				Disable Conditions:				
Mode Switch	P1762	Transmission Mode Switch Signal Circuit (rolling count)	Rolling count value received from BCM does not match expected value	= TRUE Boolean			>= 3 Fail Counter > 10 Sample Timer (Sec)	Special No MIL
					Pattern Switch Message Health	= TRUE Boolean		
					Engine Speed Lo	>= 400 RPM		
					Engine Speed Hi	<= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		
					MIL not Illuminated for DTC's:	TCM: None ECM: None		
				Disable Conditions:				

15 OBDG06 TCM Diagnostic 2D Tables (Common)

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	ºC
Curve	409.59	2.00	2.00	Sec

Table 3

Axis	-6.67	-6.66	40.00	ºC
Curve	409.59	4.00	4.00	Sec

Table 4

Axis	-6.67	-6.66	40.00	ºC
Curve	409.59	2.00	2.00	Sec

Table 5

Axis	-6.67	-6.66	40.00	ºC
Curve	409.59	3.00	3.00	Sec

Table 6

Axis	-6.67	-6.66	40.00	80.00	120.00	ºC
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	ºC
Curve	409.00	3.40	1.40	1.30	1.20	Sec

Table 8

Axis	-6.67	-6.66	40.00	80.00	120.00	ºC
Curve	409.00	3.60	1.60	1.50	1.40	Sec

Table 9

Axis	-6.67	-6.66	40.00	80.00	120.00	ºC
Curve	409.00	3.30	1.30	1.20	1.10	Sec

Table 10

Axis	-40.00	-20.00	0.00	30.00	110.00	ºC
Curve	3.10	1.90	1.10	0.80	0.60	Sec

Table 11

Axis	-40.00	-20.00	0.00	30.00	110.00	ºC
Curve	1.80	1.20	0.60	0.40	0.30	Sec

Table 12

Axis	-40.00	-20.00	0.00	30.00	110.00	ºC
Curve	2.20	1.40	0.90	0.70	0.40	Sec

Table 13

Axis	-40.00	-20.00	0.00	30.00	110.00	ºC
Curve	2.60	1.00	0.50	0.30	0.20	Sec

Table 14

Axis	-40.00	-20.00	0.00	30.00	110.00	ºC
Curve	3.00	0.90	0.50	0.30	0.20	Sec

Table 15

Axis	-40.00	-30.00	-20.00	-10.00	0.00	10.00	20.00	30.00	40.00	ºC
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	ºC
Curve	409.59	2.50	2.50	Sec

Table 17

Axis	-6.67	-6.66	40.00	ºC
Curve	0.40	0.35	0.30	Sec

Table 18

Axis	-40.10	-40.00	-20.00	0.00	30.00	60.00	100.00	149.00	149.10	ºC
Curve	256.00	50.00	45.00	40.00	34.00	25.00	20.00	20.00	256.00	ºC

Table 19

Axis	-40.10	-40.00	-20.00	0.00	30.00	60.00	100.00	149.00	149.10	ºC
Curve	256.00	50.00	45.00	40.00	34.00	25.00	20.00	20.00	256.00	ºC

Table 20

Axis	-40.10	-40.00	-20.00	0.00	30.00	60.00	100.00	149.00	149.10	ºC
Curve	256.00	10.00	8.00	8.00	8.00	8.00	8.00	8.00	256.00	ºC

Table 21

Axis	-40.00	-20.00	40.00	ºC
Curve	5.00	3.00	1.00	Sec

Table 22

Axis	-6.67	-6.66	40.00	ºC
Curve	8191.75	8191.75	8191.75	RPM/Sec

Table 23

Axis	-6.67	-6.66	40.00	ºC
Curve	8191.75	8191.75	8191.75	RPM/Sec