COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
Transmission Control Module (TCM)	P0601	Transmission Electro-Hydraulic Control Module Read Only Memory	Incorrect program/calibrations checksum	= TRUE Boolean			>= 5 Fail Counts	One Trip
					Ignition Voltage Lo Ignition Voltage Hi	>= 8.59961 Volts <= 18 Volts		
					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
					Ignition Voltage Lo Ignition Voltage Hi	>= 8.59961 Volts <= 18 Volts		
					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
					Ignition Voltage Lo Ignition Voltage Hi	>= 8.59961 Volts <= 18 Volts		
					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
					Ignition Voltage Lo Ignition Voltage Hi	>= 8.59961 Volts <= 18 Volts		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	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	>= 142.1015625 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 <= 31.999 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			>= 3 Fail Counts out of 5 Sample Counts	One Trip

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					P0658 Status is not	= Test Failed This Key On or Fault Active		
					High Side Driver 1 On	= 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 °C				Two Trips
			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	= TRUE Boolean		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS			TIME REQUIRED	MIL ILLUM.
					Accelerator Position Signal Valid	=	TRUE	Boolean		
					Ignition Voltage Lo	>=	8.59961	Volts		
					Ignition Voltage Hi	<=	31.999	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		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	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_Voltage DirectProp				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	>= 8.59961 Volts		
					Ignition Voltage Hi	<= 31.999 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 PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					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_Voltage DirectProp				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	>= 8.59961 Volts		
					Ignition Voltage Hi	<= 31.999 Volts		
					Engine Speed Lo	>= 400 RPM		
					Engine Speed Hi	<= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		
					P0669 Status is	≠ Test Failed This Key On or Fault Active		
					For Hybrids, below conditions must also be met			
					Estimated Motor Power Loss	>= 0 kW		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					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)	P06AC	TCM Power-up Temp Sensor Circuit Range/Performance	If TCM power-up temp to substrate temp Δ	> Refer to Table 20 in supporting documents °C				Two Trips
			If transmission oil temp to power up temp Δ	> Refer to Table 18 in supporting documents °C				
			Both conditions above required to increment fail counter				>= 3000 Fail Counts (100ms loop)	
			Note: table reference temp = to the median temp of trans oil temp, substrate temp and power up temp.				Out of 3750 Sample Counts (100ms loop)	
			Non-continuous (intermittent) fail conditions will delay resetting fail counter until				>= 700 Pass Counts (100ms loop)	
							Out of 875 Sample Counts (100ms loop)	
					Engine Torque Signal Valid	= TRUE Boolean		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS			TIME REQUIRED	MIL ILLUM.
					Accelerator Position Signal Valid	=	TRUE	Boolean		
					Ignition Voltage Lo	>=	8.59961	Volts		
					Ignition Voltage Hi	<=	31.999	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		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					P06AC 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)	P06AD	TCM power-up thermistor circuit voltage low	Power Up Temp	<= -59 ºC			>= 60 Fail Time (Sec)	Two Trips
					Ignition Voltage Lo	>= 8.59961 Volts		
					Ignition Voltage Hi	<= 31.999 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		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					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 °C			>= 60 Fail Time (Sec)	Two Trips
					Ignition Voltage Lo	>= 8.59961 Volts		
					Ignition Voltage Hi	<= 31.999 Volts		
					Engine Speed Lo	>= 400 RPM		
					Engine Speed Hi	<= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		
					P06AE Status is	≠ Test Failed This Key On or Fault Active		
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None		
Mode Switch	P071A	Transmission Mode Switch A Circuit	If Tow Haul / Winter Switch Active	= TRUE Boolean			>= 600 Fail Time (Sec)	Special No Trip
					Ignition Voltage Lo	>= 8.59961 Volts		
					Ignition Voltage Hi	<= 31.999 Volts		
					Engine Speed Lo	>= 400 RPM		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					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		
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 °C				Two Trips
			If transmission oil temp to power up temp Δ	> Refer to Table 18 in supporting documents °C				
			Both conditions above required to increment fail counter				>= 3000 Fail Counts (100ms loop)	
			Note: table reference temp = to the median temp of trans oil temp, substrate temp and power up temp.				Out of 3750 Sample Counts (100ms loop)	
			Non-continuous (intermittent) fail conditions will delay resetting fail counter until				>= 700 Pass Counts (100ms loop)	
							Out of 875 Sample Counts (100ms loop)	
					Engine Torque Signal Valid	= TRUE Boolean		
					Accelerator Position Signal Valid	= TRUE Boolean		
					Ignition Voltage Lo	>= 8.59961 Volts		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS			TIME REQUIRED	MIL ILLUM.
					Ignition Voltage Hi	<=	31.999	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		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					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_Voltage DirectProp				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	<= 31.999 Volts		
					Engine Speed Lo	>= 400 RPM		
					Engine Speed Hi	<= 7500 RPM		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Engine Speed is within the allowable limits for	>= 5 Sec		
					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_Voltage DirectProp				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	<= 31.999 Volts		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					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	>= 881.75 RPM			>= 0.8 Fail Time (Sec)	One Trip
					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	>= 0 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		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					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	<= 31.999 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	< 32.625 RPM			>= 4.5 Fail Time (Sec)	One Trip
			Fail Case 2 When P0722 DTC Status equal to Test Failed and Transmission Input Speed is	< 653.125 RPM	Controller uses a single power supply for the speed sensors	= 1 Boolean		
					Engine Torque is	>= 50 N*m		
					Engine Torque is	<= 8191.88 N*m		
					Vehicle Speed	>= 16 Kph		
					Engine Torque Signal Valid	= TRUE Boolean		
					Ignition Voltage	>= 8.59961 Volts		
					Ignition Voltage	<= 31.999 Volts		
					Engine Speed	>= 400 RPM		
					Engine Speed	<= 7500 RPM		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Engine Speed is within the allowable limits for	>= 5 Sec		
					P0717 Status is not	= Test Failed This Key On or Fault Active		
				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	>= 8.00018 Pct		
					Transmission Fluid Temperature	>= -40 °C		
					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	<= 31.999 Volts		
					Engine Speed is	>= 400 RPM		
					Engine Speed is	<= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Enable_Flags Defined Below			
					The Engine Torque Check is TRUE, if either of the two following conditions are TRUE			
					Engine Torque Condition 1			
					Shift Status is not	= complete		
					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	>= 54 N*m		
					Engine Torque is	<= 8191.75 N*m		

					The Transmission Input Speed (TIS) Check is TRUE, if either of the two following conditions are TRUE			
					TIS Check Condition 1			
					Transmission Input Speed is	>= 653.125 RPM		
					Transmission Input Speed is	<= 5350 RPM		
					TIS Check Condition 2			
					Engine Speed without the brake applied is	>= 3200 RPM		
					Engine Speed with the brake applied is	>= 3200 RPM		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Engine Speed is	<= 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	Raw Output Speed	>= 105 RPM			>= 0 Enable Time (Sec)	One Trip
			Output Speed Delta	<= 8192 RPM			>= 0 Enable Time (Sec)	
			Output Speed Drop	> 650 RPM			>= 1.5 Output Speed Drop Recover Fail Time (Sec)	

					Range_Disable	= FALSE See Below		
					OR			

					Neutral_Range_Enable	= TRUE See Below		
					And			
					Neutral_Speed_Enable	= TRUE See Below		
					are TRUE concurrently			

					Transmission_Range_Enable	= TRUE See Below		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS			TIME REQUIRED	MIL ILLUM.
					Transmission_Input_Speed_Enable	=	TRUE	See Below		
					No Change in Transfer Case Range (High <-> Low) for	>=	5	Seconds		
					P0723 Status is not	=	Test Failed This Key On or Fault Active			
					Disable this DTC if the PTO is active	=	1	Boolean		
					Ignition Voltage is	>=	8.59961	Volts		
					Ignition Voltage is	<=	31.999	Volts		
					Engine Speed is	>=	400	RPM		
					Engine Speed is	<=	7500	RPM		
					Engine Speed is within the allowable limits for	>=	5	Sec		
					Enable_Flags Defined Below					
					Transmission_Input_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 three conditions are satisfied					
					Input Speed	=	0	RPM		
					A Single Power Supply is used for all speed sensors	=	TRUE	Boolean		
					Powertrain Brake Pedal Applied is	=	FALSE	Boolean		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.

					Neutral_Range_Enable is TRUE when any of the next 3 conditions are TRUE			
					Transmission Range is	= Neutral ENUM		
					Transmission Range is	= Reverse/ Neutral Transiton al ENUM		
					Transmission Range is	= Neutral/D rive Transitio nal ENUM		
					And when a drop occurs			
					Loop to Loop Drop of Transmission Output Speed is	> 8192 RPM		

					Range_Disable is TRUE when any of the next three conditions are TRUE			
					Transmission Range is	= Park ENUM		
					Transmission Range is	= Park/Rev erse Transiton al ENUM		
					Input Clutch is not	= ON (Fully Applied) ENUM		

					Neutral_Speed_Enable is TRUE when All of the next three conditions are satsified for	> 409.594 Seconds		
					Transmission Output Speed	> 0 RPM		
					And the acceleration of the Transmission Output Speed is	< 0 RPM/ Loop Rate		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					And the acceleration of the Transmission Output Speed is ----------	> 0 RPM/ Loop Rate		
					Transmission_Range_Enable is TRUE when one of the next four conditions is TRUE			
					Transmission Range is	= Neutral ENUM		
					Transmission Range is	= Reverse/ Neutral Transitional ENUM		
					Transmission Range is	= Neutral/Drive Transitional ENUM		
					Range Change Delay Timer	>= 5 Sec		
				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
			Either Condition (A) or (B) Must be Met					
			(A) TCC Slip Error @ TCC On Mode	>= Refer to Table 1 in Supporting Documents RPM			>= 6 Fail Time (Sec)	
			(B) TCC Slip @ Lock On Mode	>= 130 RPM			>= 6 Fail Time (Sec)	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			If Above Conditions Have been Met, and Fail Timer Expired, Increment Fail Counter				>= 2 TCC Stuck Off Fail Counter	
					Ignition Voltage Lo	>= 8.59961 Volts		
					Ignition Voltage Hi	<= 31.999 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	>= 8.00018 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	>= -6.65625 °C		
					Transmission Fluid Temperature Hi	<= 130 °C		
					TCC Command Lock ON or ON mode	= TRUE Boolean		
					PTO Not Active	= TRUE Boolean		
					Engine Torque Signal Valid	= TRUE Boolean		
					Throttle Position Signal Valid	= TRUE Boolean		
					Dynamic Mode	= FALSE Boolean		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					P0741 Status is	≠ Test Failed This Key On or Fault Active		
					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	>= -50 RPM				One Trip
			TCC Slip Speed	<= 13 RPM				
							>= 2 Fail Time (Sec)	
			If Above Conditions Have been Met, and Fail Timer Expired, Increment Fail Counter				>= 6 Fail Counter	
					Run TCC Stuck On Test Enable Criteria:			
					Gear Ratio	<= 2.52515 Ratio		
					Gear Ratio	>= 2.19482 Ratio		
					Engine Speed Hi	<= 6500 RPM		
					Engine Speed Lo	>= 500 RPM		
					Vehicle Speed Hi	<= 511 KPH		
					Vehicle Speed Lo	>= 16 KPH		
					Stuck On During Upshift Enabled	= 1 Boolean		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS			TIME REQUIRED	MIL ILLUM.
					If Stuck On During Upshift is enabled (See Above), Engine Torque Must be	>=	55	Nm		
					Down Shift In Progress	=	FALSE	Boolean		
					Current Gear	≠	1st Gear Locked	Boolean		
					Engine Torque Hi	<=	8191.88	Nm		
					Engine Torque Lo	>=	80	Nm		
					Current Range	≠	Neutral	Range		
					Current Range	≠	Reverse	Range		
					Transmission Sump Temperature	<=	130	ºC		
					Transmission Sump Temperature	>=	-6.65625	ºC		
					Throttle Position Hyst High	>=	8.00018	Pct		
					Throttle Position Hyst Low	<=	2.99988	Pct		
					PTO Active	=	FALSE	Boolean		
					Disable if in D1 and value true	=	0	Boolean		
					Disable if in D2 and value true	=	0	Boolean		
					Disable if in D3 and value true	=	0	Boolean		
					Disable if in D4 and value true	=	0	Boolean		
					Disable if in D5 and value true	=	0	Boolean		
					Disable if in MUMD and value true	=	0	Boolean		
					Disable if in TUTD and value true	=	0	Boolean		
					4 Wheel Drive Active	=	FALSE	Boolean		
					Hydraulic Clutch Air Purge Active	=	FALSE	Boolean		
					Ignore Air Purge if value = true	=	0	Boolean		
					TCC Mode	=	OFF			
					Common Enables:					
					Ignition Voltage	>=	8.59961	V		
					Ignition Voltage	<=	31.999	V		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					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	= 1st Lock rpm				
			Gear Ratio	<= 1.209594727			>= 0.2 Fail Tmr	
			Gear Ratio	>= 1.094360352			= 8 Fail Counts	
			If the above parameters are true					
							≠ 0 Neutral Timer (Sec)	
							>= 0.3 Fail Timer (Sec)	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
							>= 8 Counts	
					Ignition Voltage Lo	>= 8.59961 Volts		
					Ignition Voltage Hi	<= 31.999 Volts		
					Engine Speed Lo	>= 400 RPM		
					Engine Speed Hi	<= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		
					Transmission Fluid Temperature	>= -6.65625 °C		
					Shift is Complete			
					TPS	>= 0.50049 %		
					OR			
					Output Speed	>= 0 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		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
Mode 2 Multiplex Valve	P0752	Shift Solenoid Valve A Stuck On	Gear Box Slip	>= 400 Rpm				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				
			C456/CBR1 Pressure Switch	= Pressurized Boolean				
			C456/CBR1 Pressure Switch Fault	= FALSE Boolean				
			If the above parameters are true				>= Please Refer to Table 16 in Supporting Documents Neutral Timer (Sec) >= 5 Counts	
					Ignition Voltage Lo	>= 8.59961 Volts		
					Ignition Voltage Hi	<= 31.999 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	>= 0 RPM		
					OR			
					TPS	>= 0.50049 %		
					Shift is Complete			
					Transmission Fluid Temperature	>= -6.65625 °C		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					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				One Trip
			Gear Box Slip	>= 400 RPM			>= Please Refer to Table 5 in Supporting Documents Neutral Timer (Sec)	
			Intrusive Shift to 2nd Commanded Gear Previous	= 1st Locked Gear				
			Gear Ratio	<= 2.482177734				
			Gear Ratio	>= 2.245849609				
			If the above parameters are true				>= 1 sec >= 3 counts	
					Ignition Voltage Lo	>= 8.59961 Volts		
					Ignition Voltage Hi	<= 31.999 Volts		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Engine Speed Lo	>= 400 RPM		
					Engine Speed Hi	<= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		
					Output Speed	>= 0 RPM		
					OR			
					TPS	>= 0.50049 %		
					Shift is Complete			
					Transmission Fluid Temperature	>= -6.65625 °C		
					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		
					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	= 3rd Gear				One Trip

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			Gearbox Slip	>= 400 Rpm			>= Please Refer to Table 5 in Supporting Documents Neutral Timer (Sec)	
			Intrusive Test: Command 4th Gear If attained Gear=4th gear for Time	>= Table Based Time Please Refer to Table 3 in supporting documents Enable Time (Sec)				
			It the above condiations are true, Increment 3rd gear fail counter				>= 3 3rd Gear Fail Counts	
			and C35R Fail counter				or >= 14 3-5R Clutch Fail Counts	
			Fail Case 2 Case: Steady State 5th Gear Commanded Gear	= 5th Gear				
			Gearbox Slip	>= 400 Rpm			>= Please Refer to Table 5 in Supporting Documents Neutral Timer (Sec)	
			Intrusive Test: Command 6th Gear					

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			If attained Gear=6th gear Time	>= Table Based Time Please Refer to Table 3 in supporting documents Enable Time (Sec)				
			It the above condiations are true, Increment 5th gear fail counter				>= 3 5th Gear Fail Counts	
			and C35R Fail counter				or >= 14 3-5R Clutch 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	>= 0 RPM		
					A OR B			
					(A) Output speed enable	>= 16 RPM		
					(B) Accelerator Pedal enable	>= 0.50049 Pct		
					Common Enable Criteria			
					Ignition Voltage Lo	>= 8.59961 Volts		
					Ignition Voltage Hi	<= 31.999 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	>= -6.65625 °C		
					Input Speed Sensor fault	= FALSE Boolean		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					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 If the Above is True for Time Intrusive test: (CBR1 clutch exhausted) Gear Ratio Gear Ratio If the above parameters are true	 >= 400 RPM >= Table Based Time Please Refer to Table 4 in supporting documents Enable Time (Sec) <= 1.608642578 >= 1.455444336			>= 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 PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			Fail Case 2 Case: Steady State 2nd gear Max Delta Output Speed Hysteresis Min Delta Output Speed Hysteresis If the Above is True for Time Intrusive test: (CB26 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 <= 1.608642578 >= 1.455444336			>= 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				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	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: (C1234 clutch exhausted)					
			Gear Ratio	<= 0.89465332				
			Gear Ratio	>= 0.809448242				
			If the above parameters are true				>= 1.1 Fail Timer (Sec) >= 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				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	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: (CB26 clutch exhausted)					
			Gear Ratio	<= 0.89465332			>= 1.1 Fail Timer (Sec)	
			Gear Ratio	>= 0.809448242			>= 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		
					Minimum output speed for RVT	>= 0 Nm		
					A OR B			
					(A) Output speed enable	>= 16 Nm		
					(B) Accelerator Pedal enable	>= 0.50049 Nm		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Ignition Voltage Lo	>= 8.59961 Volts		
					Ignition Voltage Hi	<= 31.999 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	>= 5.00031 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	>= -6.65625 °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				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE			SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			Primary Offgoing Clutch Pressure Command Status	=	Clutch 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)	>=	0.299804688	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)	>=	0.299804688	Fail Time (Sec)				
			fail timer 1 (3-4shifting with Closed Throttle)	>=	0.5	Fail Time (Sec)				
			fail timer 1 (3-5 shifting with Throttle)	>=	0.299804688	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)	>=	0.299804688	Fail Time (Sec)				
			fail timer 1 (5-3 shifting with Closed Throttle)	>=	0.5	Fail Time (Sec)				
			fail timer 1 (5-4 shifting with Throttle)	>=	0.299804688	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)	>=	0.299804688	Fail Time (Sec)				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			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 Fail Timer 1, and Reference Supporting Table 15 for Fail Timer 2 >= sec	
			If Attained Gear Slip is Less than Above Cal Increment Fail Timers					
			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	>= -6.65625 °C		
					Input Speed Sensor fault	= FALSE Boolean		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					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		
				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 Intrusive test: commanded 5th gear	>= 400 RPM			Please See Table 5 For Neutral Time Cal >= Neutral Timer (Sec)	One Trip

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			If attained Gear ≠5th for time	>= Table Based Time Please Refer to Table 3 in supporting documents Enable Time (Sec)				
			if the above conditions have been met					
			Increment 4th Gear Fail Counter				>= 3 4th Gear Fail Count	
							OR	
			and C456 Fail Counters				>= 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	>= Table Based Time Please Refer to Table 3 in supporting documents Enable Time (Sec)				
			if the above conditions have been met					
			Increment 5th Gear Fail Counter				>= 3 5th Gear Fail Count	
							OR	
			and C456 Fail Counters				>= 14 C456 Fail Counts	
			Fail Case 3 Case: Steady State 6th Gear					

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			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 Refer to Table 3 in supporting documents Enable 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	>= 0 RPM		
					A OR B			
					(A) Output speed enable	>= 16 RPM		
					(B) Accelerator Pedal enable	>= 0.50049 Pct		
					Common Enable Criteria			
					Ignition Voltage Lo	>= 8.59961 Volts		
					Ignition Voltage Hi	<= 31.999 Volts		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					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	>= -6.65625 °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					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)				
				Intrusive test: (CBR1 clutch exhausted)				
				Gear Ratio <= 1.209594727				
				Gear Ratio >= 1.094360352				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			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	<= 1.209594727				
			Gear Ratio	>= 1.094360352				
			If the above parameters are true				>= 1.1 Fail Timer (Sec)	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
							>= 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				
			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	<= 1.209594727				
			Gear Ratio	>= 1.094360352				
			If the above parameters are true				>= 1.1 Fail Timer (Sec) >= 3 Fail Count in 3rd Gear OR	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
							>= 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		
					Minimum output speed for RVT	>= 0 Nm		
					A OR B			
					(A) Output speed enable	>= 16 Nm		
					(B) Accelerator Pedal enable	>= 0.50049 Nm		
					Ignition Voltage Lo	>= 8.59961 Volts		
					Ignition Voltage Hi	<= 31.999 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	>= 5.00031 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	>= -6.65625 °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 PARAMETERS	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)	= TRUE Boolean				One Trip
			Primary Oncoming Clutch Pressure Command Status	= Maximum pressurized				
			Primary Offgoing Clutch Pressure Command Status	= Clutch 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 (4-1 shifting with throttle)	>= 0.299804688 Fail Time (Sec)				
			fail timer 1 (4-1 shifting without throttle)	>= 0.5 Fail Time (Sec)				
			fail timer 1 (4-2 shifting with throttle)	>= 0.299804688 Fail Time (Sec)				
			fail timer 1 (4-2 shifting without throttle)	>= 0.5 Fail Time (Sec)				
			fail timer 1 (4-3 shifting with throttle)	>= 0.299804688 Fail Time (Sec)				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			fail timer 1 (4-3 shifting without throttle)	>= 0.5 Fail Time (Sec)				
			fail timer 1 (5-3 shifting with throttle)	>= 0.299804688 Fail Time (Sec)				
			fail timer 1 (5-3 shifting without throttle)	>= 0.5 Fail Time (Sec)				
			fail timer 1 (6-2 shifting with throttle)	>= 0.299804688 Fail Time (Sec)				
			fail timer 1 (6-2 shifting without throttle)	>= 0.5 Fail Time (Sec)				
			If Attained Gear Slip is Less than Above Cal Increment Fail Timers				Total Fail Time = (Fail 1 + Fail 2) See Enable Timers for Fail Timer 1, and Reference Supporting Table 15 for Fail Timer 2 >= 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	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			5th gear fail counter				OR >= 3 Fail Counter From 5th Gear	
			6th gear fail counter				OR >= 3 Fail Counter From 6th Gear	
			Total fail counter				OR >= 5 Total Fail Counter	
					TUT Enable temperature	>= -6.65625 °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		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	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		
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	= 0 Boolean				Special No Trip
			Tap Up Switch Stuck in the Up Position in Range 2 Enabled	= 0 Boolean				
			Tap Up Switch Stuck in the Up Position in Range 3 Enabled	= 0 Boolean				
			Tap Up Switch Stuck in the Up Position in Range 4 Enabled	= 0 Boolean				
			Tap Up Switch Stuck in the Up Position in Range 5 Enabled	= 0 Boolean				
			Tap Up Switch Stuck in the Up Position in Range 6 Enabled	= 0 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	= 0 Boolean				
			Tap Up Switch ON	= TRUE Boolean			>= 1 Fail Time (Sec)	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			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	= 0 Boolean				
			Tap Up Switch Stuck in the Up Position in Park Enabled	= 0 Boolean				
			Tap Up Switch Stuck in the Up Position in Reverse Enabled	= 0 Boolean				
			Tap Up Switch ON	= TRUE Boolean				
			NOTE: Both Failcase1 and Failcase 2 Must Be Met				>= 600 Fail Time (Sec)	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Time Since Last Range Change >= 1 Enable Time (Sec) Ignition Voltage Lo >= 8.59961 Volts Ignition Voltage Hi <= 31.999 Volts Engine Speed Lo >= 400 RPM Engine Speed Hi <= 7500 RPM Engine Speed is within the allowable limits for >= 5 Sec P0815 Status is ≠ Test Failed This Key On or Fault Active			
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0816, P0826, P182E, P1876, P1877, P1915, P1761 ECM: None		
Tap Up Tap Down Switch (TUTD)	P0816	Downshift Switch Circuit	Fail Case 1 Tap Down Switch Stuck in the Down Position in Range 1 Enabled = 0 Boolean 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					Special No Trip

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			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				
			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				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			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	= TRUE Boolean				
			NOTE: Both Failcase1 and Failcase 2 Must Be Met				>= 600 sec	
					Time Since Last Range Change	>= 1	Enable Time (Sec)	
					Ignition Voltage Lo	>= 8.59961	Volts	
					Ignition Voltage Hi	<= 31.999	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 PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					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 Trip
					Ignition Voltage Lo	>= 8.59961 Volts		
					Ignition Voltage Hi	<= 31.999 Volts		
					Engine Speed Lo	>= 400 RPM		
					Engine Speed Hi	<= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		
					P0826 Status is	≠ Test Failed This Key On or Fault Active		
					Disable Conditions:	MIL not Illuminated for DTC's: TCM: P1761 ECM: None		
Transmission Fluid Pressure Switch	P0872	Transmission Fluid Pressure (TFP) Sensor C Circuit Low Voltage	CB26 Hydraulic pressure	<= 50 KPa				Special No Trip
			Hydraulic Delay Timer (Table Based)	>= See Table 8 for Delay Timer Cal Sec				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			Check for Switch to be in Exhausted Position after delay, If so then Increment Fail Counter				>= 10 Fail Counts	
			Note: Subsequent fail counts require CB26 pressure above this value to re-enable fail logic. Results in one fail count per clutch transition	> 50 Kpa				
					Transmission Fluid Temperature Lo	>= -6.65625 °C		
					Transmission Fluid Temperature Hyst Hi (disable above this)	Not >= 120 °C		
					Transmission Fluid Temperature Hyst Lo (enable below this)	<= 255.992 °C		
					Ignition Voltage Lo	>= 8.59961 Volts		
					Ignition Voltage Hi	<= 31.999 Volts		
					Engine Speed Lo	>= 400 RPM		
					Engine Speed Hi	<= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		
					Default Gear Action	= FALSE		
					High Side Driver ON	= TRUE		
					RVT Status	= Normal		
					Hydraulic Pressure Available	= TRUE		
					Engine Speed Min	>= 550 RPM		
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0711, P0712, P0713, P0716, P0717, P0722, P0723, P0751, P0742, P0756, P0757, P0973, P0974, P0976, P0977, P1915, P182E ECM: None		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
Transmission Fluid Pressure Switch	P0873	Transmission Fluid Pressure (TFP) Sensor C Circuit High Voltage	CB26 Hydraulic Pressure Hydraulic Delay Timer (Table Based) Check for Switch to be in Pressurized Position after delay, If so then Increment Fail Counter	>= 700 KPa >= See Table 8 for Delay Timer Cal Sec			>= 15 Fail Counts	Special No Trip
			Note: Subsequent fail counts require CB26 pressure below this value to re-enable fail logic. Results in one fail count per clutch transition	< 700 kpa				
					Transmission Fluid Temperature Lo Transmission Fluid Temperature Hyst Hi (disable above this) Transmission Fluid Temperature Hyst Lo (enable below this) Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for Default Gear Action High Side Driver ON RVT Status Hydraulic Pressure Available Engine Speed Min	>= -6.65625 ºC Not >= 120 ºC <= 255.992 ºC >= 8.59961 Volts <= 31.999 Volts >= 400 RPM <= 7500 RPM >= 5 Sec = FALSE = TRUE = Normal = TRUE >= 550 RPM		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0711, P0712, P0713, P0716, P0717, P0722, P0723, P0751, P0742, P0756, P0757, P0973, P0974, P0976, P0977, P1915, P182E ECM: None		
Transmission Fluid Pressure Switch	P0877	Transmission Fluid Pressure (TFP) Sensor D Circuit Low Voltage	C1234 Hydraulic pressure	<= 50 KPa				Special No Trip
			Hydraulic Delay Timer (Table Based)	>= See Table 6 for Delay Timer Cal Sec				
			Check for Switch to be in Exhausted Position after delay, If so then Increment Fail Counter				>= 5 Fail Counts	
			Note: Subsequent fail counts require C1234 pressure above this value to re-enable fail logic. Results in one fail count per clutch transition	> 50 kpa				
					Transmission Fluid Temperature Lo	>= -6.65625 °C		
					Transmission Fluid Temperature Hyst Hi (disable above this)	Not >= 120 °C		
					Transmission Fluid Temperature Hyst Lo (enable below this)	<= 255.992 °C		
					Ignition Voltage Lo	>= 8.59961 Volts		
					Ignition Voltage Hi	<= 31.999 Volts		
					Engine Speed Lo	>= 400 RPM		
					Engine Speed Hi	<= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		
					Default Gear Action	= FALSE		
					High Side Driver ON	= TRUE		
					RVT Status	= Normal		
					Hydraulic Pressure Available	= TRUE		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Engine Speed Min	>= 550 RPM		
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0711, P0712, P0713, P0716, P0717, P0722, P0723, P0751, P0742, P0756, P0757, P0973, P0974, P0976, P0977, P1915, P182E ECM: None		
Transmission Fluid Pressure Switch	P0878	Transmission Fluid Pressure (TFP) Sensor D Circuit High Voltage	C1234 Hydraulic pressure	>= 700 KPa				Special No Trip
			Hydraulic Delay Timer (Table Based)	>= See Table 6 for Delay Timer Cal Sec				
			Check for Switch to be in Pressurized Position after delay, If so then Increment Fail Counter				>= 6 Fail Counts	
			Note: Subsequent fail counts require C1234 pressure below this value to re-enable fail logic. Results in one fail count per clutch transition	< 700 Kpa				
					Transmission Fluid Temperature Lo	>= -6.65625 °C		
					Transmission Fluid Temperature Hyst Hi (disable above this)	Not >= 120 °C		
					Transmission Fluid Temperature Hyst Lo (enable below this)	<= 255.992 °C		
					Ignition Voltage Lo	>= 8.59961 Volts		
					Ignition Voltage Hi	<= 31.999 Volts		
					Engine Speed Lo	>= 400 RPM		
					Engine Speed Hi	<= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		
					Default Gear Action	= FALSE		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					High Side Driver ON = TRUE RVT Status = Normal Hydraulic Pressure Available = TRUE Engine Speed Min >= 550 RPM			
					Disable Conditions:	MIL not Illuminated for DTC's: TCM: P0711, P0712, P0713, P0716, P0717, P0722, P0723, P0751, P0742, P0756, P0757, P0973, P0974, P0976, P0977, P1915, P182E 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 >= 8.59961 Volts Ignition Voltage <= 31.999 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)	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 >= 8.59961 Volts			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Ignition Voltage	<= 31.999 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)	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	>= 8.59961 Volts		
					Ignition Voltage	<= 31.999 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)	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	<= 31.999 Volts		
					Engine Speed	>= 400 RPM		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					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	<= 31.999 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)	One Trip

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
							out of 0.375 Sample Time (Sec)	
					P0970 Status is not = Test Failed This Key On or Fault Active			
					Ignition Voltage >= 8.59961 Volts			
					Ignition Voltage <= 31.999 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 <= 31.999 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 PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
				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	<= 31.999 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	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

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					P0974 Status is not = Test Failed This Key On or Fault Active			
					Ignition Voltage >= 8.59961 Volts			
					Ignition Voltage <= 31.999 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		
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 >= 8.59961 Volts			
					Ignition Voltage <= 31.999 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		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
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	>= 8.59961 Volts		
					Ignition Voltage	<= 31.999 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		
Transmission Fluid Pressure Switch	P0989	Transmission Fluid Pressure (TFP) Sensor E Circuit Low Voltage	CBR1/C456 Hydraulic pressure	<= 50 Kpa				Special No Trip
			Hydraulic Delay Timer (Table Based)	>= See Table 9 for Delay Timer Cal Sec				
			Check for Switch to be in Exhausted Position after delay, If so then Increment Fail Counter				>= 18 Fail Counts	
			Note: Subsequent fail counts require C35R pressure above this value to re-enable fail logic. Results in one fail count per clutch transition	> 50 kpa				
					Transmission Fluid Temperature Lo	>= -6.65625 ºC		
					Transmission Fluid Temperature Hyst Hi (disable above this)	Not >= 120 ºC		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Transmission Fluid Temperature Hyst Lo (enable below this)	<= 255.992 ºC		
					Ignition Voltage Lo	>= 8.59961 Volts		
					Ignition Voltage Hi	<= 31.999 Volts		
					Engine Speed Lo	>= 400 RPM		
					Engine Speed Hi	<= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		
					Default Gear Action	= FALSE		
					High Side Driver ON	= TRUE		
					RVT Status	= Normal		
					Hydraulic Pressure Available	= TRUE		
					Engine Speed Min	>= 550 RPM		
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0711, P0712, P0713, P0716, P0717, P0722, P0723, P0751, P0742, P0756, P0757, P0973, P0974, P0976, P0977, P1915, P182E ECM: None		
Transmission Fluid Pressure Switch	P0990	Transmission Fluid Pressure (TFP) Sensor E Circuit High Voltage	CBR1/C456 Hydraulic pressure	>= 700 Kpa				Special No Trip
			Hydraulic Delay Timer (Table Based)	>= See Table 9 for Delay Timer Cal Sec				
			Check for Switch to be in Pressurized Position after delay, If so then Increment Fail Counter				>= 15 Fail Counts	
			Note: Subsequent fail counts require C35R pressure above this value to re-enable fail logic. Results in one fail count per clutch transition	< 700 kpa				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Transmission Fluid Temperature Lo	>= -6.65625 ºC		
					Transmission Fluid Temperature Hyst Hi (disable above this)	Not >= 120 ºC		
					Transmission Fluid Temperature Hyst Lo (enable below this)	<= 255.992 ºC		
					Ignition Voltage Lo	>= 8.59961 Volts		
					Ignition Voltage Hi	<= 31.999 Volts		
					Engine Speed Lo	>= 400 RPM		
					Engine Speed Hi	<= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		
					Default Gear Action	= FALSE		
					High Side Driver ON	= TRUE		
					RVT Status	= Normal		
					Hydraulic Pressure Available	= TRUE		
					Engine Speed Min	>= 550 RPM		
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0711, P0712, P0713, P0716, P0717, P0722, P0723, P0751, P0742, P0756, P0757, P0973, P0974, P0976, P0977, P1915, P182E ECM: None		
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 Trip
					Tap Up Tap Down Message Health	= TRUE Boolean		
					Engine Speed Lo	>= 400 RPM		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Engine Speed Hi	<= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None		
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 Trip
					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		
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None		
Internal Mode Switch (IMS)	P182E	Internal Mode Switch - Circuit A Low Reported as Internal Mode Switch-Invalid Range	Fail Case 1 Current range	= "Transitional 1" Range State				One Trip
			Previous range	≠ CeTRGR_e_PRNDL_Drive6 Range State				
			Previous range	≠ CeTRGR_e_PRNDL_Drive4 Range State				
			Either the S1 or S3 Pressure Switch indicates "Pressure Present"	= TRUE Boolean				
			Engine Torque	>= -50 Nm				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			Engine Torque	<= 8191.75 Nm				
			If the above conditions are present Increment Fail Timer				>= 0.225 Fail Seconds	
			If Fail Timer has Expired then Increment Fail Counter				>= 15 Fail Counts	
			Fail Case 2					
			Current range	= "Transitional 1" Range State				
			S3 Pressure Switch indicates "Exhausted"	= TRUE Boolean				
			Commanded Gear	= 1st Locked Gear				
			If the above conditions are present Increment Fail Timer				>= 0.225 Fail Seconds	
			If Fail Timer has Expired then Increment Fail Counter				>= 15 Fail Counts	
			Fail Case 3					
			Current range	= "Transitional 13"	Previous range	≠ CeTRGR_e_PRNDL_Drive 1		
			Either the S1 or S3 Pressure Switch indicates "Pressure Present"	= TRUE Boolean	Previous range	≠ CeTRGR_e_PRNDL_Drive 2		
			Engine Torque	>= -8192 Nm	IMS is 7 position configuration	= 1 Boolean		
			Engine Torque	<= 8191.75 Nm	If the "IMS 7 Position config" = 1 then the "previous range" criteria above must also be satsified when the "current range" = "Transitional 13"			
			If the above conditions are present Increment Fail Timer				>= 0.225 Seconds	
			If Fail Timer has Expired then Increment Fail Counter				>= 15 Fail Counts	
			Fail Case 4					
			Current range	= "Transitional 2" or "Transitional 8"	Disable Fail Case 4 if last positive range was Drive 6 and current range is transitional 8			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			Inhibit bit (see definition)	= FALSE	Set inihibit bit true if PRNDL = 1100 (rev) or 0100 (Rev-Neu transitional) Set inhibit bit false if PRNDL = 1001 (park)			
			Either the S1 or S3 Pressure Switch indicates "Pressure Present"	= TRUE Boolean				
			Steady State Engine Torque	>= 100 Nm				
			Steady State Engine Torque	<= 8191.75 Nm				
			If the above conditions are present Increment Fail Timer				>= 0.225 Seconds	
			If the above Condtions have been met, Increment Fail Counter				>= 15 Fail Counts	
			Fail Case 5 Current range	= "Transitional 11"				
			Engine Torque	>= -50 Nm				
			Either the S1 or S3 Pressure Switch indicates "Pressure Present"	= TRUE Boolean				
			If the above conditions are present Increment Fail Timer				>= 0.225 Seconds	
			If the above Condtions have been met, Increment Fail Counter				>= 15 Fail Counts	
			Fail Case 6					
			Current range	= "Illegal"	A Open Circuit Definition (flag set false if the following conditions are met):			
			and		Current Range	≠ "Transitional 11"		
			A Open Circuit (See Definition)	= FALSE Boolean	or			
					Last positive state	≠ Neutral		
					or			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Previous transitional state	≠ Transitional 8 and Illegal		
					and			
					PRNDL Circuit A	= Open Circuit		
					PRNDL Circuit B	= Closed Circuit		
					PRNDL Circuit C	= Open Circuit		
					PRNDL Circuit P	= Open Circuit		
			If the above Condtions are present, Increment Fail timer				>= 6.25 Seconds	
			Fail Case 7					
			Current PRNDL State	= PRNDL circuit ABCP = 1101				
			and					
			Previous valid state	= PRNDL circuit ABCP =1111	Range			
			Input Speed	>= 150	RPM			
			Reverse Trans Ratio	<= 2.845825195	ratio			
			Reverse Trans Ratio	>= 3.274169922	ratio			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			If the above Condtions are present, 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	<= 31.999 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		
					Engine Torque Signal Valid	= TRUE Boolean		
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0722, P0723 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		
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				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			Engine Speed Hi Hist	<= 480 RPM			>= 0.0688 Enable Time (Sec)	
			Then Final Engine Speed Final Transmission Input Speed	 >= 525 RPM >= 200 RPM			>= 1.25 Fail Time (Sec)	
					DTC has Ran this Key Cycle? Ignition Voltage Lo Ignition Voltage Hi Ignition Voltage Hyst High (enables above this value) Ignition Voltage Hyst Low (disabled below this value) Transmission Output Speed P1915 Status is	= FALSE Boolean >= 6 V <= 31.999 V >= 6 V <= 2 V <= 90 rpm ≠ 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	Run crank active (based on voltage thresholds below) Ignition Voltage High Hyst (run crank goes true when above this value)	= FALSE 6 Volts			>= 280 Fail Counts (25ms loop)	One Trip

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			Ignition Voltage Low Hyst (run crank goes false when below this value)	2 Volts			Out of 280 Sample Counts (25ms loop)	
					Normal CAN Comm Enabled	= TRUE Boolean		
					ECM run/crank active status	= TRUE 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					
			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	
			and CB26 Fail Count				or >= 14 CB26 Fail Count	
			Fail Case 2 Case: Steady State 6th Gear					

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			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	
			and CB26 Fail Count				or >= 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	>= 0 RPM		
					A OR B			
					(A) Output speed enable	>= 16 RPM		
					(B) Accelerator Pedal enable	>= 0.50049 Pct		
					Common Enable Criteria			
					Ignition Voltage Lo	>= 8.59961 Volts		
					Ignition Voltage Hi	<= 31.999 Volts		
					Engine Speed Lo	>= 400 RPM		
					Engine Speed Hi	<= 7500 RPM		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	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	>= -6.65625 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)	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				
			Primary Offgoing Clutch Pressure Command Status	= Clutch exhaust command				
			Range Shift Status	≠ Initial Clutch Control				
			Attained Gear Slip	<= 40 RPM				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			If above coditons are true, increment appropriate Fail 1 Timers Below:					
			fail timer 1 (2-1 shifting with throttle)	>= 0.299804688 Fail Time (Sec)				
			fail timer 1 (2-1 shifting without throttle)	>= 0.5 Fail Time (Sec)				
			fail timer 1 (2-3 shifting with throttle)	>= 0.299804688 Fail Time (Sec)				
			fail timer 1 (2-3 shifting without throttle)	>= 0.5 Fail Time (Sec)				
			fail timer 1 (2-4 shifting with throttle)	>= 0.299804688 Fail Time (Sec)				
			fail timer 1 (2-4 shifting without throttle)	>= 0.5 Fail Time (Sec)				
			fail timer 1 (6-4 shifting with throttle)	>= 0.299804688 Fail Time (Sec)				
			fail timer 1 (6-4 shifting without throttle)	>= 0.5 Fail Time (Sec)				
			fail timer 1 (6-5 shifting with throttle)	>= 0.299804688 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 PARAMETERS	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	
							OR	
			6th gear fail counter				>= 3 Fail Counter From 6th Gear	
							OR	
			total fail counter				>= 5 Total Fail Counter	
					TUT Enable temperature	>= -6.65625 °C		
					Input Speed Sensor fault	= FALSE Boolean		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					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 Attained Gear slip If the Above is True for Time Intrusive test: (CBR1 clutch exhausted) Gear Ratio Gear Ratio If the above parameters are true	>= 400 RPM >= Table Based Time Please Refer to Table 4 in supporting documents Enable Time (Sec) <= 2.482177734 >= 2.245849609				One Trip

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
							>= 1.1 Fail Timer (Sec) >= 2 Fail Count in 1st Gear or >= 3 Total Fail Counts	
			Fail Case 2 Case: Steady State 3rd 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	<= 2.482177734				
			Gear Ratio	>= 2.245849609				
			If the above parameters are true					
							>= 1.1 Fail Timer (Sec) >= 3 Fail Count in 3rd Gear or	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
							>= 3 Total Fail Counts	
			Fail Case 3 Case: Steady State 4rd 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	<= 0.700317383				
			Gear Ratio	>= 0.633666992				
			If the above parameters are true				>= 1.1 Fail Timer (Sec) >= 3 Fail Count in 4th Gear or >= 3 Total Fail Counts	
			Fail Case 4 Case: Steady State 5th Gear					

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	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	<= 0.700317383				
			Gear Ratio	>= 0.633666992				
			If the above parameters are true				>= 1.1 Fail Timer (Sec) >= 3 Fail Count in 5th 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		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Hydraulic_System_Pressurized	= TRUE Boolean		
					Minimum output speed for RVT	>= 0 Nm		
					A OR B			
					(A) Output speed enable	>= 16 Nm		
					(B) Accelerator Pedal enable	>= 0.50049 Nm		
					Ignition Voltage Lo	>= 8.59961 Volts		
					Ignition Voltage Hi	<= 31.999 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	>= 5.00031 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	>= -6.65625 °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		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
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) out of 0.375 Sample Time (Sec)	One Trip
					P2770 Status is not	= Test Failed This Key On or Fault Active		
					Ignition Voltage	>= 8.59961 Volts		
					Ignition Voltage	<= 31.999 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)	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	>= 8.59961 Volts		
					Ignition Voltage	<= 31.999 Volts		
					Engine Speed	>= 400 RPM		
					Engine Speed	<= 7500 RPM		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	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		
Variable Bleed Solenoid (VBS)	P2723	Pressure Control (PC) Solenoid E Stuck Off	Fail Case 1 Case: Steady State 1st Gear Gear slip	>= 400 RPM			Please See Table 5 For Neutral Time Cal >= Neutral Timer (Sec)	One Trip
			Intrusive test: commanded 2nd gear If attained Gear ≠ 2nd for Time	>= Table based Timer, Please See Table 3 in Supporting Documents Enable Time (Sec)				
			If Above Conditions have been met, Increment 1st gear fail counter				>= 3 1st Gear Fail Count	
			and C1234 fail counter				or >= 14 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)	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			Intrusive test: commanded 3rd gear					
			If attained Gear ≠ 3rd for Time	>= Table based Timer, Please See Table 3 in Supporting Documents Enable Time (Sec)				
			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	>= Table based Timer, Please See Table 3 in Supporting Documents Enable 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					

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			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 Timer, Please See Table 3 in Supporting Documents Enable 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	>= 0 RPM		
					A OR B			
					(A) Output speed enable	>= 16 RPM		
					(B) Accelerator Pedal enable	>= 0.50049 Pct		
					Common Enable Criteria			
					Ignition Voltage Lo	>= 8.59961 Volts		
					Ignition Voltage Hi	<= 31.999 Volts		
					Engine Speed Lo	>= 400 RPM		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					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	>= -6.65625 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)	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				
			Primary Offgoing Clutch Pressure Command Status	= Clutch exhaust command				
			Range Shift Status	≠ Initial Clutch Control				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			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)	>= 0.299804688 sec				
			fail timer 1 (2-6 shifting without throttle)	>= 0.5 sec				
			fail timer 1 (3-5 shifting with throttle)	>= 0.299804688 sec				
			fail timer 1 (3-5 shifting without throttle)	>= 0.5 sec				
			fail timer 1 (4-5 shifting with throttle)	>= 0.299804688 sec				
			fail timer 1 (4-5 shifting without throttle)	>= 0.5 sec				
			fail timer 1 (4-6 shifting with throttle)	>= 0.299804688 sec				
			fail timer 1 (4-6 shifting without throttle)	>= 0.5 sec				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	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	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			total fail counter				>= 5 Total Fail Counter	
					TUT Enable temperature	>= -6.65625 °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 Max Delta Output Speed Hysteresis	>= Table Based value Please Refer to 3D Table 1 in supporting documents rpm/sec				One Trip

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	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	<= 1.209594727				
			Gear Ratio	>= 1.094360352				
			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				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	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			>= 1.1 Fail Timer (Sec) >= 3 Fail Count in 6th Gear OR >= 3 Total Fail Counts	
			Intrusive test: (CB26 clutch exhausted)					
			Gear Ratio	<= 1.209594727				
			Gear Ratio	>= 1.094360352				
			If the above parameters are true					
					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		
					Minimum output speed for RVT	>= 0 Nm		
					A OR B			
					(A) Output speed enable	>= 16 Nm		
					(B) Accelerator Pedal enable	>= 0.50049 Nm		
					Ignition Voltage Lo	>= 8.59961 Volts		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Ignition Voltage Hi	<= 31.999 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	>= 5.00031 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	>= -6.65625 °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) out of 0.375 Sample Time (Sec)	One Trip

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	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 <= 31.999 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 <= 31.999 Volt			
					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 PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
				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	<= 31.999 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		
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 MPH out of 5 MPH	One Trip
					P2764 Status is not	= Test Failed This Key On or Fault Active		
					Ignition Voltage	>= 8.59961 Volt		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Ignition Voltage	<= 31.999 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)	One Trip
			Delay timer	>= 0.1125 sec			Out of 70 Sample Counts (≈ 11 seconds)	
					Stabilization delay	>= 3 sec		
					Power Mode	= Run		
					Ignition Voltage Lo	>= 8.59961 Volt		
					Ignition Voltage Hi	<= 31.999 Volt		
				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		
					Power Mode	= Run		
					Ignition Voltage Lo	>= 8.59961 Volt		
					Ignition Voltage Hi	<= 31.999 Volt		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: U0073 ECM: None		

Supporting Documents - 2D Tables

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	3.03	1.86	1.00	0.75	0.58	Sec

Table 11

Axis	-40.00	-20.00	0.00	30.00	110.00	ºC
Curve	1.72	1.11	0.60	0.36	0.22	Sec

Table 12

Axis	-40.00	-20.00	0.00	30.00	110.00	ºC
Curve	2.12	1.39	0.84	0.64	0.33	Sec

Table 13

Axis	-40.00	-20.00	0.00	30.00	110.00	ºC
Curve	2.51	0.95	0.50	0.29	0.13	Sec

Table 14

Axis	-40.00	-20.00	0.00	30.00	110.00	ºC
Curve	2.97	0.82	0.47	0.20	0.13	Sec

Table 15

Axis	-40.00	-30.00	-20.00	-10.00	0.00	10.00	20.00	30.00	40.00	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	1.50	1.50	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

Supporting Documents - 3D Tables

3D_Table 1

X-Axis Calibration	%
Y-Axis Calibration	ºC
Table Calibration	RPM/Sec

	0.00	2.00	5.00	25.00	100.00
-6.67	8191.75	8191.75	8191.75	8191.75	8191.75
-6.66	1125.00	1125.00	850.00	700.00	700.00
40.00	1125.00	1125.00	850.00	700.00	700.00

3D_Table 2

X-Axis Calibration	%
Y-Axis Calibration	ºC
Table Calibration	RPM/Sec

	0.00	2.00	5.00	25.00	100.00
-6.67	8191.75	8191.75	8191.75	8191.75	8191.75
-6.66	500.00	500.00	300.00	300.00	300.00
40.00	500.00	500.00	300.00	300.00	300.00

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
Transmission Fluid Temperature								
Transmission Fluid Temperature Sensor Circuit Range/Performance	P0711	This test detects performance of the transmission fluid temperature sensor by comparing changes in temperature from start up and between samples to calibration values.	For Case 1 (Stuck sensor after cold start-up) Start-up temperature change for a time AND Vehicle speed for a time For Case 2 (Stuck sensor after warm start-up) Start-up temperature change for a time AND Vehicle speed for a time For Case 3 (Noisy sensor) Change from previous temperature for in a time For Case 4 (Doesn't warm up to at least 20 deg. C) Time Enabled Criteria met	 <= 2 deg. C >= 100 seconds >= 8 KPH >= 300 seconds. <= 3 deg. C >= 100 seconds >= 8 KPH >= 300 seconds. >= 20 deg. C 14 events < 7 seconds.	All Cases No MIL-on DTCs for this drive cycle No Fault Pending DTCs for this drive cycle No Pass DTCs for this drive cycle No MIL-on DTC for this drive cycle cycle OR No Fault Active DTC Components powered AND Battery Voltage between Engine Speed between for Start-up transmission fluid temperature is available Transmission fluid temperature between ECT is not defaulted For Case 1 (Stuck sensor after cold start-up),	 P0716 P0717 P0721 P0722 P0742 P0716 P0717 P0721 P0722 P0711 P0711 P0711 9 V and 18 V 200 RPM and 7500 RPM 5 seconds -39 deg. C and 149 deg. C	Case 1: 300 seconds Case 2: 300 seconds Case 3: 7 seconds Case 4: Min. 250 seconds Case 5:	B

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			AND		Start-up transmission fluid temperature between	-40 deg. C and 21 deg. C	2 seconds	
			transmission fluid temperature	< 20 deg. C.				
					TCC Slip	>= 120 RPM	250 ms	
			Time Enabled Criteria is determined by a lookup table ranging from	250 seconds when start-up temperature is >= 20 deg. C	for a time	>= 300 seconds		
					engine coolant temperature	>= 70 deg. C		
			to	2200 seconds when start-up temperature is <= -40 deg. C.	AND			
					engine coolant temperature change from start-up	>= 15 deg. C		
			For Case 5 (Reasonableness at start-up):		For Case 2 (Stuck sensor after warm start-up),			
			At start-up (with no abnormal powerdown condition),		Start-up transmission fluid temperature between	115 deg. C and 150 deg. C.		
			engine speed	> 500 RPM				
					TCC Slip	>= 120 RPM		
			AND		for a time	>= 300 seconds		
			engine coolant temperature	> -39 deg. C	engine coolant temperature	>= 70 deg. C		
			and	< 50 deg. C	AND			
			for a time	>= 2 seconds	engine coolant temperature change from start-up	>= 55 deg. C		
			AND					
			((ABS(IAT-ECT))	<= 6 deg. C	For Case 4 (Doesn't warm up to at least 20 deg. C),			
					net engine torque	>= 150 Nm		
			AND		and	<= 1492 Nm		
					vehicle speed	>= 22 KPH		
			(ECT-TFT))	> 40 deg. C	and	<= 512 KPH		
					%throttle	>= 10.5%		
			OR		and	<= 100%		
					engine speed	>= 500 RPM		
			(ABS(IAT-ECT))	> 6 deg. C	and	<= 6500 RPM		
					engine coolant temperature	>= -39 deg. C		
			AND		and	<= 149 deg. C		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			(ECT-TFT)))	> 60 deg. C.	For Case 5 (Reasonableness at start-up): Intake Air Temperature is not defaulted			
Transmission Fluid Temperature Sensor Circuit Low Input	P0712	Out of range low.	transmission fluid temperature for a time	>=150 deg. C > 2.5 seconds.	No MIL-on DTCs for this drive cycle Components powered AND Battery Voltage between Engine Speed between for	P0711 P0712 P0713 9 V and 18 V 200 RPM and 7500 RPM 5 seconds	2.5 seconds 250 ms	B
Transmission Fluid Temperature Sensor Circuit High Input	P0713	Out of range high.	transmission fluid temperature for a time	<= -45 deg. C > 2.5 seconds	No MIL-on DTCs for this drive cycle Components powered AND Battery Voltage between Engine Speed between for IF Engine run time THEN Engine Coolant Temperature AND	P0711 P0712 P0713 9 V and 18 V 200 RPM and 7500 RPM 5 seconds <= 600 seconds must be > 20 deg. C	2.5 seconds 250 ms	B

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					not defaulted for a time	>= 20 seconds.		
Speed Sensors								
Input/Turbine Speed Sensor Circuit Range/Performance	P0716	This test detects large changes in Input Speed and noisy Input Speed by comparing to calibration values.	For Case 1: (Unrealistically large changes in input speed)		All cases		For Case 1: 0.15 s	A
			Change of Input Speed between samples	>= 800 RPM	No MIL-on DTCs for this drive cycle	P0716 P0717		
			for	>= 0.15 seconds		P0721 P0722	For Case 2: 2 s	
			For Case 2: (Noisy Input Speed)					
			For sample size	80			For Case 3:	
			IF the change in Input Speed	<= -800 RPM	No Fault Pending DTCs for this drive cycle.	P0721 P0722	1 s 25 ms	
			THEN the Low Counter is incremented.					
			IF the change in Input Speed	>= 800 RPM	Shifting complete			
			THEN the High Counter is incremented.					
					For Case 1 (Unrealistically large changes in input speed) and Case 2 (Noisy Input Speed),			
			This test fails if both the Low Counter and the High Counter	>= 5				
			OR					
			High Counter	>= 5	Input Speed	> 200 RPM		
					for	>= 0.5 seconds		
			For Case 3: (Wires to speed sensors swapped)					
					For Case 3 (Wires to speed sensors swapped),			
			Increment counter when range attained and range commanded are neutral for a time	<= 3.5 seconds	Input speed Engine speed	> 100 RPM > 100 RPM		
			AND		Hydraulic system pressurized			
			when ratio of engine speed and input speed	>= 3				
					Enables met			
			Arm test when counter	>=20	AND			
			OR		No MIL-on DTCs	P0716 P0717		
			when time	> 3.5 seconds				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					for a time	>= 0.2 seconds		
			Malfunction is reported when, for a time	> 0.5 seconds				
			the range commanded is NOT neutral					
			AND					
			the on-coming clutch control is complete					
			AND					
			input speed	> 100 RPM				
			AND					
			engine speed	< 100 RPM				
Input/Turbine Speed Sensor Circuit No Signal	P0717	This test detects unrealistically low value of input/turbine speed or unrealistically large changes in input/turbine speed.	For Case 1: (Unrealistically large change in input speed)		All Cases		1 second	A
			Failure pending if change in transmission input speed	>= 800 RPM	No MIL-on DTCs for this drive cycle	P0717	25 ms	
			For Case 2: (Unrealistically low value of input speed)		Reverse-to-Neutral shift not in process			
			Failure pending if transmission input speed	< 61 RPM	Shifting complete			
					Engine is running			
					Range attained is not neutral			
			This test fails if input speed	< 61 RPM	Transmission fluid temperature	> -25 deg. C		
			AND					
			output speed	> 500 RPM				
			for a time	> 1 second.	For Case 2: (Unrealistically low input speed)			
					No MIL-on DTCs for this drive cycle	P0731		
						P0732		
						P0733		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
						P0734 P0735 P0736 P0721 P0722		
					No Fault Pending DTCs	P0721 P0722		
					Transmission output speed	>= 150 RPM		
Output Speed Sensor Circuit Range/Performance	P0721	This test detects a noisy output speed sensor or circuit by detecting large changes in output speed.	For Case 1: (Unrealistically large change in output speed)		No MIL-on DTCs for this drive cycle	P0716 P0717 P0721 P0722	For Case 1: 0.15 s For Case 2: 2 seconds 25 ms	A
			Change in output speed	>= 500 RPM				
			for a time	>= 0.15 seconds				
			For Case 2: (Noisy output speed)					
			For sample size	80	No Fault Pending DTCs for this drive cycle	P0716 P0717		
			IF the change in output speed	<= -500 RPM				
			THEN the Low Counter is incremented.					
			IF the change in output speed	>= 500 RPM	Output Speed	> 200 RPM		
			THEN the High Counter is incremented.		for a time	>= 0.5 seconds		
			Test fails if both the Low Counter and the High Counter	>= 5	Shift complete AND range attained NOT neutral			
			OR the Low Counter	>= 5				
			OR the High Counter	>= 5				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
Output Speed Sensor Circuit No Signal	P0722	This test detects unrealistically low value of output speed or unrealistically large change in output speed.	For Case 1: (Unrealistically large change in output speed) Failure pending if change in output speed Failure sets if range attained is Neutral. For Case 2: (Unrealistically low value of output speed) Failure pending if output speed Failure sets if not monitoring for low speed neutral and output speed AND range is 3rd, 4th, or 5th for a time Failure sets if not monitoring for low speed neutral and output speed AND ((net engine torque OR net engine torque) OR (turbine speed AND range is 2nd)) for a time	 >= 600 RPM < 61 RPM < 61 RPM > 1 second < 61 RPM < -100 Nm > 100 Nm > 1500 RPM >= 4 seconds.	All Cases No MIL-on DTCs for this drive cycle. For Case 1: (Unrealistically large change in output speed) Test enabled when output speed for a time Test disabled when output speed for a time For Case 2: (Unrealistically low value of output speed) No MIL-on DTCs for this drive cycle. No Fault Pending DTCs for this drive cycle Engine is running Shift not in process	 P0721 >= 600 RPM >= 1 seconds <= 600 RPM > 1 seconds P0731 P0732 P0733 P0734 P0735 P0736 P0716 P0717 P0716 P0717	1 second 25 ms	A

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Range attained is not Neutral Reverse to Neutral shift not in process Transmission fluid temperature Transmission input speed Not waiting for Manual Selector Valve to attain forward range. PRNDL State is NOT D4, NOT Transitional D4	 > -25 deg. C >= 1050 RPM 		
Engine Speed Input Circuit Range/Performance	P0726	This test detects large changes in Engine Speed and noisy Engine Speed by comparing to calibration values.	For Case 1: (Large change in Engine Speed) Change in engine speed for a time For Case 2: (Noisy Engine Speed) For samples, if the change in engine speed then the Low Counter is incremented. If the change in engine speed then the High Counter is incremented. This test fails if both the Low Counter and the High Counter or the Low Counter or the High Counter	 >= 600 RPM >= 0.15 seconds = 80 <= -650 RPM >= 650 RPM, >= 5 >= 5	No MIL-on DTCs for this drive cycle. Engine speed for a time Shifts complete and range attained is NOT Neutral	P0716 P0717 P0726 P0727 > 600 RPM >= 1 second	For Case 1: 0.15 s For Case 2: 2 seconds 25 ms	B
Engine Speed Input Circuit No Signal	P0727	This test detects unrealistically low value of engine speed or unrealistically large change in engine speed.	Case 1: (Unrealistically large change in engine speed) Failure pending if change in engine speed	 >= 1140 RPM	All Cases: No MIL-on DTC for this drive cycle	 P0726	4 seconds	B

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			Case 2: (Unrealistically low value for engine speed)		Case 2: (Unrealistically low value for engine speed)		25 ms	
			engine speed	< 61 RPM	No MIL-on DTC for this drive cycle	P0716 P0717		
			for a time	>= 4 seconds	Turbine speed	>= 400 RPM		
					Ignition Key in RUN position			
					Ignition Key is not being cycled			
					Vehicle is not coasting with engine off.			
Range Verification								
Gear 1 Incorrect Ratio	P0731	This test verifies transmission operating ratio while 1st range is commanded by comparing computed ratio to the commanded ratio.	Pending failure occurs when accumulated event timer	>= 2 second	No MIL-on DTCs for this drive cycle.	P0877 P0878 P0721 P0722 P0716 P0717	2.25 seconds 25 ms	A
			Timer accumulates when transmission is in forward or reverse range					
			AND					
			output speed	>= 100 RPM				
			AND					
			gear slip	> 100 RPM	No Fault Pending DTC for this drive cycle.	P0717		
			In response to pending failure, a diagnostic response range is commanded.		No range switch response active			
			During this command, this test fails if Abs(Converter Slip)	>= 200 RPM	Hydraulic System Pressurized			
			for	> 10 samples.	Shift complete			
					Output speed	>= 200 RPM		
					No hydraulic default condition present			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Normal powertrain shutdown not in process Normal powertrain initialization is complete			
Gear 2 Incorrect Ratio	P0732	This test verifies transmission operating ratio while 2nd range is commanded by comparing computed ratio to the commanded ratio.	Pending failure occurs when accumulated event timer Timer accumulates when transmission is in forward or reverse range AND output speed AND gear slip In response to pending failure, a diagnostic response range is commanded. During this command, this test fails if Abs(Converter Slip) for	>= 2 second >= 100 RPM > 100 RPM >= 200 RPM > 10 samples.	No MIL-on DTCs for this drive cycle. No Fault Pending DTC for this drive cycle. No range switch response active Hydraulic System Pressurized Shift complete Output speed No hydraulic default condition present Normal powertrain shutdown not in process Normal powertrain initialization is complete	P0877 P0878 P0721 P0722 P0716 P0717 P0717 >= 200 RPM	2.25 seconds 25 ms	A
Gear 3 Incorrect Ratio	P0733	This test verifies transmission operating ratio while 3rd range is commanded by comparing computed ratio to the commanded ratio.	Pending failure occurs when accumulated event timer Timer accumulates when transmission is in forward or reverse range	>= 2 second	No MIL-on DTCs for this drive cycle.	P0877 P0878 P0721 P0722	2.25 seconds 25 ms	A

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			AND			P0716		
			output speed	>= 100 RPM		P0717		
			AND					
			gear slip	> 100 RPM	No Fault Pending DTC for this drive cycle.	P0717		
			In response to pending failure, a diagnostic response range is commanded.		No range switch response active			
			During this command, this test fails if Abs(Converter Slip)	>= 200 RPM	Hydraulic System Pressurized			
			for	> 10 samples.	Shift complete			
					Output speed	>= 200 RPM		
					No hydraulic default condition present			
					Normal powertrain shutdown not in process			
					Normal powertrain initialization is complete			
Gear 4 Incorrect Ratio	P0734	This test verifies transmission operating ratio while 4th range is commanded by comparing computed ratio to the commanded ratio.	Pending failure occurs when accumulated event timer	>= 2 second	No MIL-on DTCs for this drive cycle.	P0877	2.25 seconds	A
			Timer accumulates when transmission is in forward or reverse range			P0878	25 ms	
						P0721		
						P0722		
			AND			P0716		
			output speed	>= 100 RPM		P0717		
			AND					
			gear slip	> 100 RPM	No Fault Pending DTC for this drive cycle.	P0717		
			In response to pending failure, a diagnostic response range is commanded.					

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					No range switch response active			
			During this command, this test fails if Abs(Converter Slip)	>= 200 RPM	Hydraulic System Pressurized			
			for	> 10 samples.	Shift complete			
					Output speed	>= 200 RPM		
					No hydraulic default condition present			
					Normal powertrain shutdown not in process			
					Normal powertrain initialization is complete			
Gear 5 Incorrect Ratio	P0735	This test verifies transmission operating ratio while 5th range is commanded by comparing computed ratio to the commanded ratio.	Pending failure occurs when accumulated event timer	>= 2 second	No MIL-on DTCs for this drive cycle.	P0877	2.25 seconds	A
			Timer accumulates when transmission is in forward or reverse range			P0878	25 ms	
						P0721		
						P0722		
			AND			P0716		
			output speed	>= 100 RPM		P0717		
			AND					
			gear slip	> 100 RPM	No Fault Pending DTC for this drive cycle.	P0717		
			In response to pending failure, a diagnostic response range is commanded.					
					No range switch response active			
			During this command, this test fails if Abs(Converter Slip)	>= 200 RPM	Hydraulic System Pressurized			
			for	> 10 samples.	Shift complete			
					Output speed	>= 200 RPM		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					No hydraulic default condition present Normal powertrain shutdown not in process Normal powertrain initialization is complete			
Reverse Incorrect Ratio	P0736	This test verifies transmission range while reverse range is commanded by comparing computed ratio to the commanded ratio.	Accumulated event timer Timer accumulates when transmission is in forward or reverse range AND output speed AND gear slip	>= 2 seconds >= 100 RPM > 100 RPM	No MIL-on DTCs for this drive cycle. No Fault Pending DTC for this drive cycle. No range switch response active Hydraulic System Pressurized Shift complete Output speed No hydraulic default condition present Normal powertrain shutdown not in process Normal powertrain initialization is complete	P0877 P0878 P0721 P0722 P0716 P0717 P0717 >= 200 RPM	2 seconds 25 ms	A

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
Torque Converter Clutch								
Torque Converter Clutch Circuit Performance or Stuck Off	P0741	This test detects the torque converter being stuck off (unlocked).	TCC Slip for a time	>= 80 RPM >= 15 seconds.	No MIL-on DTCs for this drive cycle.	P2761 P2763 P2764 P0721 P0722 P0716 P0717	15 s 100 ms	B
					No Fault Pending DTCs for this drive cycle.	P2761 P2763 P2764 P0721 P0722 P0716 P0717		
					Components powered AND Battery Voltage between	 9 V and 18 V		
					Engine Speed between for	200 RPM and 7500 RPM 5 seconds		
					Must be in forward range % Throttle	 > 10 % and <= 90 %		
					Transmission fluid temperature	> 5 deg. C and < 130 deg. C		
					Time Since Range Change AND TCC apply is complete	>= 6 seconds		
					TCC pressure	>= 1000 kPa		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
Torque Converter Clutch Circuit Stuck On	P0742	This test detects the torque converter being stuck on (locked).	Case 1: (High Torque condition) Set fault pending when throttle AND net engine torque Report malfunction when fault pending exists continuously for a time	>= 70% >= 275 Nm. >= 2 seconds.	No MIL-on DTCs for this drive cycle.	P2761 P2763 P2764 P0721 P0722 P0716 P0717 P0726 P0727	Case 1 2 s Case 2 5 s Case 3 10.5 s 100 ms	B
			Case 2: (High Acceleration condition) Set fault pending when output shaft acceleration Report malfunction when fault pending exists continuously for a time	>= 100 RPM/second >= 5 seconds.	No Fault Pending DTCs for this drive cycle.	P2761 P2763 P2764 P0721 P0722 P0716 P0717 P0726 P0727		
			Case 3: (Accel/Decel/Accel condition) Report malfunction when output acceleration event is followed by output deceleration event and followed by another output acceleration event. An output acceleration event occurs when output shaft acceleration for a time	>= 40 RPM/second >= 4 seconds	Components powered AND Battery Voltage between Engine Speed between for Must be in forward range TCC is off TCC Slip	9 V and 18 V 200 RPM and 7500 RPM 5 seconds >=-20 RPM and <= 20 RPM		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			An output deceleration event occurs when output shaft acceleration is	<=-40 RPM/second	% Throttle	>= 25%		
			for a time	>= 2.5 seconds.	Net Engine Torque	>= 175 Nm		
					Engine speed	<= 3500 RPM		
					Input speed	<= 3500 RPM		
					Output speed	>= 100 RPM		
Pressure Switches								
Pressure Switch Solenoid 1 Circuit Low	P0842	This test compares the commanded valve position to the PS1 pressure switch feedback. (part of S1 valve integrity test)	Pending failure occurs when PS1 pressure switch indicates stroked for a time	> 0.08 seconds	S1 valve is destroked		100 ms 25 ms	A
					NOT Cold initialization unless transmission fluid temperature	> -25 deg. C		
					Shutdown is NOT in process			
			In response to the pending failure, S1 valve is retried by triggering S1 valve command to stroked and back to destroked. If PS1 pressure switch continues to indicate stroked, then one of three malfunction cases exists:					
			For Case 1 (electrical malfunction),					
			SS1 Circuit Low reports failure, also.	P0793				
			For Case 2 (mechanical malfunction),					
			Shift Solenoid 1 (SS1) Valve Performance – Stuck On reports failure, also.	P0752				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			For Case 3 (intermittent malfunction), SS1 valve retry attempted AND PS1 pressure switch continues to indicate stroked.	 15 times				
Shift Solenoid 1 (SS1) Valve Performance – Stuck Off	P0751	This test compares the change of state of the valve command to the change of state of the PS1 pressure switch feedback. (part of the S1 valve timeout test)	S1 valve is commanded from destroked to stroked and the PS1 pressure switch indication remains destroked for a time WITH transmission fluid temperature (Time increases as temperature decreases with maximum time at transmission fluid temperature)	>= 5 seconds >= 0 deg. C 12 seconds <= -40 deg. C	S1 valve commanded from destroked to stroked.		5 seconds 25 ms	A
Shift Solenoid 1 (SS1) Valve Performance – Stuck On	P0752	This test compares the change of state of the valve command to the change of state of the PS1 pressure switch feedback. (part of the S1 valve timeout test).	S1 valve commanded from stroked to destroked and the PS1 pressure switch indication remains stroked for a time WITH transmission fluid temperature (Time increases as temperature decreases with maximum time at transmission fluid temperature)	> 6.6 seconds >= 0 deg. C. 11 seconds <= -40 deg. C	S1 valve changes from stroked to destroked		6.6 seconds 25 ms	A

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
Pressure Switch Solenoid 1 Circuit High	P0843	This test compares the commanded valve position to the PS1 pressure switch feedback. (part of S1 valve integrity test)	Pending failure occurs when PS1 pressure switch indicates destroked for a time	> 0.07 seconds	S1 valve is stroked		70 ms 25 ms	A
			IF a main pressure dropout is suspected, then time limit increases to time	5 seconds	NOT Cold initialization unless transmission fluid temperature	> -25 deg. C		
			In response to the pending failure, S1 valve is retried by triggering S1 valve command to destroked and back to stroked. If the PS1 pressure switch continues to indicate destroked, then one of three malfunction cases exists.		Shutdown NOT in process			
			For Case 1 (electrical malfunction),					
			SS1 Control Circuit Low reports failure, also.	P0793				
			For Case 2 (mechanical malfunction),					
			Shift Solenoid 1 (SS1) Valve Performance – Stuck Off reports failure, also.	P0751				
			For Case 3 (intermittent malfunction),					
			S1 valve retry attempted	15 times				
			AND					
			PS1 pressure switch continues to indicate destroked.					

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
Pressure Switch Solenoid 2 Circuit Low	P0847	This test compares the commanded valve position to the PS2 pressure switch feedback (part of the S2 valve integrity test).	Pending failure occurs when PS2 pressure switch indicates stroked for a time	> 0.04004 seconds	S2 valve is destroked NOT Cold initialization unless transmission fluid temperature	> -25 deg. C	40 ms 25 ms	A
			In response to the pending failure, S2 valve is retried by triggering S2 valve command to stroked and back to destroked. If PS2 pressure switch continues to indicate stroked, then one of three malfunction cases exists.		Shutdown is NOT in process			
			For Case 1 (electrical malfunction), SS2 Control Circuit Low reports failure, also.	P0976				
			For Case 2 (mechanical malfunction), Shift Solenoid 2 Valve Performance – Stuck On reports failure, also.	P0757				
			For Case 3 (intermittent malfunction), S2 valve retry attempted AND PS2 pressure switch continues to indicate stroked.	2 times				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
Shift Solenoid 2 Valve Performance – Stuck Off	P0756	This test compares the change of state of the valve command to the change of state of the PS2 pressure switch feedback (part of the S2 valve timeout test).	If the S2 valve is commanded from destroked to stroked and the PS2 pressure switch indication remains destroked for a time WITH transmission fluid temperature (Time increases as temperature decreases with maximum time at transmission fluid temperature)	>= 5 seconds >= 0 deg. C. 12 seconds <= -40 deg. C.	S2 valve commanded from destroked to stroked.		5 seconds 25 ms	A
Shift Solenoid 2 Valve Performance – Stuck On	P0757	This test compares the commanded valve position to the PS2 pressure switch feedback (part of the S2 valve timeout test).	S2 valve commanded from stroked to destroked and the PS2 pressure switch does not indicate destroked for a time WITH transmission fluid temperature (Time increases as temperature decreases with maximum time at transmission fluid temperature)	>= 6.4 seconds >= 0 deg. C. 15 seconds <= -40 deg. C.	S2 valve changes from stroked to destroked		6.4 seconds 25 ms	A
Pressure Switch Solenoid 2 Circuit High	P0848	This test compares the commanded valve position to the PS2 pressure switch feedback (part of the S2 valve integrity test).	Pending failure occurs when PS2 pressure switch indicates destroked for a time IF a main pressure dropout is suspected, THEN time limit increases to time	> 0.30 seconds 5 seconds	S2 valve is stroked NOT Cold initialization unless transmission fluid temperature	> -25 deg. C	300 ms 25 ms	A

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			In response to the pending failure, S2 valve is retried by triggering S2 valve command to destroked and back to stroked. If PS2 pressure switch continues to indicate destroked, then one of three malfunction cases exists.		Shutdown NOT in process			
			For Case 1 (electrical malfunction),					
			SS2 Control Circuit Low reports failure, also.	P0976				
			For Case 2 (mechanical malfunction),					
			Shift Solenoid 2 Valve Performance – Stuck Off reports failure, also.	P0756				
			For Case 3 (intermittent malfunction),					
			S2 valve retry attempted	2 times				
			AND					
			PS2 pressure switch continues to indicate destroked.					
Pressure Switch Solenoid 3 Circuit Low	P0872	This test compares the commanded valve position to the PS3 pressure switch feedback. (part of S3 valve integrity test)	Pending failure occurs when PS3 pressure switch indicates stroked for a time	> 0.0195 seconds	S3 valve is destroked		20 ms 25 ms	A
					NOT Cold initialization unless transmission fluid temperature	> -25 deg. C		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			In response to the pending failure, S3 valve is retried by triggering S3 valve command to stroked and back to destroked. If PS3 pressure switch continues to indicate stroked, then one of three malfunction cases exists. For Case 1 (electrical malfunction), SS3 Control Circuit Low reports failure, also. For Case 2 (mechanical malfunction), Shift Solenoid 3 Valve Performance – Stuck On reports failure, also. For Case 3 (intermittent malfunction), S3 valve retry attempted AND PS3 pressure switch continues to indicate stroked.	 P0979 P0762 2 times	Shutdown is NOT in process			
Shift Solenoid 3 Valve Performance – Stuck Off	P0761	This test compares the change of state of the valve command to the change of state of the PS3 pressure switch feedback. (part of the S3 valve timeout test)	If the S3 valve is commanded from destroked to stroked and the PS3 pressure switch indication remains destroked for a time WITH transmission fluid temperature (Time increases as temperature decreases with maximum time at transmission fluid temperature)	>= 5 seconds >= 0 deg. C. 12 seconds <= -40 deg. C.	S3 valve commanded from destroked to stroked.		5 seconds 25 ms	A

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
Shift Solenoid 3 Valve Performance – Stuck On	P0762	This test compares the commanded valve position to the PS3 pressure switch feedback (part of the S3 valve timeout test).	S3 valve commanded from stroked to destroked and the PS3 pressure switch does not indicate destroked for a time WITH transmission fluid temperature (Time increases as temperature decreases with maximum time at transmission fluid temperature)	> 6.6 seconds >= 0 deg. C. 15 seconds >= -40 deg. C.	S3 valve changes from stroked to destroked		6.6 seconds 25 ms	A
Pressure Switch Solenoid 3 Circuit High	P0873	This test compares the commanded valve position to the pressure switch PS3 feedback. (part of S3 valve integrity test)	Pending failure occurs when PS3 pressure switch indicates destroked for a time IF a main pressure dropout is suspected, THEN time limit increases to time In response to the pending failure, S3 valve is retried by triggering S3 valve command to destroked and back to stroked. If PS3 pressure switch continues to indicate destroked, then one of the three malfunction cases exists. For Case 1 (electrical malfunction), SS3 Control Circuit Low reports failure, also.	> 0.30 seconds 5 seconds P0979	S3 valve is stroked NOT Cold initialization unless transmission fluid temperature Shutdown NOT in process	> -25 deg. C	300 ms 25 ms	A

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			For Case 2 (mechanical malfunction), Shift Solenoid 3 Valve Performance – Stuck Off reports failure, also. For Case 3 (intermittent malfunction), S3 valve retry attempted AND PS3 pressure switch continues to indicate destroked.	P0761 2 times				
Pressure Switch Reverse Circuit Low	P0877	This test detects Reverse Pressure Switch closed indication by comparing the Reverse Pressure Switch state to the PRNDL switch state.	Case 1: (Forward range) For a sample size PRNDL is P, D1, D2, D3, D4, D5, D6, T8, or T4 AND RPS indicates Reverse for a time Case 2: (Range indefinite) For a sample size, net engine torque AND PRNDL is indefinitely D3 or another forward range for a time	 100 samples >= 1 seconds 20 samples >= 100 Nm > 1 second	No MIL-on DTCs for this drive cycle. No Fault Pending DTCs for this drive cycle Engine is Running Components powered AND Battery Voltage between Engine Speed between for Transmission Fluid Temperature Hydraulic System Pressurized Reverse Pressure Switch State indicates REVERSE	P0877 P0878 P0708 P0708 9 V and 18 V 200 RPM and 7500 RPM 5 seconds >= 0 deg. C	5 s 50 ms	A

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
Pressure Switch Reverse Circuit High	P0878	This test detects the Reverse Pressure switch being stuck in the open position by comparing to the PRNDL switch state and detects the Reverse Pressure switch stuck open at shutdown.	For Case 1: (RPS State and PRNDL State do not agree) For sample size PRNDL is REVERSE AND RPS indicates NOT REVERSE after a time For Case 2: (RPS Shutdown Test) If RPS indicates not Reverse for a time at transmission fluid temperature This time varies with transmission fluid temperature, from time at transmission fluid temperature to time at transmission fluid temperature	 40 samples >= 1 second > 40 seconds 0 deg. C. 25 seconds > 35 deg. C 60 seconds < -20 deg. C.	For All Cases: Transmission Fluid Temperature For Case 1: (RPS State and PRNDL State do not agree) No MIL-on DTCs for this drive cycle No Fault Pending DTC for this drive cycle. Battery Voltage between No range switch response active For Case 2: (RPS Shutdown Test) Ignition Key State is NOT RUN Engine Stopped or Stalled End of Trip timer Engine had been cranking or running this drive cycle Engine speed Turbine speed Output speed	 >= 0 deg. C P0877 P0878 P0708 P0708 9 V and 18 V >= 5 seconds < 50 RPM < 50 RPM < 50 RPM	Case 1: 3 s Case 2: 60 s 50 ms	A

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
On-coming/Off-going Ratio								
Pressure Control Solenoid 1 Controlled Clutch Stuck Off	P2723	This test determines if the on-coming clutch energized by Pressure Control Solenoid 1 engages during a forward range shift.	Pending failure occurs when accumulated event timer (For rough road conditions, use) Timer accumulates when transmission is shifting, output speed AND commanded gear slip speed (For rough road conditions, use) In response of pending failure, a diagnostic response range is commanded. During this command, this test fails if ABS(Converter slip) for sample size	>= 2 seconds 2 seconds >= 60 RPM > 75 RPM 150 RPM. >= 200 RPM > 10 samples	No MIL-on DTCs for this drive cycle. Output Speed Turbine Speed Hydraulic System Pressurized Normal powertrain shutdown not in process Normal or Cold powertrain initialization is complete No range switch response active No Cold Mode operation No abusive garage shift to 1st range detected On-coming clutch control enabled Power downshift abort to previous range NOT active	P0721 P0722 P0716 P0717 P0877 P0878 >= 125 RPM >= 60 RPM	2.25 s 25 ms	A

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
Pressure Control Solenoid 2 Controlled Clutch Stuck Off	P0776	This test determines if the on-coming clutch energized by Pressure Control Solenoid 2 engages during a forward range shift.	Pending failure occurs when accumulated event timer (For rough road conditions, use) Timer accumulates when transmission is shifting, output speed AND commanded gear slip speed (For rough road conditions, use) In response of pending failure, a diagnostic response range is commanded. During this command, this test fails if ABS(Converter slip) for sample size	>= 2 seconds 2 seconds >= 60 RPM > 75 RPM 150 RPM. >= 200 RPM > 10 samples	No MIL-on DTCs for this drive cycle. Output Speed Turbine Speed Hydraulic System Pressurized Normal powertrain shutdown not in process Normal or Cold powertrain initialization is complete No range switch response active No Cold Mode operation No abusive garage shift to 1st range detected On-coming clutch control enabled Power downshift abort to previous range NOT active	P0721 P0722 P0716 P0717 P0877 P0878 >= 125 RPM >= 60 RPM	2.25 s 25 ms	A

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
Pressure Control Solenoid 1 Controlled Clutch Stuck On	P2724	This test determines if the off-going clutch energized by Pressure Control solenoid 1 remains engaged during a forward range shift.	Accumulated fail timer for forward range upshift;	>= 0.2998 seconds	No MIL-on DTCs for this drive cycle.	P0721 P0722	3 s 25 ms	A
			OR accumulated fail timer for direction change shifts;	>= 3.0 seconds		P0716 P0717		
			OR accumulated fail timer for forward range closed throttle downshift;	>= 0.500 seconds		P0877 P0878		
			OR accumulated fail timer for forward downshifts above closed throttle.	>= 1.0 second	No Fault Pending DTC for this drive cycle.	P0717		
					Output Speed	>= 200 RPM		
			Fail timer accumulates during range to range shifts when attained gear slip speed		Turbine Speed	>= 200 RPM		
				<= 25 RPM	Normal powertrain shutdown not in process			
					Normal or Cold powertrain initialization is complete			
					No range switch response active			
					No Cold Mode operation			
					No abusive garage shift to 1st range detected			
Pressure Control Solenoid 2 Controlled Clutch Stuck On	P0777	This test determines if the off-going clutch energized by Pressure Control solenoid 2 remains engaged during a forward range shift.	Accumulated fail timer for forward range upshift;	>= 0.2998 seconds	No MIL-on DTCs for this drive cycle.	P0721 P0722	3 s 25 ms	A
			OR accumulated fail timer for direction change shifts;	>= 3.0 seconds		P0716 P0717		
			OR accumulated fail timer for forward range closed throttle downshift;	>= 0.500 seconds		P0877 P0878		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			OR accumulated fail timer	>= 1.0 second	No Fault Pending DTC for this drive cycle.	P0717		
			for forward downshifts above closed throttle.					
					Output Speed	>= 200 RPM		
			Fail timer accumulates during range to range shifts when attained gear slip speed		Turbine Speed	>= 200 RPM		
				<= 25 RPM	Normal powertrain shutdown not in process			
					Normal or Cold powertrain initialization is complete			
					No range switch response active			
					No Cold Mode operation			
					No abusive garage shift to 1st range detected			
PRNDL/IMS								
Transmission Range Sensor High Input	P0708	This test monitors the transmission range switch for invalid input conditions and parity errors occurring over consecutive ignition cycles.	For Case 1 (No Information):		Components powered		Case 1:	A
			Illegal electrical state for a time	>= 1 second	AND		1 s	
					Battery Voltage between	9 V and 18 V	Case 2:	
			For Case 2 (Long-term Parity):				5^{th} occurrence	
			There are 3 counters for long-term parity. These counters are updated at the end of each drive cycle, immediately prior to TCM shutdown.		Engine Speed between	200 RPM and 7500 RPM		
					for	5 seconds	100 ms	
			For Counter 1, increment counter IF Parity Error Detected; decrement counter IF No Parity Error Detected AND No Motion Detected.					

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			IF Counter 1, THEN report failure. For Counter 2, increment counter IF Parity Error Detected AND (No Valid Drive Detected OR No Valid Park/Neutral Detected) AND Motion Detected; decrement counter IF No Parity Error Detected AND Valid Park/Neutral Detected AND Valid Drive Detected AND Motion Detected. IF Counter 2, THEN report failure. For Counter 3, increment Counter 3 IF Parity Error Detected while in Reverse AND No Valid Reverse Detected AND Motion Detected. Decrement Counter 3 IF No Parity Error Detected AND Valid Reverse Detected AND Motion Detected. IF Counter 3, THEN report failure. Where . . . . Parity Error Detected is defined as a failure of the 4-bit PRNDL input such that the sum of those bits yields an odd result for a time;	>= 15 counts >= 5 counts >= 5 counts >= 30 seconds;				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			Motion Detected is defined as output speed for a time; Valid Drive Detected is defined as the 4-bit DL indicates Valid Drive for a time; Valid Park Detected is defined as the 4-bit PRNDL indicates Valid Park for a time and output speed; Valid Reverse Detected is defined as the 4-bit PRNDL indicates Valid Reverse for a time; Valid Neutral Detected is defined as the 4-bit PRNDL indicates Valid Neutral for a time and output speed OR for a time.	>= 200 RPM >= 10 seconds >= 3 seconds >= 0.2 seconds <= 20 RPM >= 15 seconds; >= 0.2 seconds <= 20 RPM >= 3 seconds				
Transmission Range Sensor Circuit Range/Performance	P0706	This test monitors the transmission range switch inputs at engine start to determine that it is indicating a valid starting position (Park or Neutral).	For sample size, PRNDL C input is closed OR PRNDL P is NOT closed.	> 9 samples	No MIL-on DTC for this drive cycle. Battery voltage between Powertrain State is READY or CRANKING	P0706 9V and 18V	225 ms 25 ms	B

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Engine speed	> 100 RPM and < 350 RPM.		
Solenoid Electrical								
Main Modulation/Line Pressure Control Solenoid Control Circuit Open	P0960	This test detects solenoid electrical open circuit malfunctions.	Fault pending is set a single hardware fault occurrence. IF hardware fault is present for a sample size THEN initiate intrusive test by opening low side driver. IF engine is cranking or running and intrusive test indicates no short to ground exists for a sample size, THEN report malfunction.	>= 10 samples >= 3 samples	No MIL-on DTC for this drive cycle Components powered AND Battery Voltage between If Engine Cranking, then Crank Time AND Battery Voltage High side driver 1 enabled	P0657 P0658 P0659 9 V and 18 V < 4 seconds > 10 V	325 ms 25 ms	A
Main Modulation/Line Pressure Control Solenoid Control Circuit Low	P0962	This test detects solenoid electrical ground circuit malfunctions.	Fault pending is set at single electrical hardware fault to ground occurrence. IF the electrical open test is enabled and an electrical hardware fault to ground is present for a sample size, THEN initiate intrusive test by opening low side driver. IF engine is cranking or running and hardware fault is present for a sample size, THEN report malfunction.	>= 10 samples >= 2 samples	No MIL-on DTC for this drive cycle Components powered AND Battery Voltage between If Engine Cranking, then Crank Time AND Battery Voltage High side driver 1 enabled	P0657 P0658 P0659 9 V and 18 V < 4 seconds > 10 V	300 ms 25 ms	A

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
Main Modulation/Line Pressure Control Solenoid Control Circuit High	P0963	This test detects solenoid electrical short to power circuit malfunctions.	Short to power is present for a sample size,	3 consecutive samples	No MIL-on DTC for this drive cycle Components powered AND Battery Voltage between If Engine Cranking, then Crank Time AND Battery Voltage High side driver 1 enabled	P0657 P0658 P0659 9 V and 18 V < 4 seconds > 10 V	75 ms 25 ms	A
Pressure Control Solenoid 2 Control Circuit Open	P0964	This test detects solenoid electrical open circuit malfunctions.	Fault pending is set a single hardware fault occurrence. IF hardware fault is present for a sample size, THEN initiate intrusive test by opening low side driver. IF engine is cranking or running and intrusive test indicates no short to ground exists for a sample size, THEN report malfunction.	>= 6 samples >= 3 samples	No MIL-on DTC for this drive cycle Components powered AND Battery Voltage between If Engine Cranking, then Crank Time AND Battery Voltage High side driver 2 enabled	P2669 P2670 P2671 9 V and 18 V < 4 seconds > 10 V	225 ms 25 ms	A

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
Pressure Control Solenoid 2 Control Circuit Low	P0966	This test detects solenoid electrical ground circuit malfunctions.	Fault pending is set at single electrical hardware fault to ground occurrence. IF the electrical open test is enabled and an electrical hardware fault to ground is present for a sample size, THEN initiate intrusive test by opening low side driver. IF engine is cranking or running and hardware fault is present for a sample size, THEN report malfunction.	>= 6 samples >= 2 samples	No MIL-on DTC for this drive cycle Components powered AND Battery Voltage between If Engine Cranking, then Crank Time AND Battery Voltage High side driver 2 enabled	P2669 P2670 P2671 9 V and 18 V < 4 seconds > 10 V	200 ms 25 ms	A
Pressure Control Solenoid 2 Control Circuit High	P0967	This test detects solenoid electrical short to power circuit malfunctions.	Short to power is present for a sample size	3 consecutive samples	No MIL-on DTC for this drive cycle Components powered AND Battery Voltage between If Engine Cranking, then Crank Time AND Battery Voltage High side driver 2 enabled	P2669 P2670 P2671 P0967 9 V and 18 V < 4 seconds > 10 V	75 ms 25 ms	A

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
Pressure Control Solenoid 1 Control Circuit Open	P2727	This test detects solenoid electrical open circuit malfunctions.	Fault pending is set a single hardware fault occurrence. IF hardware fault is present for a sample size THEN initiate intrusive test by opening low side driver. IF engine is cranking or running and intrusive test indicates no short to ground exists for a sample size, THEN report malfunction.	 >= 5 samples >= 3 samples 	No MIL-on DTC for this drive cycle Components powered AND Battery Voltage between If Engine Cranking, then Crank Time AND Battery Voltage High side driver 1 enabled	P0657 P0658 P0659 9 V and 18 V < 4 seconds > 10 V 	200 ms 25 ms	A
Pressure Control Solenoid 1 Control Circuit Low	P2729	This test detects solenoid electrical ground circuit malfunctions.	Fault pending is set at single electrical hardware fault to ground occurrence. IF the electrical open test is enabled and an electrical hardware fault to ground is present for a sample size, THEN initiate intrusive test by opening low side driver. IF engine is cranking or running and hardware fault is present for a sample size, THEN report malfunction.	 >= 5 samples >= 2 samples 	No MIL-on DTC for this drive cycle Components powered AND Battery Voltage between If Engine Cranking, then Crank Time AND Battery Voltage High side driver 1 enabled	P0657 P0658 P0659 9 V and 18 V < 4 seconds > 10 V 	175 ms 25 ms	A

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
Pressure Control Solenoid 1 Control Circuit High	P2730	This test detects solenoid electrical short to power circuit malfunctions.	Short to power is present for a sample size	3 consecutive samples	No MIL-on DTC for this drive cycle Components powered AND Battery Voltage between If Engine Cranking, then Crank Time AND Battery Voltage High side driver 1 enabled	P0657 P0658 P0659 P2730 9 V and 18 V < 4 seconds > 10 V	75 ms 25 ms	A
Shift Solenoid 1 Control Circuit Open	P0972	This test detects solenoid electrical open circuit malfunctions.	Fault pending is set a single hardware fault occurrence. IF hardware fault is present for a sample size THEN initiate intrusive test by opening low side driver. IF engine is cranking or running and intrusive test indicates no short to ground exists for a sample size, THEN report malfunction.	>= 10 samples >= 3 samples	No MIL-on DTC for this drive cycle Components powered AND Battery Voltage between If Engine Cranking, then Crank Time AND Battery Voltage High side driver 2 enabled	P2669 P2670 P2671 9 V and 18 V < 4 seconds > 10 V	325 ms 25 ms	A

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
Shift Solenoid 1 Control Circuit Low	P0973	This test detects solenoid electrical ground circuit malfunctions.	Fault pending is set at single electrical hardware fault to ground occurrence. IF the electrical open test is enabled and an electrical hardware fault to ground is present for a sample size, THEN initiate intrusive test by opening low side driver. IF engine is cranking or running and hardware fault is present for a sample size, THEN report malfunction.	>= 10 samples >= 2 samples	No MIL-on DTC for this drive cycle Components powered AND Battery Voltage between If Engine Cranking, then Crank Time AND Battery Voltage High side driver 2 enabled	P2669 P2670 P2671 9 V and 18 V < 4 seconds > 10 V	300 ms 25 ms	A
Shift Solenoid 1 Control Circuit High	P0974	This test detects solenoid electrical short to power circuit malfunctions.	Short to power is present for a sample size	3 consecutive samples	No MIL-on DTC for this drive cycle Components powered AND Battery Voltage between If Engine Cranking, then Crank Time AND Battery Voltage High side driver 2 enabled	P2669 P2670 P2671 P0974 9 V and 18 V < 4 seconds > 10 V	75 ms 25 ms	A
Shift Solenoid 2 Control Circuit Open	P0975	This test detects solenoid electrical open circuit malfunctions.	Fault pending is set a single hardware fault occurrence. IF hardware fault is present for a sample size	>= 10 samples	No MIL-on DTC for this drive cycle	P2669 P2670 P2671	325 ms 25 ms	A

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			THEN initiate intrusive test by opening low side driver. IF engine is cranking or running and intrusive test indicates no short to ground exists for a sample size, THEN report malfunction.	 >= 3 samples	Components powered AND Battery Voltage between If Engine Cranking, then Crank Time AND Battery Voltage High side driver 2 enabled	 9 V and 18 V < 4 seconds > 10 V		
Shift Solenoid 2 Control Circuit Low	P0976	This test detects solenoid electrical ground circuit malfunctions.	Fault pending is set at single electrical hardware fault to ground occurrence. IF the electrical open test is enabled and an electrical hardware fault to ground is present for a sample size, THEN initiate intrusive test by opening low side driver. IF engine is cranking or running and hardware fault is present for a sample size, THEN report malfunction.	 >= 10 samples >= 2 samples	No MIL-on DTC for this drive cycle Components powered AND Battery Voltage between If Engine Cranking, then Crank Time AND Battery Voltage High side driver 2 enabled	P2669 P2670 P2671 9 V and 18 V < 4 seconds > 10 V	300 ms 25 ms	A
Shift Solenoid 2 Control Circuit High	P0977	This test detects solenoid electrical short to power circuit malfunctions.	Short to power is present for a sample size	3 consecutive samples	No MIL-on DTC for this drive cycle Components powered AND Battery Voltage between	P2669 P2670 P2671 P0977 9 V and 18 V	75 ms 25 ms	A

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					If Engine Cranking, then			
					Crank Time	< 4 seconds		
					AND			
					Battery Voltage	> 10 V		
					High side driver 2 enabled			
Shift Solenoid 3 Control Circuit Low	P0979	This test detects solenoid electrical ground circuit malfunctions.	Fault pending is set a single hardware fault occurrence. If engine is cranking or running and hardware fault is present for sample size,	>= 6 samples	No MIL-on DTC for this drive cycle	P2669 P2670 P2671 P0979 P0980	250 ms 25 ms	A
			then report malfunction.		Components powered			
					AND			
					Battery Voltage between	9 V and 18 V		
					If Engine Cranking, then			
					Crank Time	< 4 seconds		
					AND			
					Battery Voltage	> 10 V		
					High side driver 2 enabled			
					Commanded gear NOT Reverse, Trim, NOT 5th, NOT 6th			
Shift Solenoid 3 Control Circuit High	P0980	This test detects solenoid electrical short to power circuit malfunctions.	Short to power is present for a sample size	3 consecutive samples	No MIL-on DTC for this drive cycle	P2669 P2670 P2671 P0980	75 ms 25 ms	A

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Components powered AND Battery Voltage between If Engine Cranking, then Crank Time AND Battery Voltage High side driver 2 enabled Commanded gear NOT Reverse, Trim, NOT 5th, NOT 6th	 9 V and 18 V < 4 seconds > 10 V		
Actuator Supply 1 (HSD1) Voltage Open	P0657	This test detects if the voltage measured at the HSD1 detection circuit shows that multiple low side detection circuits indicate open, but the high side detection circuit indicates high voltage.	Report malfunction when the engine is running or cranking AND the number of failure events A failure event occurs when the number of failed solenoids connected to HSD1 AND HSD1 voltage	>= 3. >= 2 >= 6V	No MIL-on DTCs for this drive cycle HSD1 is commanded ON. Components powered AND Battery Voltage between If Engine Cranking, then Crank Time AND Battery Voltage	P0657 9 V and 18 V < 4 seconds > 10 V	75 ms 25 ms	A
Actuator Supply 1 (HSD1) Voltage Low	P0658	This test detects low voltage when high voltage is expected indicating a short to ground at the circuit.	Report malfunction when short to ground is detected for a number of events AND the engine is running or cranking	>= 3 times	No MIL-on DTC for this drive cycle HSD1 is commanded ON. Components powered	P0658	75 ms 25 ms	A

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					AND Battery Voltage between If Engine Cranking, then Crank Time AND Battery Voltage	 9 V and 18 V < 4 seconds > 10 V		
Actuator Supply 1 (HSD1) Voltage High	P0659	This test detects if the voltage measured at the HSD 1 detection circuit indicates high during initialization (when the circuit is off)	During initialization, report malfunction when the number of failure events A failure event occurs when HSD1 voltage	 >= 3 times >= 6V	During initialization		75 ms 25 ms	A
Actuator Supply2 (HSD2) Voltage Open	P2669	This test detects if the voltage measured at the HSD2 detection circuit shows that multiple low side detection circuits indicate open, but the high side detection circuit indicates high voltage.	Report malfunction when the engine is running or cranking AND the number of failure events. A failure event occurs when the number of failed solenoids connected to HSD1 AND HSD1 voltage	>= 3. >= 2 >= 6V	No MIL-on DTC for this drive cycle HSD2 is commanded ON. Components powered AND Battery Voltage between If Engine Cranking, then Crank Time AND Battery Voltage	P2669 9 V and 18 V < 4 seconds > 10 V	75 ms 25 ms	A

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
Actuator Supply2 (HSD2) Voltage Low	P2670	This test detects low voltage when high voltage is expected indicating a short to ground at the circuit.	Report malfunction when short to ground is detected for a number of events AND the engine is running or cranking.	>= 3 times	No MIL-on DTC for this drive cycle HSD2 is commanded ON. Components powered AND Battery Voltage between If Engine Cranking, then Crank Time AND Battery Voltage	P2670 9 V and 18 V < 4 seconds > 10 V	75 ms 25 ms	A
Actuator Supply 2 (HSD2) Voltage High	P2671	This test detects if the voltage measured at the HSD 2 detection circuit indicates high during initialization (when the circuit is off)	During initialization, report malfunction when the number of failure events A failure event occurs when HSD1 voltage	>= 3 times >= 6V	During initialization		75 ms 25 ms	A
TCC Pressure Control Solenoid Control Circuit Open	P2761	This test detects torque converter solenoid electrical open circuit malfunctions.	Fault pending is set a single hardware fault occurrence. IF hardware fault is present for a sample size THEN initiate intrusive test by opening low side driver. IF engine is cranking or running and intrusive test indicates no short to ground exists for a sample size, THEN report malfunction.	>= 120 samples >= 3 samples	No MIL-on DTC for this drive cycle Components powered AND Battery Voltage between If Engine Cranking, then Crank Time AND Battery Voltage High side driver 1 enabled	P0657 P0658 P0659 9 V and 18 V < 4 seconds > 10 V	3075 ms 25 ms	B
TCC Pressure	P2763	This test detects solenoid electrical short to power circuit					75 ms	B

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
Control Solenoid Control Circuit High		electrical short to power circuit malfunctions.	Short to power is present for a sample size	3 consecutive samples	No MIL-on DTC for this drive cycle Components powered AND Battery Voltage between If Engine Cranking, then Crank Time AND Battery Voltage High side driver 1 enabled	P0657 P0658 P0659 P2763 9 V and 18 V < 4 seconds > 10 V	25 ms	
TCC Pressure Control Solenoid Control Circuit Low	P2764	This test detects solenoid electrical ground circuit malfunctions.	Fault pending is set at single electrical hardware fault to ground occurrence. IF the electrical open test is enabled and an electrical hardware fault to ground is present for a sample size, THEN initiate intrusive test by opening low side driver. IF engine is cranking or running and hardware fault is present for a sample size, THEN report malfunction.	>= 120 samples >= 2 samples	No MIL-on DTC for this drive cycle Components powered AND Battery Voltage between If Engine Cranking, then Crank Time AND Battery Voltage High side driver 1 enabled	P0657 P0658 P0659 9 V and 18 V < 4 seconds > 10 V	3050 ms 25 ms	B

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
Communications								
GMLAN Bus Reset Counter Overrun	U0073	This test detects if the GMLAN bus is off for a calibration duration.	CANB_bus is off for a time	>= 3 seconds	Components powered AND Battery Voltage between Engine Speed between for	 9 V and 18 V 200 RPM and 7500 RPM 5 seconds	3 sec 100 ms	B
GMLAN ECM Controller State of Health Failure	U0100	This test detects CAN (GMLAN) bus failures by detecting State of Health failures in GMLAN message $191 from ECM.	Case 1 (x out of y): The failure counter increments when a State of Health (SOH) failure is detected. A SOH failure occurs when message is missing. When the failure counter is a number of samples out of a number of samples, report fail. Case 2 (intermittent): Report fail, when the failure counter and number of samples out of number of samples for	 >= 3 samples 5 samples > 0 counts < 3 samples 5 samples 5 consecutive sample windows	Components powered AND Battery Voltage between Engine Speed between for Ignition Key State is RUN GMLAN message $191 is received from ECM Enable criteria met for a time	 9 V and 18 V 200 RPM and 7500 RPM 5 seconds > 3 seconds	For Case 1: 500 ms For Case 2: 2.5 seconds 100 ms	B