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
				Disable Conditions:			**MIL not Illuminated for DTC's:**	TCM: P0601 ECM: None			
Transmission Control Module (TCM)	P0603	Transmission Electro-Hydraulic Control Module Long-Term Memory Reset	Non-volatile memory (static or dynamic) checksum failure at Powerup	=	TRUE	Boolean			Runs Continously		One Trip
				Disable Conditions:			**MIL not Illuminated for DTC's:**	TCM: P0603 ECM: None			
Transmission Control Module (TCM)	P0604	Transmission Electro-Hydraulic Control Module Random Access Memory	RAM Read/Write Failure (Single Word)	=	TRUE	Boolean			>= 5	Fail Counts	One Trip
									= 16	Sample Counts	
				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
				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	>=	144	°C			>= 5	Fail Time (Sec)	One Trip

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE			SECONDARY PARAMETERS	ENABLE CONDITIONS			TIME REQUIRED		MIL ILLUM.
			Fail Case 2 Substrate Temperature	>=	50	ºC					>= 2	Fail Time (Sec)	
			Ignition Voltage	>=	18	Volts							
			Note: either fail case can set the DTC										
							Ignition Voltage Lo	>=	9	Volts			
							Ignition Voltage Hi	<=	31.99	Volts			
							Substrate Temp Lo	>=	0	ºC			
							Substrate Temp Hi	<=	240	ºC			
							Substrate Temp Between Temp Range for Time	>=	0.25	Sec			
							P0634 Status is	≠	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	One Trip
											out of 5	Sample Counts	
							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	ºC							Two Trips

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS			TIME REQUIRED		MIL ILLUM.
			If TCM substrate temp to power up temp Δ	> Refer to Table 20 in supporting documents °C							
			Both conditions above required to increment fail counter Note: table reference temp = to the median temp of trans oil temp, substrate temp and power up temp.						>= 3000	Fail Counts (100ms loop)	
									Out of 4250	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	>=	9	Volts			
					Ignition Voltage Hi	<=	31.99	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	Pct			
					Transmission Input Speed	<=	200	RPM			
					Vehicle Speed	<=	8	Kph			
					Transmission Range	≠	Park				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS		TIME REQUIRED	MIL ILLUM.
					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 Hydraul ic Air Purge Event		
					Clutch used to exit brake torque active	=	CeTFT D_e_C 3_Ratl Enbl		
					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		
					P0667 Status is	≠	Test Failed This Key On or Fault Active		

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: 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_VoltageInverseProp						Two Trips
			If TCM Substrate Temperature Sensor = Direct Proportional and Temp	<=	254 ºC						
			If TCM Substrate Temperature Sensor = Indirect Proportional and Temp	>=	254 ºC						
			Either condition above will satisfy the fail conditions							>= 60	Fail Timer (Sec)
						Ignition Voltage Lo	>=	9	Volts		
						Ignition Voltage Hi	<=	31.99	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_Volt ageInversePro p								Two Trips
			If TCM Substrate Temperature Sensor = Direct Proportional and Temp	>=	-254	ºC							
			If TCM Substrate Temperature Sensor = Indirect Proportional and Temp	<=	-254	ºC							
			Either condition above will satisfy the fail conditions								>= 60	Fail Timer (Sec)	
							Ignition Voltage Lo	>=	9	Volts			
							Ignition Voltage Hi	<=	31.99	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						

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Estimated Motor Power Loss	>= 0 kW		
					Estimated Motor Power Loss greater than limit for time	>= 0 Sec		
					Lost Communication with Hybrid Processor Control Module	= FALSE		
					Estimated Motor Power Loss Fault	= FALSE		
				Disable Conditions:	**MIL not Illuminated for DTC's:**	TCM: P0716, P0717, P0722, P0723 ECM: None		
Transmission Control Module (TCM)	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 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 4250 Sample Counts (100ms loop)	
			Non-continuous (intermittent) fail conditions will delay resetting fail counter until				>= 700 Pass Counts (100ms loop)	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS		TIME REQUIRED	MIL ILLUM.
								Out of 875	Sample Counts (100ms loop)	
					Engine Torque Signal Valid	=	TRUE Boolean		
					Accelerator Position Signal Valid	=	TRUE Boolean		
					Ignition Voltage Lo	>=	9 Volts		
					Ignition Voltage Hi	<=	31.99 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 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		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE			SECONDARY PARAMETERS	ENABLE CONDITIONS			TIME REQUIRED		MIL ILLUM.
							Clutch used to exit brake torque active	=	CeTFTD_e_C3_Ratl Enbl				
							The above clutch pressure is greater than this value for one loop	>=	600	kpa			
							Set Brake Torque Active FALSE if above conditions are met for:	>=	20	Sec			
							P06AC Status is	≠	Test Failed This Key On or Fault Active				
						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	<=	-254	ºC					>= 60	Fail Time (Sec)	Two Trips
							Ignition Voltage Lo	>=	9	Volts			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE			SECONDARY PARAMETERS	ENABLE CONDITIONS			TIME REQUIRED		MIL ILLUM.
							Ignition Voltage Hi	<=	31.99	Volts			
							Engine Speed Lo	>=	400	RPM			
							Engine Speed Hi	<=	7500	RPM			
							Engine Speed is within the allowable limits for	>=	5	Sec			
							P06AD Status is	≠	Test Failed This Key On or Fault Active				
							For Hybrids, below conditions must also be met						
							Estimated Motor Power Loss	>=	0	kW			
							Estimated Motor Power Loss greater than limit for time	>=	0	Sec			
							Lost Communication with Hybrid Processor Control Module	=	FALSE				
							Estimated Motor Power Loss Fault	=	FALSE				
					Disable Conditions:	**MIL not Illuminated for DTC's:**	TCM: P0716, P0717, P0722, P0723					
							ECM: None						
Transmission Control Module (TCM)	P06AE	TCM power-up thermistor circuit voltage high	Power Up Temp	>=	254	°C					>=	60 Fail Time (Sec)	Two Trips
							Ignition Voltage Lo	>=	9	Volts			
							Ignition Voltage Hi	<=	31.99	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.
					P06AE Status is	≠ Test Failed This Key On or Fault Active		
				Disable Conditions:	**MIL not Illuminated for DTC's:**	TCM: None ECM: None		
Transmission Fluid Temperature Sensor (TFT)	P0711	Trans Fluid Temp Sensor Circuit Range/Performance	If transmission oil temp to substrate temp Δ	> Refer to Table 19 in supporting documents °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	>=	9	Volts		
					Ignition Voltage Hi	<=	31.99	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	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_Ratl Enbl			
					The above clutch pressure is greater than this value for one loop	>=	600	kpa		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Set Brake Torque Active FALSE if above conditions are met for:	>= 20 Sec		
					P0711 Status is	≠ Test Failed This Key On or Fault Active		
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0658, P0668, P0669, P06AD, P06AE, P0716, P0712, P0713, P0717, P0722, P0723, P0962, P0963, P0966, P0967, P0970, P0971, P215C, P2720, P2721, P2729, P2730 ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Transmission Fluid Temperature Sensor (TFT)	P0712	Transmission fluid temperature thermistor failed at a low voltage	Type of Sensor Used If Transmission Fluid Temperature Sensor = Direct Proportional and Temp If Transmission Fluid Temperature Sensor = Indirect Proportional and Temp	= CeTFTI_e_VoltageInverseProp <= 254 °C >= 254 °C				Two Trips

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS			TIME REQUIRED		MIL ILLUM.
			Either condition above will satisfy the fail conditions						>=	60	Fail Time (Sec)	
					Ignition Voltage Lo	>=	9	Volts			
					Ignition Voltage Hi	<=	31.99	Volts			
					Engine Speed Lo	>=	400	RPM			
					Engine Speed Hi	<=	7500	RPM			
					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_Volt ageInversePro p							Two Trips
			If Transmission Fluid Temperature Sensor = Direct Proportional and Temp	>= -254 ℃							
			If Transmission Fluid Temperature Sensor = Indirect Proportional and Temp	<= -254 ℃							

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE			SECONDARY PARAMETERS	ENABLE CONDITIONS			TIME REQUIRED		MIL ILLUM.
			Either condition above will satisfy the fail conditions								>= 60	Fail Time (Sec)	
							Ignition Voltage Lo	>=	9	Volts			
							Ignition Voltage Hi	<=	31.99	Volts			
							Engine Speed Lo	>=	400	RPM			
							Engine Speed Hi	<=	7500	RPM			
							Engine Speed is within the allowable limits for	>=	5	Sec			
							P0713 Status is	≠	Test Failed This Key On or Fault Active				
				Disable Conditions:		**MIL not Illuminated for DTC's:**	TCM: P0713, P0716, P0717, P0722, P0723						
							ECM: None						
Transmission Input Speed Sensor (TISS)	P0716	Input Speed Sensor Performance	Transmission Input Speed Sensor Drops	>=	1350	RPM					>= 0.8	Fail Time (Sec)	One Trip
							Engine Torque is	>=	0	N*m			
							Engine Torque is	<=	8191.9	N*m			
							Engine Speed	>=	400	RPM			
							Engine Speed	<=	7500	RPM			
							Engine Speed is within the allowable limits for	>=	5	Sec			
							Vehicle Speed is	>=	10	Kph			
							Throttle Position is	>=	0	Pct			

							Transmission Input Speed is	>=	0	RPM			
							The previous requirement has been satisfied for	>=	0	Sec			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE			SECONDARY PARAMETERS	ENABLE CONDITIONS			TIME REQUIRED		MIL ILLUM.
							The change (loop to loop) in transmission input speed is	<	8191.8	RPM/Loop			
							The previous requirement has been satisfied for	>=	0	Sec			
							Throttle Position Signal Valid	=	TRUE	Boolean			
							Engine Torque Signal Valid	=	TRUE	Boolean			
							Ignition Voltage	>=	9	Volts			
							Ignition Voltage	<=	31.99	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	<	50	RPM					>= 4.5	Fail Time (Sec)	One Trip
			Fail Case 2 When P0722 DTC Status equal to Test Failed and Transmission Input Speed is	<	1000	RPM	Controller uses a single power supply for the speed sensors	=	1	Boolean			
							Engine Torque is	>=	50	N*m			
							Engine Torque is	<=	8191.9	N*m			
							Vehicle Speed	>=	16	Kph			
							Engine Torque Signal Valid	=	TRUE	Boolean			
							Ignition Voltage	>=	9	Volts			
							Ignition Voltage	<=	31.99	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.
							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	>=	8.0002 Pct			
							Transmission Fluid Temperature	>=	-40 ℃			
							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	>=	9 Volts			
							Ignition Voltage is	<=	31.99 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					

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS			TIME REQUIRED	MIL ILLUM.
					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	>=	8191.8	N*m		
					Engine Torque is	<=	8191.8	N*m		
					Engine Torque Condition 2					
					Engine Torque is	>=	30	N*m		
					Engine Torque is	<=	8191.8	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	>=	1000	RPM		
					Transmission Input Speed is	<=	8191.8	RPM		
					TIS Check Condition 2					
					Engine Speed without the brake applied is	>=	3200	RPM		
					Engine Speed with the brake applied is	>=	3200	RPM		
					Engine Speed is	<=	8191.8	RPM		
					Controller uses a single power supply for the speed sensors	=	1	Boolean		
					Powertrain Brake Pedal is Valid	=	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, 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	<=	8191.75	RPM					>=	0	Enable Time (Sec)	
			Output Speed Drop	>	1000	RPM					>=	3	Output Speed Drop Recover Fail Time (Sec)	
							-------------------- Range_Disable OR -------------------- Neutral_Range_Enable And Neutral_Speed_Enable are TRUE concurrently --------------------	= FALSE See Below = TRUE See Below = TRUE See Below						
							Transmission_Range_Enable Transmission_Input_Speed_ Enable No Change in Transfer Case Range (High <-> Low) for	= TRUE See Below = TRUE See Below >= 5 Seconds						

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS		TIME REQUIRED	MIL ILLUM.
					P0723 Status is not	=	Test Failed This Key On or Fault Active		
					Disable this DTC if the PTO is active	=	1 Boolean		
					Ignition Voltage is	>=	9 Volts		
					Ignition Voltage is	<=	31.99 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 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		

					Neutral_Range_Enable is TRUE when any of the next 3 conditions are TRUE				
					Transmission Range is	=	Neutral ENUM		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS		TIME REQUIRED	MIL ILLUM.
					Transmission Range is	=	Reverse/Neutral Transitonal ENUM		
					Transmission Range is	=	Neutral/ Drive Transitional ENUM		
					And when a drop occurs Loop to Loop Drop of Transmission Output Speed is ----------------------	>	650 RPM		
					Range_Disable is TRUE when any of the next three conditions are TRUE				
					Transmission Range is	=	Park ENUM		
					Transmission Range is	=	Park/Reverse Transitonal ENUM		
					Input Clutch is not ----------------------	=	ON (Fully Applied) ENUM		
					Neutral_Speed_Enable is TRUE when All of the next three conditions are satsified for	>	1 Seconds		
					Transmission Output Speed	>	100 RPM		
					And the acceleration of the Transmission Output Speed is	<	500 RPM/Loop Rate		
					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.
							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	>=	500	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					>=	5 Fail Time (Sec)	
			(B) TCC Slip @ Lock On Mode	>=	130	RPM					>=	5 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						>=	6	TCC Stuck Off Fail Counter
					Ignition Voltage Lo	>=	9	Volts			
					Ignition Voltage Hi	<=	31.99	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	<=	8191.9	N*m			
					Throttle Position Lo	>=	8.0002	Pct			
					Throttle Position Hi	<=	99.998	Pct			
					2nd Gear Ratio Lo	>=	2.7528	Ratio			
					2nd Gear Ratio High	<=	3.1672	Ratio			
					3rd Gear Ratio Lo	>=	1.7762	Ratio			
					3rd Gear Ratio High	<=	2.0437	Ratio			
					4th Gear Ratio Lo	>=	1.3485	Ratio			
					4th Gear Ratio High	<=	1.5515	Ratio			
					5th Gear Ratio Lo	>=	0.9301	Ratio			
					5th Gear Ratio Hi	<=	1.0699	Ratio			
					6th Gear Ratio Lo	>=	0.6975	Ratio			
					6th Gear Ratio High	<=	0.8025	Ratio			
					Transmission Fluid Temperature Lo	>=	-7	ºC			
					Transmission Fluid Temperature Hi	<=	130	ºC			
					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			
							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	<=	30	RPM							
											>=	1.2	Fail Time (Sec)
			If Above Conditions Have been Met, and Fail Timer Expired, Increment Fail Counter								>=	5	Fail Counter
							Run TCC Stuck On Test Enable Criteria:						
							Gear Ratio	<=	3.1715	Ratio			
							Gear Ratio	>=	2.7565	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	>=	50 Nm		
					Down Shift In Progress	=	FALSE Boolean		
					Current Gear	≠	1st Gear Locked Boolean		
					Engine Torque Hi	<=	8191.9 Nm		
					Engine Torque Lo	>=	80 Nm		
					Current Range	≠	Neutral Range		
					Current Range	≠	Reverse Range		
					Transmission Sump Temperature	<=	130 °C		
					Transmission Sump Temperature	>=	-7 °C		
					Throttle Position Hyst High	>=	10 Pct		
					Throttle Position Hyst Low	<=	2.9999 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	>=	9 V		
					Ignition Voltage	<=	31.99 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	<=	1.529052734						>=	0.3	Fail Tmr	
			Gear Ratio	>=	1.328979492						=	5	Fail Counts	
			If the above parameters are true								≠	0	Neutral Timer (Sec)	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS			TIME REQUIRED		MIL ILLUM.
									>= 0.3	Fail Timer (Sec)	
									>= 8	Counts	
					Ignition Voltage Lo	>=	9	Volts			
					Ignition Voltage Hi	<=	31.99	Volts			
					Engine Speed Lo	>=	400	RPM			
					Engine Speed Hi	<=	7500	RPM			
					Engine Speed is within the allowable limits for	>=	5	Sec			
					Transmission Fluid Temperature	>=	-6.656	ºC			
					Shift is Complete						
					TPS	>=	0.5005	%			
					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	>=	9	Volts		
							Ignition Voltage Hi	<=	31.99	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	>=	0.5005	%		
							Shift is Complete					

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Transmission Fluid Temperature	>= -6.656 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)	P0776	Pressure Control (PC) Solenoid B Stuck Off [C35R]	<u>Fail Case 1</u> Case: Steady State 3rd Gear Commanded Gear Gearbox Slip Intrusive Test: Command 4th Gear If attained Gear=4th gear for Time	 = 3rd Gear >= 400 Rpm >= Table Based Time Please Refer to Table 3 in supporting documents Enable Time (Sec)			>= Please Refer to Table 5 in Supporting Documents Neutral Timer (Sec)	One Trip

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			It the above condiations are true, Increment 3rd gear fail counter				>= 2	3rd Gear Fail Counts
			and C35R Fail counter				>= 14	or 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					
			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				>= 14	or 3-5R Clutch Fail Counts
					PRNDL State defaulted = FALSE Boolean inhibit RVT = FALSE Boolean			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS			TIME REQUIRED	MIL ILLUM.
					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	>=	650	RPM		
					(B) Accelerator Pedal enable	>=	0.5005	Pct		
					Common Enable Criteria					
					Ignition Voltage Lo	>=	9	Volts		
					Ignition Voltage Hi	<=	31.99	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	>=	-6.656	°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)	P0777	Pressure Control (PC) Solinoid B Stuck On [C35R] (Steady State)	<u>Fail Case 1</u> 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	<= 2.007324219						
			Gear Ratio	>= 1.744628906						
			If the above parameters are true							
								>= 1.1	Fail Timer (Sec)	
								>= 2	Fail Count in 1st Gear	
									or	
								>= 3	Total Fail Counts	
			<u>Fail Case 2</u> Case: Steady State 2nd gear							
			Max Delta Output Speed Hysteresis	>= Table Based value Please Refer to 3D Table 1 in supporting documents	rpm/sec					
			Min Delta Output Speed Hysteresis	>= Table Based value Please Refer to 3D Table 2 in supporting documents	rpm/sec					

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	<=	2.007324219					
			Gear Ratio	>=	1.744628906					
			If the above parameters are true					>= 1.1	Fail Timer (Sec)	
								>= 3	Fail Count in 2nd Gear	
									or	
								>= 3	Total Fail Counts	
			Fail Case 3 Case: Steady State 4th gear							
			Max Delta Output Speed Hysteresis	>=	Table Based value Please Refer to 3D Table 1 in supporting documents rpm/sec					
			Min Delta Output Speed Hysteresis	>=	Table Based value Please Refer to 3D Table 2 in supporting documents rpm/sec					
			If the Above is True for Time	>=	Table Based Time Please Refer to Table 17 in supporting documents Sec					

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE		SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED		MIL ILLUM.
			Intrusive test: (C1234 clutch exhausted)							
			Gear Ratio	<=	1.069946289					
			Gear Ratio	>=	0.930053711					
			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				
			If the Above is True for Time	>=	Table Based Time Please Refer to Table 17 in supporting documents	Sec				
			Intrusive test: (CB26 clutch exhausted)							

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS			TIME REQUIRED			MIL ILLUM.
			Gear Ratio	<= 1.069946289					>=	1.1	Fail Timer (Sec)	
			Gear Ratio	>= 0.930053711					>=	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	>=	650	Nm				
					(B) Accelerator Pedal enable	>=	0.5005	Nm				
					Ignition Voltage Lo	>=	9	Volts				
					Ignition Voltage Hi	<=	31.99	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.
					if Attained Gear=1st FW Accelerator Pedal enable	>= 10.001 Pct		
					if Attained Gear=1st FW Engine Torque Enable	>= 45 Nm		
					if Attained Gear=1st FW Engine Torque Enable	<= 8191.9 Nm		
					Transmission Fluid Temperature	>= -6.656 °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				
			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 the above conditions are true run appropriate Fail 1 Timers Below:						
			fail timer 1 (3-1 shifting with Closed Throttle)	>=	0.900390625 Fail Time (Sec)				
			fail timer 1 (3-2 shifting with Throttle)	>=	0.700195313 Fail Time (Sec)				
			fail timer 1 (3-2 shifting with Closed Throttle)	>=	0.900390625 Fail Time (Sec)				
			fail timer 1 (3-4 shifting with Throttle)	>=	0.700195313 Fail Time (Sec)				
			fail timer 1 (3-4shifting with Closed Throttle)	>=	0.900390625 Fail Time (Sec)				
			fail timer 1 (3-5 shifting with Throttle)	>=	0.700195313 Fail Time (Sec)				
			fail timer 1 (3-5 shifting with Closed Throttle)	>=	0.900390625 Fail Time (Sec)				
			fail timer 1 (5-3 shifting with Throttle)	>=	0.700195313 Fail Time (Sec)				
			fail timer 1 (5-3 shifting with Closed Throttle)	>=	0.900390625 Fail Time (Sec)				
			fail timer 1 (5-4 shifting with Throttle)	>=	0.700195313 Fail Time (Sec)				
			fail timer 1 (5-4 shifting with Closed Throttle)	>=	0.900390625 Fail Time (Sec)				
			fail timer 1 (5-6 shifting with Throttle)	>=	0.700195313 Fail Time (Sec)				
			fail timer 1 (5-6 shifting with Closed Throttle)	>=	0.900390625 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 sec 1, and Reference Supporting Table 15 for Fail Timer 2	
			If fail timer is greater than threshold increment corresponding gear fail counter and total fail counter					
			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	>= -6.672 ºC		
					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	>=	200	RPM				
							input speed limit for TUT	>=	200	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							
Transmission Output Speed Sensor (TOSS)	P077C	Output Speed Sensor Circuit Low	TOSS Analog Signal Voltage	<=	0.25	Volts					>=	0.05	sec	One Trip
			P077C Status is not	=	Test Failed This Key On or Fault Active									
			If the above conditons have been met, increment the P077C Fail Counter											
			DTC P077C Sets when the Fail Counter	>=	75	Counts								
							P077C Enable Calibration	=	1	Boolean				
							Ignition Voltage Lo	>=	9	Volts				
							Ignition Voltage Hi	<=	31.99	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: P077D						
Transmission Output Speed Sensor (TOSS)	P077D	Output Speed Sensor Circuit High	TOSS Analog Signal Voltage	<=	4.75	Volts					>=	0.05	sec	One Trip
			P077D Status is not	=	Test Failed This Key On or Fault Active									
			If the above conditons have been met, increment the P077D Fail Counter											
			DTC P077D Sets when the Fail Counter	>=	75	Counts								
							P077D Enable Calibration	=	1	Boolean				
							Ignition Voltage Lo	>=	9	Volts				
							Ignition Voltage Hi	<=	31.99	Volts				
					Disable Conditions:		**MIL not Illuminated for DTC's:**	TCM: P077C						
Variable Bleed Solenoid (VBS)	P0796	Pressure Control (PC) Solenoid C Stuck Off [C456] (Steady State)	Fail Case 1 Case: Steady State 4th Gear											One Trip
			Gear slip	>=	400	RPM					>=	Please See Table 5 For Neutral Time Cal	Neutral Timer (Sec)	
			Intrusive test: commanded 5th gear											

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					>= 2	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					>= 2	5th Gear Fail Count	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			and C456 Fail Counters				OR >= 14 C456 Fail Counts	
			Fail Case 3 Case: Steady State 6th Gear					
			Gear slip	>= 400 RPM			>= Please See Table 5 For Neutral Time Cal Neutral Timer (Sec)	
			Intrusive test: commanded 5th gear					
			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				>= 2 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			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS			TIME REQUIRED	MIL ILLUM.
					(A) Output speed enable	>=	650	RPM		
					(B) Accelerator Pedal enable	>=	0.5005	Pct		
					Common Enable Criteria					
					Ignition Voltage Lo	>=	9	Volts		
					Ignition Voltage Hi	<=	31.99	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	>=	-6.656	°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							One Trip
			Case: Steady State 1st							
			Attained Gear slip	>= 400 RPM						
			If the Above is True for Time	>= Table Based Time Please Refer to Table 4 in supporting documents	Enable Time (Sec)					

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE		SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED		MIL ILLUM.
			Intrusive test: (CBR1 clutch exhausted)							
			Gear Ratio	<=	1.529052734					
			Gear Ratio	>=	1.328979492					
			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	<=	1.529052734					

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE		SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED		MIL ILLUM.
			Gear Ratio	>=	1.328979492					
			If the above parameters are true							
								>= 1.1	Fail Timer (Sec)	
								>= 3	Fail Count in 2nd Gear	
									or	
								>= 3	Total fail counts	
			Fail Case 3 Case Steady State 3rd							
			Max Delta Output Speed Hysteresis	>=	Table Based value Please Refer to 3D Table 1 in supporting documents	rpm/sec				
			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	<=	1.529052734					
			Gear Ratio	>=	1.328979492					
			If the above parameters are true							

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS			TIME REQUIRED		MIL ILLUM.
									>=	1.1	Fail Timer (Sec)	
									>=	3	Fail Count in 3rd Gear	
										OR		
									>=	3	Total Fail Counts	
					PRNDL State defaulted	=	FALSE	Boolean			
					inhibit RVT	=	FALSE	Boolean			
					IMS fault pending indication	=	FALSE	Boolean			
					output speed	>=	0	RPM			
					TPS validity flag	=	TRUE	Boolean			
					HSD Enabled	=	TRUE	Boolean			
					Hydraulic_System_Pressurized	=	TRUE	Boolean			
					Minimum output speed for RVT	>=	0	Nm			
					A OR B						
					(A) Output speed enable	>=	650	Nm			
					(B) Accelerator Pedal enable	>=	0.5005	Nm			
					Ignition Voltage Lo	>=	9	Volts			
					Ignition Voltage Hi	<=	31.99	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	>=	10.001	Pct			
					if Attained Gear=1st FW Engine Torque Enable	>=	45	Nm			
					if Attained Gear=1st FW Engine Torque Enable	<=	8191.9	Nm			
					Transmission Fluid Temperature	>=	-6.656	ºC			

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		
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)	>= 0.700195313 Fail Time (Sec)					
			fail timer 1 (4-1 shifting without throttle)	>= 0.900390625 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 (4-2 shifting with throttle)	>=	0.700195313	Fail Time (Sec)				
			fail timer 1 (4-2 shifting without throttle)	>=	0.900390625	Fail Time (Sec)				
			fail timer 1 (4-3 shifting with throttle)	>=	0.700195313	Fail Time (Sec)				
			fail timer 1 (4-3 shifting without throttle)	>=	0.900390625	Fail Time (Sec)				
			fail timer 1 (5-3 shifting with throttle)	>=	0.700195313	Fail Time (Sec)				
			fail timer 1 (5-3 shifting without throttle)	>=	0.900390625	Fail Time (Sec)				
			fail timer 1 (6-2 shifting with throttle)	>=	0.700195313	Fail Time (Sec)				
			fail timer 1 (6-2 shifting without throttle)	>=	0.900390625	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 sec Timer 1, and Reference Supporting Table 15 for Fail Timer 2	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS			TIME REQUIRED		MIL ILLUM.
			If fail timer is greater than threshold increment corresponding gear fail counter and total fail counter								
			4th gear fail counter						>=	3	Fail Counter From 4th Gear
											OR
			5th gear fail counter						>=	3	Fail Counter From 5th Gear
											OR
			6th gear fail counter						>=	3	Fail Counter From 6th Gear
											OR
			Total fail counter						>=	5	Total Fail Counter
					TUT Enable temperature	>=	-6.672	°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	>=	200	RPM			
					input speed limit for TUT	>=	200	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			
Transmission Input Speed Sensor (TISS)	P07BF	Input/Turbine Speed Sensor A Circuit Low	TISS Analog Signal Voltage	<=	0.25 Volts			>= 0.05 sec		One Trip
			P07BF Status is not	=	Test Failed This Key On or Fault Active					
			If the above conditons have been met, increment the P07BF Fail Counter							
			DTC P07BF Sets when the Fail Counter	>=	75 Counts					
						P07BF Enable Calibration	= 1 Boolean			
						Ignition Voltage Lo	>= 9 Volts			
						Ignition Voltage Hi	<= 31.99 Volts			
				Disable Conditions:		**MIL not Illuminated for DTC's:**				
Transmission Input Speed Sensor (TISS)	P07C0	Input/Turbine Speed Sensor A Circuit High	TISS Analog Signal Voltage	>=	4.75 Volts			>= 0.05 sec		One Trip
			P07C0 Status is not	=	Test Failed This Key On or Fault Active					
			If the above conditons have been met, increment the P07C0 Fail Counter							

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE			SECONDARY PARAMETERS	ENABLE CONDITIONS			TIME REQUIRED			MIL ILLUM.
			DTC P07C0 Sets when the Fail Counter	>=	75	Counts								
							P07C0 Enable Calibration	=	1	Boolean				
							Ignition Voltage Lo	>=	9	Volts				
							Ignition Voltage Hi	<=	31.99	Volts				
						Disable Conditions:	**MIL not Illuminated for DTC's:**							
Tap Up Tap Down Switch (TUTD)	P0815	Upshift Switch Circuit	Fail Case 1 Tap Up Switch Stuck in the Up Position in Range 1 Enabled	=	1	Boolean								Special No Trip
			Tap Up Switch Stuck in the Up Position in Range 2 Enabled	=	1	Boolean								
			Tap Up Switch Stuck in the Up Position in Range 3 Enabled	=	1	Boolean								
			Tap Up Switch Stuck in the Up Position in Range 4 Enabled	=	1	Boolean								
			Tap Up Switch Stuck in the Up Position in Range 5 Enabled	=	1	Boolean								
			Tap Up Switch Stuck in the Up Position in Range 6 Enabled	=	1	Boolean								
			Tap Up Switch Stuck in the Up Position in Neutral Enabled	=	1	Boolean								
			Tap Up Switch Stuck in the Up Position in Park Enabled	=	1	Boolean								
			Tap Up Switch Stuck in the Up Position in Reverse Enabled	=	1	Boolean								
			Tap Up Switch ON	=	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	=	1	Boolean				
			Tap Up Switch Stuck in the Up Position in Park Enabled	=	1	Boolean				
			Tap Up Switch Stuck in the Up Position in Reverse Enabled	=	1	Boolean				
			Tap Up Switch ON	=	TRUE	Boolean				
			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	>=	9	Volts		
								Ignition Voltage Hi	<=	31.99	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	=	1	Boolean						Special No Trip
				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 Range Neutral Enabled	=	1	Boolean				
			Tap Down Switch Stuck in the Down Position in Range Park Enabled	=	1	Boolean				
			Tap Down Switch Stuck in the Down Position in Range Reverse Enabled	=	1	Boolean				
			Tap Down Switch ON	=	TRUE	Boolean			>= 1 sec	
			Fail Case 2 Tap Down Switch Stuck in the Down Position in Range 1 Enabled	=	1	Boolean				
			Tap Down Switch Stuck in the Down Position in Range 2 Enabled	=	1	Boolean				
			Tap Down Switch Stuck in the Down Position in Range 3 Enabled	=	1	Boolean				
			Tap Down Switch Stuck in the Down Position in Range 4 Enabled	=	1	Boolean				
			Tap Down Switch Stuck in the Down Position in Range 5 Enabled	=	1	Boolean				
			Tap Down Switch Stuck in the Down Position in Range 6 Enabled	=	1	Boolean				
			Tap Down Switch Stuck in the Down Position in Neutral Enabled	=	1	Boolean				
			Tap Down Switch Stuck in the Down Position in Park Enabled	=	1	Boolean				
			Tap Down Switch Stuck in the Down Position in Reverse Enabled	=	1	Boolean				
			Tap Down Switch ON	=	TRUE	Boolean				
			NOTE: Both Failcase1 and Failcase 2 Must Be Met						>= 600 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	>=	9	Volts		
					Ignition Voltage Hi	<=	31.99	Volts		
					Engine Speed Lo	>=	400	RPM		
					Engine Speed Hi	<=	7500	RPM		
					Engine Speed is within the allowable limits for	>=	5	Sec		
					P0816 Status is	≠		Test Failed This Key On or Fault Active		
			Disable Conditions:	**MIL not Illuminated for DTC's:**	TCM: P0815, P0826, P182E, P1876, P1877, P1915, P1761 ECM: None					
Tap Up Tap Down Switch (TUTD)	P0826	Up and Down Shift Switch Circuit	TUTD Circuit Reads Invalid Voltage	= TRUE Boolean					>= 60 Fail Time (Sec)	Special No Trip
					Ignition Voltage Lo	>=	9	Volts		
					Ignition Voltage Hi	<=	31.99	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		

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: 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					>= 8	Fail Counts	
			Check for Switch to be in Exhausted Position after delay, If so then Increment Fail Counter										
			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	>=	-6.656	°C			
							Transmission Fluid Temperature Hyst Hi (disable above this)	Not >=	120	°C			
							Transmission Fluid Temperature Hyst Lo (enable below this)	<=	110	°C			
							Ignition Voltage Lo	>=	9	Volts			
							Ignition Voltage Hi	<=	31.99	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			

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	P0873	Transmission Fluid Pressure (TFP) Sensor C Circuit High Voltage	CB26 Hydraulic Pressure	>=	700	KPa							Special No Trip
			Hydraulic Delay Timer (Table Based)	>=	See Table 8 for Delay Timer Cal	Sec							
			Check for Switch to be in Pressurized Position after delay, If so then Increment Fail Counter								>= 11	Fail Counts	
			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	>=	-6.656	℃			
							Transmission Fluid Temperature Hyst Hi (disable above this)	Not >=	120	℃			
							Transmission Fluid Temperature Hyst Lo (enable below this)	<=	110	℃			
							Ignition Voltage Lo	>=	9	Volts			
							Ignition Voltage Hi	<=	31.99	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				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE		SECONDARY PARAMETERS	ENABLE CONDITIONS			TIME REQUIRED		MIL ILLUM.
						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	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 Sec Cal					>= 12	Fail Counts	
			Check for Switch to be in Exhausted Position after delay, If so then Increment Fail Counter									
			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	>=	-6.656	ºC			
						Transmission Fluid Temperature Hyst Hi (disable above this)	Not >=	120	ºC			
						Transmission Fluid Temperature Hyst Lo (enable below this)	<=	110	ºC			
						Ignition Voltage Lo	>=	9	Volts			
						Ignition Voltage Hi	<=	31.99	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			
							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	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								>= 12	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	>=	-6.656	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)	<=	110	ºC			
							Ignition Voltage Lo	>=	9	Volts			
							Ignition Voltage Hi	<=	31.99	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					
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 out of 5	Fail Time (Sec) Sample Time (Sec)	Two Trips
							Ignition Voltage	>=	9	Volts			
							Ignition Voltage	<=	31.99	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				
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	>=	9	Volts		
							Ignition Voltage	<=	31.99	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	>=	9	Volts		
							Ignition Voltage	<=	31.99	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				
Variable Bleed Solenoid (VBS)	P0966	Pressure Control (PC) Solenoid B Control Circuit Low Voltage (C35R VBS)	The HWIO reports a low voltage (ground short) error flag	= TRUE Boolean					>= 0.3	Fail Time (Sec)	One Trip
									out of 0.375	Sample Time (Sec)	
					Ignition Voltage	>=	9	Volts			
					Ignition Voltage	<=	31.99	Volts			
					Engine Speed	>=	400	RPM			
					Engine Speed	<=	7500	RPM			
					Engine Speed is within the allowable limits for	>=	5	Sec			
					P0966 Status is not	=	Test Failed This Key On or Fault Active				
					Disable Conditions:	**MIL not Illuminated for DTC's:**	TCM: None				
							ECM: None				
Variable Bleed Solenoid (VBS)	P0967	Pressure Control (PC) Solenoid B Control Circuit High Voltage (C35R VBS)	The HWIO reports a high voltage (open or power short) error flag	= TRUE Boolean					>= 0.3	Fail Time (Sec)	One Trip
									out of 0.375	Sample Time (Sec)	
					Ignition Voltage	>=	9	Volts			
					Ignition Voltage	<=	31.99	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			
					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
									out of 0.375	Sample Time (Sec)	
					P0970 Status is not	=	Test Failed This Key On or Fault Active				
					Ignition Voltage	>=	9	Volts			
					Ignition Voltage	<=	31.99	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				
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)	One Trip
											out of 0.375	Sample Time (Sec)	
							P0971 Status is not	=	Test Failed This Key On or Fault Active				
							Ignition Voltage	>=	9	Volts			
							Ignition Voltage	<=	31.99	Volts			
							Engine Speed	>=	400	RPM			
							Engine Speed	<=	7500	RPM			
							Engine Speed is within the allowable limits for	>=	5	Sec			
							Disable Conditions:	**MIL not Illuminated for DTC's:**	TCM: None				
									ECM: None				
Shift Solinoid	P0973	Shift Solenoid A Control Circuit Low (Mode 2 Solenoid)	The HWIO reports a low voltage (ground short) error flag	=	TRUE	Boolean					>= 1.2	Fail Time (Sec)	One Trip
											out of 1.5	Sample Time (Sec)	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS			TIME REQUIRED	MIL ILLUM.
					P0973 Status is not	=	Test Failed This Key On or Fault Active			
					Ignition Voltage	>=	9	Volts		
					Ignition Voltage	<=	31.99	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
					P0974 Status is not	=	Test Failed This Key On or Fault Active			
					Ignition Voltage	>=	9	Volts		
					Ignition Voltage	<=	31.99	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					
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								>=	17 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	>=	-6.656	°C			
							Transmission Fluid Temperature Hyst Hi (disable above this)	Not >=	120	°C			
							Transmission Fluid Temperature Hyst Lo (enable below this)	<=	110	°C			
							Ignition Voltage Lo	>=	9	Volts			
							Ignition Voltage Hi	<=	31.99	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				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE			SECONDARY PARAMETERS	ENABLE CONDITIONS			TIME REQUIRED		MIL ILLUM.
							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								>= 30	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							
							Transmission Fluid Temperature Lo	>=	-6.656	ºC			
							Transmission Fluid Temperature Hyst Hi (disable above this)	Not >=	120	ºC			
							Transmission Fluid Temperature Hyst Lo (enable below this)	<=	110	ºC			
							Ignition Voltage Lo	>=	9	Volts			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Ignition Voltage Hi	<= 31.99 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		
					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		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE		SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED		MIL ILLUM.
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_Drive5	Range State				
			Either the S1 or S3 Pressure Switch indicates "Pressure Present"	=	TRUE	Boolean				
			Engine Torque	>=	-50	Nm				
			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	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE		SECONDARY PARAMETERS	ENABLE CONDITIONS		TIME REQUIRED		MIL ILLUM.
			Fail Case 3								
			Current range	=	"Transitional 13"	Previous range	≠	CeTRG R_e_P RNDL_ Drive5			
			Either the S1 or S3 Pressure Switch indicates "Pressure Present"	=	TRUE Boolean	Previous range	≠	CeTRG R_e_P RNDL_ Drive5			
			Engine Torque	>=	-8192 Nm	IMS is 7 position configuration	=	0 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					
			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						

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE			SECONDARY PARAMETERS	ENABLE CONDITIONS		TIME REQUIRED			MIL ILLUM.
			Steady State Engine Torque	>=	20	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	>=	20	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						
							Previous transitional state	≠	Transitional 8 and Illegal				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS			TIME REQUIRED		MIL ILLUM.
					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	<=	2.795898438 ratio						
			Reverse Trans Ratio	>=	3.149047852 ratio						
			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	>=	9	Volts			
					Ignition Voltage Hi	<=	31.99	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			

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: 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		
Tap Up Tap Down Switch (TUTD)	P1876	Tap Up and Down Enable Switch Circuit	Current range	= Park or Reverse or Neutral Range State				Special No Trip
			TUTD Enable Switch is Active	= TRUE Boolean			>= 3 Fail Time (Sec) >= 5 Fail Counts	
					Ignition Voltage Lo	>= 9 Volts		
					Ignition Voltage Hi	<= 31.99 Volts		
					Vehicle Speed Lo	<= 511 KPH		
					Engine Speed Lo	>= 400 RPM		
					Engine Speed Hi	<= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		
					P1876 Status is	≠ Test Failed This Key On or Fault Active		

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: P0815, P0816, P0826, P1761, P1825, P1877, P1915, U0100 ECM: None			
Internal Mode Switch (IMS)	P1915	Internal Mode Switch Does Not Indicate Park/Neutral (P/N) During Start	PRNDL State is	≠	Park or Neutral	Enumeration					One Trip
			The following events must occur Sequentially								
			Initial Engine speed	<=	50	RPM			>= 0.1	Enable Time (Sec)	
			Then								
			Engine Speed Between Following Cals								
			Engine Speed Lo Hist	>=	50	RPM					
			Engine Speed Hi Hist	<=	480	RPM			>= 0.069	Enable Time (Sec)	
			Then								
			Final Engine Speed	>=	500	RPM					
			Final Transmission Input Speed	>=	100	RPM			>= 1.25	Fail Time (Sec)	
							DTC has Ran this Key Cycle?	= FALSE Boolean			
							Ignition Voltage Lo	>= 6 V			
							Ignition Voltage Hi	<= 31.99 V			
							Ignition Voltage Hyst High (enables above this value)	>= 6 V			
							Ignition Voltage Hyst Low (disabled below this value)	<= 2 V			
							Transmission Output Speed	<= 90 rpm			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					P1915 Status is	≠ Test Failed This Key On or Fault Active		
				Disable Conditions:	**MIL not Illuminated for DTC's:**	TCM: P0722, P0723 ECM: None		
Transmission Control Module (TCM)	P2534	Ignition Switch Run/Start Position Circuit Low	Run crank active (based on voltage thresholds below)	= FALSE				One Trip
			Ignition Voltage High Hyst (run crank goes true when above this value)	6 Volts			>= 280 Fail Counts (25ms loop)	
			Ignition Voltage Low Hyst (run crank goes false when below this value)	2 Volts			Out of 280 Sample Counts (25ms loop)	
					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

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 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 or	
			and CB26 Fail Count							>=	14 — CB26 Fail Count	
		Fail Case 2	Case: Steady State 6th Gear									
			Gear slip	>=	400	RPM				>=	Please See Table 5 For Neutral Time Cal — Neutral Timer (Sec)	
			Intrusive test: commanded 5th gear									

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 see Table 2 in Supporting Documents	Enable Time (Sec)					
			If Above Conditions have been met, Increment 5th gear fail counter						>=	3	5th Gear Fail Count
											or
			and CB26 Fail Count						>=	14	CB26 Fail Count
					PRNDL State defaulted	=	FALSE	Boolean			
					inhibit RVT	=	FALSE	Boolean			
					IMS fault pending indication	=	FALSE	Boolean			
					TPS validity flag	=	TRUE	Boolean			
					Hydraulic System Pressurized	=	TRUE	Boolean			
					Minimum output speed for RVT	>=	0	RPM			
					A OR B						
					(A) Output speed enable	>=	650	RPM			
					(B) Accelerator Pedal enable	>=	0.5005	Pct			
					Common Enable Criteria						
					Ignition Voltage Lo	>=	9	Volts			
					Ignition Voltage Hi	<=	31.99	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	>=	-6.656	°C			
					Input Speed Sensor fault	=	FALSE	Boolean			
					Output Speed Sensor fault	=	FALSE	Boolean			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE		SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
						Default Gear Option is not present	= TRUE		
						Disable Conditions: **MIL not Illuminated for DTC's:**	TCM: P0716, P0717, P0722, P0723, P182E		
							ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Variable Bleed Solenoid (VBS)	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				
			If above coditons are true, increment appropriate Fail 1 Timers Below:						
			fail timer 1 (2-1 shifting with throttle)	>= 0.700195313	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 (2-1 shifting without throttle)	>=	0.900390625 Fail Time (Sec)				
			fail timer 1 (2-3 shifting with throttle)	>=	0.700195313 Fail Time (Sec)				
			fail timer 1 (2-3 shifting without throttle)	>=	0.900390625 Fail Time (Sec)				
			fail timer 1 (2-4 shifting with throttle)	>=	0.700195313 Fail Time (Sec)				
			fail timer 1 (2-4 shifting without throttle)	>=	0.900390625 Fail Time (Sec)				
			fail timer 1 (6-4 shifting with throttle)	>=	0.700195313 Fail Time (Sec)				
			fail timer 1 (6-4 shifting without throttle)	>=	0.900390625 Fail Time (Sec)				
			fail timer 1 (6-5 shifting with throttle)	>=	0.700195313 Fail Time (Sec)				
			fail timer 1 (6-5 shifting without throttle)	>=	0.900390625 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				>= Fail Timer sec	
							Total Fail Time = (Fail 1 + Fail 2) See Enable Timers for Fail Timer 1, and Reference Supporting Table 15 for Fail Timer 2	
			If fail timer is greater than threshold increment corresponding gear fail counter and total fail counter					
			2nd gear fail counter				>= 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	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					TUT Enable temperature	>= -6.672 °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	>= 200 RPM		
					input speed limit for TUT	>= 200 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)	<u>Fail Case 1</u> Case: Steady State 1st Attained Gear slip If the Above is True for Time Intrusive test: (CBR1 clutch exhausted) Gear Ratio Gear Ratio	 >= 400 RPM >= Table Based Time Please Refer to Table 4 in supporting documents Enable Time (Sec) <= 3.112670898 >= 2.705322266				One Trip

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)
								>=	8	Fail Count in 1st Gear
										or
								>=	8	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	<=	3.112670898					
			Gear Ratio	>=	2.705322266					
			If the above parameters are true							

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED		MIL ILLUM.
							>= 1.1	Fail Timer (Sec)	
							>= 3	Fail Count in 3rd Gear	
								or	
							>= 8	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	<= 0.798217773					
			Gear Ratio	>= 0.693725586					
			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 4th Gear
										or
								>=	8	Total Fail Counts
			Fail Case 4 Case: Steady State 5th Gear							
			Max Delta Output Speed Hysteresis	>=	Table Based value Please Refer to 3D Table 1 in supporting documents	rpm/sec				
			Min Delta Output Speed Hysteresis	>=	Table Based value Please Refer to 3D Table 2 in supporting documents	rpm/sec				
			If the Above is True for Time	>=	Table Based Time Please Refer to Table 17 in supporting documents	Sec				
			Intrusive test: (C35R clutch exhausted)							
			Gear Ratio	<=	0.798217773					
			Gear Ratio	>=	0.693725586					
			If the above parameters are true							
								>=	1.1	Fail Timer (Sec)
								>=	3	Fail Count in 5th Gear
										or

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS			TIME REQUIRED		MIL ILLUM.
									>=	8 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	>=	650	Nm			
					(B) Accelerator Pedal enable	>=	0.5005	Nm			
					Ignition Voltage Lo	>=	9	Volts			
					Ignition Voltage Hi	<=	31.99	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	>=	10.001	Pct			
					if Attained Gear=1st FW Engine Torque Enable	>=	45	Nm			
					if Attained Gear=1st FW Engine Torque Enable	<=	8191.9	Nm			
					Transmission Fluid Temperature	>=	-6.656	°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)	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	>=	9	Volts			
							Ignition Voltage	<=	31.99	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.
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	>= 9 Volts		
					Ignition Voltage	<= 31.99 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)	P2723	Pressure Control (PC) Solenoid E Stuck Off	Fail Case 1 Case: Steady State 1st Gear Gear slip Intrusive test: commanded 2nd 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 ≠ 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						>= 2	1st Gear Fail Count	
										or	
			and C1234 fail counter						>= 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)	
			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						>= 2	2nd Gear Fail Count	
										or	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE			SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED		MIL ILLUM.
			and C1234 fail counter						>=	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						>=	2	3rd Gear Fail Count or	
			and C1234 fail counter						>=	14	C1234 Clutch Fail Count	
			Fail Case 4 Case: Steady State 4th Gear								
			Gear slip	>=	400	RPM			>=	Please See Table 5 For Neutral Time Cal	Neutral Timer (Sec)	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE		SECONDARY PARAMETERS	ENABLE CONDITIONS			TIME REQUIRED		MIL ILLUM.
			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
												or
			and C1234 fail counter							>=	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	>=	650	RPM			
						(B) Accelerator Pedal enable	>=	0.5005	Pct			
						Common Enable Criteria						
						Ignition Voltage Lo	>=	9	Volts			
						Ignition Voltage Hi	<=	31.99	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			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Transmission Fluid Temperature	>= -6.656 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				
			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)	>= 0.700195313 sec				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE		SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			fail timer 1 (2-6 shifting without throttle)	>=	0.900390625 sec				
			fail timer 1 (3-5 shifting with throttle)	>=	0.700195313 sec				
			fail timer 1 (3-5 shifting without throttle)	>=	0.900390625 sec				
			fail timer 1 (4-5 shifting with throttle)	>=	0.700195313 sec				
			fail timer 1 (4-5 shifting without throttle)	>=	0.900390625 sec				
			fail timer 1 (4-6 shifting with throttle)	>=	0.700195313 sec				
			fail timer 1 (4-6 shifting without throttle)	>=	0.900390625 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 sec Timer 1, and Reference Supporting Table 15 for Fail Timer 2	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS			TIME REQUIRED			MIL ILLUM.
			If fail timer is greater than threshold increment corresponding gear fail counter and total fail counter									
			2nd gear fail counter						>=	3	Fail Counter From 2nd Gear	
			3rd gear fail counter						>=	3	Fail Counter From 3rd Gear	
			4th gear fail counter						>=	3	Fail Counter From 4th Gear	
			total fail counter						>=	5	Total Fail Counter	
					TUT Enable temperature	>=	-6.672	ºC				
					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	>=	200	RPM				
					input speed limit for TUT	>=	200	RPM				
					PRNDL state defaulted	=	FALSE	Boolean				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					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)	<u>Fail Case 1</u> Case: 5th Gear Max Delta Output Speed Hysteresis >= Min Delta Output Speed Hysteresis >= If the Above is True for Time >= Intrusive test: (C35R clutch exhausted) Gear Ratio <= Gear Ratio >=	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 1.529052734 1.328979492				One Trip

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) $>=$ 3 Fail Count in 5th Gear OR $>=$ 3 Total Fail Counts	
			Fail Case 2 Case: 6th Gear					
			Max Delta Output Speed Hysteresis	$>=$ Table Based value Please Refer to 3D Table 1 in supporting documents rpm/sec				
			Min Delta Output Speed Hysteresis	$>=$ Table Based value Please Refer to 3D Table 2 in supporting documents rpm/sec				
			If the Above is True for Time	$>=$ Table Based Time Please Refer to Table 17 in supporting documents Sec				
			Intrusive test: (CB26 clutch exhausted)					
			Gear Ratio	$<=$ 1.529052734				
			Gear Ratio	$>=$ 1.328979492				
			If the above parameters are true					

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS		TIME REQUIRED		MIL ILLUM.
								>= 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	>=	650 Nm			
					(B) Accelerator Pedal enable	>=	0.5005 Nm			
					Ignition Voltage Lo	>=	9 Volts			
					Ignition Voltage Hi	<=	31.99 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	>=	10.001 Pct			
					if Attained Gear=1st FW Engine Torque Enable	>=	45 Nm			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS			TIME REQUIRED	MIL ILLUM.
					if Attained Gear=1st FW Engine Torque Enable	<=	8191.9	Nm		
					Transmission Fluid Temperature	>=	-6.656	°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
					P2729 Status is not	=	Test Failed This Key On or Fault Active			
					Ignition Voltage	>=	9	Volt		
					Ignition Voltage	<=	31.99	Volt		
					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)	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	>= 9 Volt		
					Ignition Voltage	<= 31.99 Volt		
					Engine Speed	>= 400 RPM		
					Engine Speed	<= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		
				Disable Conditions:	**MIL not Illuminated for DTC's:**	TCM: None ECM: None		
Variable Bleed Solenoid (VBS)	P2763	Torque Converter Clutch Pressure High	The HWIO reports a low pressure/high voltage (open or power short) error flag	= TRUE Boolean			>= 4.4 Fail Time (Sec) out of 5 Sample Time (Sec)	Two Trips

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS			TIME REQUIRED	MIL ILLUM.
					P2763 Status is not	=	Test Failed This Key On or Fault Active			
					Ignition Voltage	>=	9	Volt		
					Ignition Voltage	<=	31.99	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	>=	9	Volt		
					Ignition Voltage	<=	31.99	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		

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: 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 Power Mode	>= 3 = Run	sec				
							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 Power Mode	>= 3 = Run	sec				
							Disable Conditions:	**MIL not Illuminated for DTC's:**	TCM: U0073 ECM: None				

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	100.00	120.00	150.00	150.00	150.00	150.00	150.00	150.00	150.00	RPM

Table 2

Axis	-6.67	-6.66	40.00	°C
Curve	409.59	2.00	2.00	Sec

Table 3

Axis	-6.67	-6.66	40.00	°C
Curve	409.59	3.50	3.50	Sec

Table 4

Axis	-6.67	-6.66	40.00	°C
Curve	409.59	2.99	2.00	Sec

Table 5

Axis	-6.67	-6.66	40.00	°C
Curve	409.59	3.00	3.00	Sec

Table 6

Axis	-7.01	-7.00	40.00	80.00	120.00	°C
Curve	409.00	3.60	1.60	1.40	1.40	Sec

Table 7

Axis	-7.01	-7.00	40.00	80.00	120.00	°C
Curve	409.00	3.40	1.40	1.30	1.20	Sec

Table 8

Axis	-7.01	-7.00	40.00	80.00	120.00	ºC
Curve	409.00	3.60	1.60	1.50	1.40	Sec

Table 9

Axis	-7.01	-7.00	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	8.85	3.75	1.31	0.28	0.28	Sec

Table 11

Axis	-40.00	-20.00	0.00	30.00	110.00	ºC
Curve	5.00	1.70	0.40	0.25	0.25	Sec

Table 12

Axis	-40.00	-20.00	0.00	30.00	110.00	ºC
Curve	8.00	2.20	0.70	0.25	0.25	Sec

Table 13

Axis	-40.00	-20.00	0.00	30.00	110.00	ºC
Curve	5.20	1.60	0.50	0.27	0.16	Sec

Table 14

Axis	-40.00	-20.00	0.00	30.00	110.00	ºC
Curve	5.00	1.50	0.70	0.25	0.25	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

3D Tables

3D_Table 1

X-Axis Calibration	%		0.00	2.00	5.00	25.00	100.00
Y-Axis Calibration	ºC	-6.67	8191.75	8191.75	8191.75	8191.75	8191.75
Table Calibration	RPM/Sec	-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	%		0.00	2.00	5.00	25.00	100.00
Y-Axis Calibration	ºC	-6.67	8191.75	8191.75	8191.75	8191.75	8191.75
Table Calibration	RPM/Sec	-6.66	500.00	500.00	300.00	300.00	300.00
		40.00	500.00	500.00	300.00	300.00	300.00