COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	Т	HRESHOLD	) VALUE	SECONDARY PARAMETERS	ENABL	E COND	ITIONS	TIME REQUIRED	
Transmission Control Module (TCM)	P0601	Transmission Electro-Hydraulic Control Module Read Only Memory	Incorrect program/calibrations checksum		TRUE	Boolean					>= 5 Fai Cour	
							Ignition Voltage Lo Ignition Voltage Hi	>= <=	8.5996 18	Volts Volts		
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0601 ECM: None				
Transmission Control Module (TCM)	P0603	Transmission Electro-Hydraulic Control Module Long-Term Memory Reset	Non-volatile memory (static or dynamic) checksum failure at Powerup	=	TRUE	Boolean					Runs Contin ously	One Trip
							Ignition Voltage Lo Ignition Voltage Hi	>= <=	8.5996 18	Volts Volts		
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0603 ECM: None				
Transmission Control Module (TCM)	P0604	Transmission Electro-Hydraulic Control Module Random Access Memory	RAM Read/Write Failure (Single Word)	=	TRUE	Boolean					>= 5 Fai	ts
							Ignition Voltage Lo Ignition Voltage Hi	>= <=	8.5996 18	Volts Volts	= 16 Samı Cour	le ts

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	Т	HRESHOLD '	VALUE	SECONDARY PARAMETERS	ENABL	E CONDI	TIONS	TIME R	EQUIRE	MIL ILLU
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0604					
						oonamone.	2100.	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					Co	ins ntin sly	One Tr
							Ignition Voltage Lo	>=	8.5996	Volts			
							Ignition Voltage Hi	<=	18	Volts			
						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	<u>Fail Case</u> 1 Substrate Temperature	>= 1	42.1015625	°C					>=	Fa 5 Tim (Se	е
			Fail Case  2 Substrate Temperature		50	°C					>=	Fa 2 Tim (Se	е
			Ignition Voltage  Note: either fail case can set the DTC	>=	18	Volts							
			Set the DTO				Ignition Voltage Lo	>=	0 5006	Volts			_
							Ignition Voltage Lo	>= <=	8.5996 31.999	Volts			
							Substrate Temp Lo	>=	0	°C			
							Substrate Temp Hi	<=	170	°C			
							Substrate Temp Between Temp Range for Time	>=	0.25	Sec			

## 11 OBDG07 TRANS Diagnostics

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					P0634 Status is	Test Failed This ≠ Key On or Fault Active		
				Disal Condition				
HWIO	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		
				Disal Condition				
						ECM: None		
Transmission Control Module (TCM)	P0667	TCM Internal Temp (substrate) Sensor Circuit Range/Performance	If transmission oil temp to substrate temp $\Delta$					Two Trips

## 11 OBDG07 TRANS Diagnostics

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 $\Delta$	Refer to Table  20 in  supporting documents				
			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.				Sample Counts (100ms loop)	
			Non-continuous (intermittent) fail conditions will delay resetting fail counter until				>= 700 Pass Counts (100ms loop)	
							Out of 875 Sample Counts (100ms loop)	
					Engine Torque Signal Valid	= TRUE Boolean		
					Accelerator Position Signal Valid	= TRUE Boolean		
					Ignition Voltage Lo	>= 8.5996 Volts		
					Ignition Voltage Hi	<= 31.999 Volts		
					Engine Speed Lo	>= 400 RPM		
					Engine Speed Hi	<= 7500 RPM		
I					Engine Speed is within the allowable limits for	>= 5 Sec		
					Brake torque active	= FALSE		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENAB	LE CONDI	TIONS	TIME REQUIRED	MIL ILLUM.
					Below describes the brake torque entry criteria					
					Engine Torque		90	N*m		
					Throttle		30	Pct		
					Transmission Input Speed Vehicle Speed		200 8	RPM Kph		
					Transmission Range		Park	Крп		
					Transmission Range		Neutral			
					РТО	=	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	/ALUE	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_Volt ageDirectProp					Two Trips
			If TCM Substrate Temperature Sensor = Direct Proportional and Temp	<= -249	°C				
			If TCM Substrate Temperature Sensor = Indirect Proportional and Temp	>= -249	°C				
			Either condition above will satisfy the fail conditions					Fail >= 60 Timer (Sec)	
						Ignition Voltage Lo Ignition Voltage Hi	>= 8.5996 Volts <= 31.999 Volts		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THE	RESHOLI	) VALUE	SECONDARY PARAMETERS	ENABL	E CONDI	TIONS	TIME	REQUIREI	0	MIL ILLUM.
								Engine Speed Lo Engine Speed Hi	>= <=	400 7500	RPM RPM				
								Engine Speed is within the allowable limits for	>=	5	Sec				
								P0668 Status is	≠	Test Failed This Key On or Fault Active					
							Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None						
									ECM: None						
Transmission Control Module (TCM)	P0669	TCM internal temperature (substrate) thermistor failed at a high voltage	Type of Sensor Used	=	CeT age	FTI_e_Vo	olt p							1	Two Trips
			If TCM Substrate Temperature Sensor = Direct Proportional and Temp	>=		249	°C								
			If TCM Substrate Temperature Sensor = Indirect Proportional and Temp	<=		249	°C								
			Either condition above will satisfy the fail conditions									>=	Fa 60 Tim (Se	er	
					-			Ignition Voltage Lo	>=	8.5996				1	
								Ignition Voltage Hi Engine Speed Lo	<= >=	31.999 400	Volts RPM				
								Engine Speed Lo 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.
					P0669 Status is	Test Failed This ≠ Key On or Fault Active		
					For Hybrids, below conditions must also be met			
					Estimated Motor Power Loss	>= 0 kW		
					Estimated Motor Power Loss greater than limit for time	>= 0 Sec		
					Lost Communication with Hybrid Processor Control Module	= FALSE		
					Estimated Motor Power Loss Fault	E FΔISE		
				Disable Conditions:				
						ECM: None		
Transmission Control Module (TCM)	P06AC	TCM Power-up Temp Sensor Circuit Range/Performance	If TCM power-up temp to substrate temp Δ					Two Trips
			If transmission oil temp to power up temp Δ					

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABL	E CONDIT	IONS	TIME REQUIRED	MIL ILLUM.
			Both conditions above required to increment fail counter  Note: table reference temp = to the median temp of trans oil temp, substrate temp and power up temp.						>= 3000 Fail Counts (100ms loop)  Out of 3750 Sample Counts (100ms loop)	
			Non-continuous (intermittent) fail conditions will delay resetting fail counter until						>= 700 Pass Counts (100ms loop)  Out of 875 Sample Counts (100ms loop)	
					Engine Torque Signal Valid Accelerator Position Signal Valid Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed Hi Engine Speed is within the allowable limits for	= = >= <= >= >= <= >=	31.999 400 7500 5	Boolean Volts		
					Brake torque active Below describes the brake torque entry criteria Engine Torque Throttle Transmission Input Speed Vehicle Speed		90 30 200 8	N*m Pct RPM Kph		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENAB	LE CONDIT	TIONS	TIME REQUIRED	MIL ILLUM.
					Transmission Range	≠	Park			
					Transmission Range	≠	Neutral			
					РТО	=	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	<b>≠</b>	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		
					P06AC 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, P0305, P0306, P0307, P0308, P0306, P0307, P0308, P0306, P0307, P0308, P0401, P042E		
Transmission Control Module (TCM)	P06AD	TCM power-up thermistor circuit voltage low	Power Up Temp	<= -59 °C			>= 60 Time (Sec)	Two Trips
					Ignition Voltage Lo	>= 8.5996 Volts		
					Ignition Voltage Hi Engine Speed Lo			
					Engine Speed Hi			
					Engine Speed is within the allowable limits for	>= 5 Sec		
					P06AD Status is	Test Failed This ≠ Key On or Fault Active		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABL	E CONDI	TIONS	TIME	REQUII	RED	MIL ILLUM.
					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:							
						ECM: None						
Transmission Control Module (TCM)	P06AE	TCM power-up thermistor circuit voltage high	Power Up Temp	>= 164 °C					>=	60	Fail Time (Sec)	Two Trips
					Ignition Voltage Lo	>=	8.5996	Volts				
					Ignition Voltage Hi	<=		Volts				
					Engine Speed Lo Engine Speed Hi	>= <=	400 7500	RPM RPM				
					Engine Speed is within the allowable limits for		5	Sec				
					P06AE 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: None		
						ECM: None		
Transmission Fluid Temperature Sensor (TFT)	P0711	Trans Fluid Temp Sensor Circuit Range/Performance	If transmission oil temp to substrate temp $\Delta$					Two Trips
			If transmission oil temp to power up temp $\Delta$					
			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)	
							Sample Counts (100ms loop)	
					Engine Torque Signal Valid	= TRUE Boolean		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABI	LE CONDIT	ΓIONS	TIME REQUIRED	MIL ILLUM.
					Accelerator Position Signal Valid	=	TRUE	Boolean		
					Ignition Voltage Lo	>=	8.5996	Volts		
					Ignition Voltage Hi	<=	31.999	Volts		
					Engine Speed Lo	>=	400	RPM		
					Engine Speed Hi	<=	7500	RPM		
					Engine Speed is within the allowable limits for	>=	5	Sec		
					Brake torque active	=	FALSE			
					Below describes the brake torque entry criteria					
					Engine Torque	>=	90	N*m		
					Throttle	>=	30	Pct		
					Transmission Input Speed		200	RPM		
					Vehicle Speed		8	Kph		
					Transmission Range	<b>≠</b>	Park			
					Transmission Range	≠	Neutral			
					РТО	=	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			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					The above clutch pressure is greater than this value for one loop	>= 600 kpa		
					Set Brake Torque Active FALSE if above conditions are met for:	>= 20 Sec		
					P0711 Status is	Test Failed This ≠ Key On or Fault Active		
				Disable Conditions:		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		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD VALUE	SECONDARY PARAMETERS	ENABI	LE CONDI	TIONS	TIME	REQU	IIRED	MIL ILLUM.
Transmission Fluid Temperature Sensor (TFT)	P0712	Transmission fluid temperature thermistor failed at a low voltage	Type of Sensor Used	=	CeTFTI_e_Volt ageDirectProp								Two Trips
			If Transmission Fluid Temperature Sensor = Direct Proportional and Temp	<=	-74 °C								
			If Transmission Fluid Temperature Sensor = Indirect Proportional and Temp	>=	-74 °C								
			Either condition above will satisfy the fail conditions							>=	60	Fail Time (Sec)	
						Ignition Voltage Lo	>=	8.5996					
						lgnition Voltage Hi Engine Speed Lo	<= >=	31.999 400	Volts 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				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD	VALUE	SECONDARY PARAMETERS	ENABL	E CONDI	TIONS	TIME RE	QUIRED	MIL ILLUM.
							Lost Communication with Hybrid Processor Control Module	=	FALSE				
							Estimated Motor Power Loss Fault	=	FALSE				
						Disable Conditions:	MIL not Illuminated for DTC's:						
								ECM: None					
Transmission Fluid Temperature Sensor (TFT)	P0713	Transmission fluid temperature thermistor failed at a high voltage	Type of Sensor Used	=	CeTFTI_e_Vol ageDirectProp	t							Two Trips
			If Transmission Fluid Temperature Sensor = Direct Proportional and Temp	>=	174	°C							
			If Transmission Fluid Temperature Sensor = Indirect Proportional and Temp	<=	174	°C							
			Either condition above will satisfy the fail conditions								>= 60	Fail Time (Sec)	
							Ignition Voltage Lo	>=	8.5996	Volts			
							Ignition Voltage Hi		31.999	Volts			
							Engine Speed Lo Engine Speed Hi	>= <=	400 7500	RPM RPM			
							Engine Speed is within the allowable limits for		5	Sec			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABL	E CONDI	TIONS	TIME RE	QUIRED	MIL ILLUM.
					P0713 Status is	<b>≠</b>	Test Failed This Key On or Fault Active				
				Disa Conditio							
						ECM: None					
Transmission Input Speed Sensor (TISS)	P0716	Input Speed Sensor Performance	Transmission Input Speed Sensor Drops	>= 881.75 RPM					>= 0.8	Fail Time (Sec)	One Trip
					Engine Torque is	>=	0	N*m			
					Engine Torque is	<=	8191.9				
					Engine Speed		400	RPM			
					Engine Speed Engine Speed is within the allowable limits for		7500 5	RPM Sec			
					Vehicle Speed is		0	Kph			
					Throttle Position is		0	Pct			
					Transmission Input Speed is	>=	0	RPM			
					The previous requirement has been satisfied for	>=	0	Sec			
					The change (loop to loop) in transmission input speed is	<	8191.9	RPM/ Loop			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	1	THRESHOLD	VALUE	SECONDARY PARAMETERS	ENABI	LE CONDI	TIONS	TIME REQU	IIRED	MIL ILLUM.
							The previous requirement has been satisfied for	>=	0	Sec			
							Throttle Position Signal Valid	=	TRUE	Boolean			
							Engine Torque Signal Valid Ignition Voltage		TRUE 8.5996	Boolean			
							Ignition Voltage		31.999				
							P0716 Status is not	=	Test Failed This Key On or Fault Active				
						Disable Conditions:	MIL not Illuminated for DTC's:	P( ECM:	: P0717, P 0973, P09 : P0101, P 3, P0121, F	74 0102,			
								1 0 100	P0123	0122,			
Transmission Input Speed Sensor (TISS)	P0717	Input Speed Sensor Circuit Low Voltage	Fail Case  1 Transmission Input Speed is	<	32.625	RPM					>= 4.5	Fail Time (Sec)	One Trip
			Fail Case  When P0722 DTC Status equal to Test Failed and Transmission Input Speed is	<	653.125	RPM	Controller uses a single power supply for the speed sensors	=	1	Boolea n			
							Engine Torque is Engine Torque is Vehicle Speed	>= <= >=	50 8191.9 16	N*m N*m Kph			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Engine Torque Signal Valid	= TRUE Boolean		
					Ignition Voltage	>= 8.5996 Volts		
					Ignition Voltage			
					Engine Speed			
					Engine Speed			
					Engine Speed is within the allowable limits for	>= 5 Sec		
					P0717 Status is not	Test Failed This = Key On or Fault Active		
				Disable Conditions:				
Transmission Output Speed Sensor (TOSS)	P0722	Output Speed Sensor Circuit Low Voltage	Transmission Output Speed Sensor Raw Speed	<= 35 RPM			Fail >= 4.5 Time (Sec)	One Trip
					P0722 Status is not	Test Failed This Key On or Fault Active		
					Transmission Input Speed Check			
					Engine Torque Check	= TRUE Boolear		
					Throttle Position	>= 8.0002 Pct		
					Transmission Fluid Temperature	>= -40 °C		
					Disable this DTC if the PTO is active			
					Engine Torque Signal Valid	= TRUE Boolear		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Throttle Position Signal Valid  Ignition Voltage is Ignition Voltage is Engine Speed is Engine Speed is Engine Speed is	>= 8.5996 Volts <= 31.999 Volts >= 400 RPM <= 7500 RPM		
					allowable limits for  Enable_Flags Defined Below  The Engine Torque Check is  TRUE, if either of the two following conditions are	7- 3 360		
					TRUE Engine Torque Condition 1 Shift Status is not OR	e Dade sa		
					Transmission Range is Engine Torque is Engine Torque is Engine Torque Condition 2	>= 8191.8 N*m <= 8191.8 N*m		
					Engine Torque is Engine Torque is The Transmission Input Speed (TIS) Check is TRUE, if either of the two following conditions are TRUE	<= 8191.8 N*m		
					TIS Check Condition 1 Transmission Input Speed is	>= 653.13 RPM		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	т	HRESHOLD	VALUE	SECONDARY PARAMETERS	ENABI	LE COND	DITIONS	TIME RE	QUIRED	MIL ILLUM.
							Transmission Input Speed is	<=	5350	RPM			
							TIS Check Condition 2						
							Engine Speed without the brake applied is	>=	3200	RPM			
							Engine Speed with the brake applied is	/=	3200	RPM			
							Engine Speed is		8191.9	RPM			
							Controller uses a single power supply for the speed sensors	=	1	Boolean			
							Powertrain Brake Pedal is Valid	=	TRUE	Boolean			
						Disable Conditions:	MIL not Illuminated for DTC's:	ECM:	P0716, F P0723 P0101, F B, P0121, P0123	P0102,			
Transmission Output Speed Sensor (TOSS)	P0723	Output Speed Sensor Circuit Intermittent	Raw Output Speed	>=	105	RPM					>= 0	Enable Time (Sec)	One Trip
			Output Speed Delta	<=	8192	RPM					>= 0	Enable Time (Sec)	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			Output Speed Drop	> 650 RPM			Output Speed Drop >= 1.5 Recove r Fail Time (Sec)	
					Range_Disable OR	= FALSE Boolean		
					Neutral_Range_Enable And			
					Neutral_Speed_Enable are TRUE concurrently			
					Transmission_Range_Enable  Transmission_Input_Speed_ Enable	TDUE Books		
					No Change in Transfer Case Range (High <-> Low) for	5 0		
					Engine Torque Signal Valid Throttle Position Signal Valid			
					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 Ignition Voltage is Engine Speed is Engine Speed is	<= 31.999 Volts >= 400 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		
					Enable_Flags Defined Below			
					Transmission_Input_Speed_ Enable is TRUE when either TIS Condition 1 or TIS Condition 2 is TRUE:	г Б		
					TIS Condition 1 is TRUE when both of the following conditions are satsified for	>= 0 Time		
					Input Speed Delta Raw Input Speed			
					TIS Condition 2 is TRUE when ALL of the next three conditions are satisfied			
					Input Speed	d = 0 RPM		
					A Single Power Supply is used for all speed sensors	= TRUE Boolea	ı	
					Powertrain Brake Pedal Applied is		1	
					Neutral_Range_Enable is TRUE when any of the next 3 conditions are TRUE	3		
					Transmission Range is	s = Neutral ENUM		
					Transmission Range is	Revers e/Neutr s = al ENUM Transit onal		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Transmission Range is	Neutral/ Drive Transiti onal		
					And when a drop occurs  Loop to Loop Drop of Transmission Output Speed is			
					Range_Disable is TRUE when any of the next three conditions are TRUE			
					Transmission Range is  Transmission Range is	Park/R		
					Input Clutch is not	ON (Fully Applied ENUM )		
					Neutral_Speed_Enable is TRUE when All of the next three conditions are satsified for	> 409.59 Seconds		
					Transmission Output Speed	> 0 RPM		
					And the acceleration of the Transmission Output Speed is	RPM/L < 0 oop Rate		
					And the acceleration of the Transmission Output Speed is			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD	VALUE	SECONDARY PARAMETERS	ENABL	E CONDI	ITIONS	TIME RE	QUIRED	MIL ILLUM.
							Transmission_Range_Enable is TRUE when one of the next four conditions is TRUE						
							Transmission Range is	=	Neutral Revers	ENUM			
							Transmission Range is	=	e/Neutr al Transiti onal	ENUM			
							Transmission Range is	=	Neutral/ Drive Transiti onal	- NII IN 4			
							Range Change Delay Timer	>=	5	Sec			
						Disable Conditions:		P0 ECM:	P0973, P 976, P09 P0101, P P0121, F P0123	77			
Torque Converter Clutch (TCC)	P0741	TCC System Stuck OFF	TCC Pressure	>=	750	Кра					>= 2	Enable Time (Sec)	Two Trips
			Either Condition (A) or (B) Must be Met										
			(A) TCC Slip Error @ TCC On Mode	>=	Refer to Table 1 in Supporting Documents	RPM					>= 6	Fail Time (Sec)	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLI	) VALUE	SECONDARY PARAMETERS	ENABL	E CONDI	TIONS	TIME	REQU	JIRED	MIL ILLUM.
			(B) TCC Slip @ Lock On Mode	>= 130	RPM					>=	6	Fail Time (Sec)	
			If Above Conditions Have been Met, and Fail Timer Expired, Increment Fail Counter							>=	2	TCC Stuck Off Fail Counter	
						Ignition Voltage Lo	>=	8.5996	Volts				
						Ignition Voltage Hi	<=	31.999	Volts				
						Engine Speed	>=	400	RPM				
						Engine Speed	<=	7500	RPM				
						Engine Speed is within the allowable limits for	>=	5	Sec				
						Engine Torque Lo	>=	50	N*m				
						Engine Torque Hi	<=	8191.9	N*m				
						Throttle Position Lo	>=	8.0002	Pct				
						Throttle Position Hi	<=	99.998	Pct				
						2nd Gear Ratio Lo	>=	2.1948					
						2nd Gear Ratio High	<=	2.5251					
						3rd Gear Ratio Lo 3rd Gear Ratio High	>= <=	1.4229 1.6371	Ratio Ratio				
						4th Gear Ratio Lo	>=	1.0695					
						4th Gear Ratio High	<=	1.2305					
						5th Gear Ratio Lo	>=	0.7905					
						5th Gear Ratio Hi	<=	0.9095					
						6th Gear Ratio Lo	>=	0.623	Ratio				
						6th Gear Ratio High	<=	0.7169	Ratio				
						Transmission Fluid Temperature Lo	>=	-6.656	°C				
						Transmission Fluid Temperature Hi	<=	130	°C				
						TCC Command Lock ON or ON mode	=	TRUE	Boolean				
						PTO Not Active	=	TRUE	Boolean				
						Engine Torque Signal Valid	=	TRUE	Boolean				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOL	D VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
							Throttle Position Signal Valid  Dynamic Mode  P0741 Status is	= FALSE Boolean Test Failed		
						Disable Conditions:				
Torque Converter Clutch (TCC)	P0742	TCC System Stuck ON	TCC Slip Speed  TCC Slip Speed  If Above Conditions Have been Met, and Fail Timer Expired, Increment Fail Counter	<=	-12 13	RPM RPM			Fail >= 2.5 Time (Sec) >= 6 Fail Counter	One Trip
							Run TCC Stuck On Test Enable Criteria:			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENAB	LE CONDI	TIONS	TIME REQUIRED	MIL ILLUM.
					Gear Ratio	<=	1.6393	Ratio		
					Gear Ratio		0.623	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		0	Boolean		
					If Stuck On During Upshift is enabled (See Above), Engine Torque Must be	>=	55	Nm		
I					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			
					Transmission Sump Temperature		130	°C		
					Transmission Sump Temperature	>=	-6.656	°C		
					Throttle Position Hyst High	>=	8.0002	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		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					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			
					4 Wheel Drive Active	= FALSE Boolean		
					Hydraulic Clutch Air Purge Active			
					Ignore Air Purge if value = true			
					TCC Mode Common Enables:	= OFF		
					Ignition Voltage	>= 8.5996 V		
					Ignition Voltage	<= 31.999 V		
					Vehicle Speed			
					Engine Speed			
					Engine Speed			
					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:			
						ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204,		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD	VALUE	SECONDARY PARAMETERS	ENAB	LE COND	ITIONS	TIME	REQU	JIRED	MIL ILLUM.
								P0208 P0302 P0305	5, P0206,   3, P0300,   2, P0303,   5, P0306,   3, P0401,	P0301, P0304, P0307,				
Mode 2 Multiplex Valve	P0751	Shift Solenoid Valve A Stuck Off	Commaned Gear Slip Commanded Gear Gear Ratio Gear Ratio If the above parameters are true	= <=	400 1st Lock 1.209594727 1.094360352	RPM rpm					>= = #	8	Fail Tmr Fail Counts  Neutral Timer (Sec) Fail Timer (Sec)	Two Trips
							Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for Transmission Fluid Temperature Shift is Complete  TPS OR Output Speed Throttle Position Signal Valid from ECM	>= <= >= >= >= >=	8.5996 31.999 400 7500 5 -6.656 0.5005 0	Volts RPM RPM Sec		8	Counts	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD	VALUE	SECONDARY PARAMETERS	ENABI	LE CONDITIONS	TIME REQUIRED	MIL ILLUM.
							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:		: P0716, P0717, 2, P0723, P182E		
								P0103 P0108 P0174 P0202 P0205 P0208 P0302 P0305	8: P0101, P0102, 8; P0106, P0107, 8; P0171, P0172, 9; P0203, P0201, 9; P0203, P0204, 9; P0206, P0207, 9; P0300, P0301, 9; P0303, P0304, 9; P0306, P0307, 9; P0306, P0307, 9; P0301, P042E		
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					

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			C456/CBR1 Pressure Switch Fault  If the above parameters are true	= FALSE Boolean	Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for High-Side Driver is Enabled Throttle Position Signal Valid from ECM Output Speed OR TPS Shift is Complete Transmission Fluid Temperature Input Speed Sensor fault Output Speed Sensor fault Output Speed Sensor fault Default Gear Option is not present	>= 400 RPM <= 7500 RPM >= 5 Sec  = TRUE Boolean = TRUE Boolean >= 0 RPM >= 0.5005 %  >= -6.656 °C  = FALSE Boolean = FALSE 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		
							2.00.			
								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	50750		Fail Case							One Trip
Valve	P0756	Shift Solenoid Valve B Stuck Off	1 Commanded Gear	=	1st Locked					
			Gear Box Slip	>=	400	RPM			Pleas e Refer to Neutral >= Table 5 in Suppo rting Docu ments	
			Intrusive Shift to 2nd							
			Commanded Gear Previous	=	1st Locked	Gear				
			Gear Ratio		2.482177734					
			Gear Ratio  If the above parameters	>=	2.245849609					
			ir the above parameters are true							
									>= 1 sec >= 3 counts	
							Ignition Voltage Lo	>= 8.5996 Volts	3 330	
							Ignition Voltage Hi Engine Speed Lo	<= 31.999 Volts >= 400 RPM		
							Engine Speed Hi			

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		
					Output Speed OR			
					TPS Shift is Complete			
					Transmission Fluid Temperature			
					High-Side Driver is Enabled	= TRUE Boolean		
					Throttle Position Signal Valid from ECM			
					Input Speed Sensor fault Output Speed Sensor fault			
					Default Gear Option is not present	= TRUF		
				Disable Conditions:				
						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	P0776	Pressure Control (PC) Solenoid B Stuck Off [C35R]	Fail Case  1 Case: Steady State 3rd Gear					One Trip
Solenoid (VBS)		D Glack Off [Gootk]	Commanded Gear	= 3rd Gear				

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

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABL	E CONDITIONS	TIME REQUIRED	MIL ILLUM.
			Intrusive Test: Command 6th Gear						
			If attained Gear=6th gear Time	Table Based Time Please >= Refer to Table 3 in supporting documents  Table Based Enable Time (Sec)					
			It the above condiations are true, Increment 5th gear fail counter					5th >= 3 Gear Fail Counts or	
			and C35R Fail counter					3-5R Clutch Fail Counts	
					PRNDL State defaulted	=	FALSE Boolean		
					inhibit RVT	=	FALSE Boolean		
					IMS fault pending indication	=	FALSE Boolean		
					TPS validity flag	=	TRUE Boolean		
					Hydraulic System Pressurized	=	TRUE Boolear		
					Minimum output speed for RVT	>=	0 RPM		
					A OR B		40		
					(A) Output speed enable	>=	16 RPM		
					(B) Accelerator Pedal enable	>=	0.5005 Pct		
					Common Enable Criteria				
					Ignition Voltage Lo	>=	8.5996 Volts		
					Ignition Voltage Hi	<=	31.999 Volts		
					Engine Speed Lo		400 RPM		
					Engine Speed Hi		7500 RPM		
					Engine Speed is within the allowable limits for	>=	5 Sec		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Throttle Position Signal valid			
					HSD Enabled			
					Transmission Fluid Temperature	>= -6.656 °C		
					Input Speed Sensor fault	= FALSE Boolean		
					Output Speed Sensor fault Default Gear Option is not			
					present			
				Disable Conditions:				
						ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Variable Bleed Solenoid (VBS)	P0777	Pressure Control (PC) Solinoid B Stuck On [C35R] (Steady State)	Fail Case 1 Case: Steady State 1st					One Trip
			Attained Gear slip	>= 400 RPM				
			If the Above is True for Time	>= Refer to Table				
			Intrusive test: (CBR1 clutch exhausted)					
			Gear Ratio	<= 1.608642578				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			Gear Ratio If the above parameters are true	>=	1.455444336				
								Fail >= 1.1 Timer (Sec) Fail	
								>= 2 Count in 1st Gear or	
			Fail Case Case: Steady State 2nd					Total >= 3 Fail Counts	
			2 Case. Steady State 210 gear		Table Based value Please				
			Max Delta Output Speed Hysteresis	>=	Refer to 3D Table 1 in supporting documents				
			Min Delta Output Speed Hysteresis	>=	Table Based value Please Refer to 3D Table 2 in supporting documents				
			If the Above is True for Time	>=	Table Based Time Please Refer to Table 17 in supporting documents				
			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 Gear Ratio If the above parameters are true		1.608642578 1.455444336			Fail >= 1.1 Timer (Sec)	
								>= 3	
			Gase: Steady State 4th  Gear  Max Delta Output Speed Hysteresis	>=	Table Based value Please Refer to 3D Table 1 in supporting documents				
			Min Delta Output Speed Hysteresis	>=	Table Based value Please Refer to 3D Table 2 in supporting documents				
			If the Above is True for Time		Table Based Time Please Refer to Table 17 in supporting documents				
			Intrusive test: (C1234 clutch exhausted) Gear Ratio	<=	0.89465332				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			Gear Ratio If the above parameters are true				Fail	
							>= 1.1 Timer (Sec) Fail	
							>= 3 Count in 4th Gear or	
			<u>Fail Case</u> Case: Steady State 6th				Total >= 3 Fail Counts	
			gear Max Delta Output Speed Hysteresis	Table Based value Please Refer to 3D Table 1 in supporting documents				
			Min Delta Output Speed Hysteresis	Table Based value Please Refer to 3D Table 2 in supporting documents				
			If the Above is True for Time					
			Intrusive test: (CB26 clutch exhausted)					
			Gear Ratio	<= 0.89465332			Fail >= 1.1 Timer (Sec)	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENAB	LE COND	ITIONS	TIME	REQ	UIRED	MIL ILLUM.
			Gear Ratio	>= 0.809448242					>=	3	counts	
			If the above parameters									
			are true									
									>=	1.1	Fail Timer	
										1.1	(Sec)	
											Fail	
									>=	3	Count	
											in 6th Gear	
											or	
											Total	
									>=	3	Fail	
					DDNDL Over defected		EAL 05				Counts	
					PRNDL State defaulted inhibit RVT	=		Boolean Boolean				
					IMS fault pending indication	=		Boolean				
					output speed		0	RPM				
					TPS validity flag			Boolean				
					HSD Enabled	=		Boolean				
					Hydraulic_System_Pressurize	=	TRUF	Boolean				
					d			200.00				
					Minimum output speed for RVT	>=	0	Nm				
					A OR B							
					(A) Output speed enable	>=	16	Nm				
					(B) Accelerator Pedal enable		0.5005	Nm				
						/-						
					Ignition Voltage Lo	>=	8.5996					
					lgnition Voltage Hi Engine Speed Lo	<= >=	31.999 400	Volts RPM				
					Engine Speed Lo		7500	RPM				
					Engine Speed is within the allowable limits for		5	Sec				
					if Attained Gear=1st FW Accelerator Pedal enable		5.0003	Pct				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD	VALUE	SECONDARY PARAMETERS	ENABL	E COND	ITIONS	TIME REQUIRED	MIL ILLUM.
						Disable Conditions:	if Attained Gear=1st FW Engine Torque Enable if Attained Gear=1st FW Engine Torque Enable Transmission Fluid Temperature Input Speed Sensor fault Output Speed Sensor fault MIL not Illuminated for DTC's:	ECM: P0103, P0108, P0174, P0202, P0205,		°C  Boolean  Boolean  0717, P182E  00102, P0107, P0172, P0201, P0204, P0204, P0207,		
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		P0302, P0305,	P0303, F P0306, F P0401, I	P0304, P0307,		One Trip
			Primary Oncoming Clutch Pressure Command Status Primary Offgoing Clutch Pressure Command Status Range Shift Status	=	Maximum pressurized  Clutch exhaust command  Initial Clutch Control							

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD	VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			Attained Gear Slip	<=	40	RPM				
			If the above conditions are true run appropriate Fail 1 Timers Below:							
			fail timer 1 (3-1 shifting with Closed Throttle)	>=	0.5	Fail Time (Sec)				
			fail timer 1 (3-2 shifting with Throttle)	>=	0.299804688	Fail Time (Sec)				
			fail timer 1 (3-2 shifting with Closed Throttle)	>=	0.5	Fail Time (Sec)				
			fail timer 1 (3-4 shifting with Throttle)	>=	0.299804688	Fail Time (Sec)				
			fail timer 1 (3-4shifting with Closed Throttle)	>=	0.5	Fail Time (Sec)				
			fail timer 1 (3-5 shifting with Throttle)	>=	0.299804688	Fail Time (Sec)				
			fail timer 1 (3-5 shifting with Closed Throttle)	>=	0.5	Fail Time (Sec)				
			fail timer 1 (5-3 shifting with Throttle)	>=	0.299804688	Fail Time (Sec)				
			fail timer 1 (5-3 shifting with Closed Throttle)	>=	0.5	Fail Time (Sec)				
			fail timer 1 (5-4 shifting with Throttle)	>=	0.299804688	Fail Time (Sec)				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			fail timer 1 (5-4 shifting with Closed Throttle)	>= 0.5 Fail Time (Sec)				
			fail timer 1 (5-6 shifting with Throttle)	>= 0.299804688 Fail Time (Sec)				
			fail timer 1 (5-6 shifting with Closed Throttle)	>= 0.5 Fail Time (Sec)				
			If Attained Gear Slip is Less than Above Cal Increment Fail Timers				Total Fail Time = (Fail 1 + Fail 2) See Enabl e Timer s for >= Fail sec Timer 1, and Refer ence Suppo rting Table 15 for Fail Timer 2	
			If fail timer is greater than threshold increment corresponding gear fail counter and total fail counter					

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			3rd gear fail counter				3rd >= 3 gear fail counts	
			5th gear fail counter				OR 5th >= 3 gear fail counts OR	
			Total fail counter				>= 5 total fail counts	
					Trans oil temperature	> 255.99 °C		
					Input Speed Sensor fault	= FALSE Boolean		
					Output Speed Sensor fault	= FALSE Boolean		
					Command / Attained Gear	≠ 1st Boolean		
					High Side Driver ON	= TRUE Boolean		
					output speed limit for TUT	>= 100 RPM		
					input speed limit for TUT	>= 150 RPM		
					TUT Enable temperature	>= -6.656 °C		
					PRNDL state defaulted	= FALSE Boolean		
					IMS Fault Pending	= FALSE Boolean		
					Service Fast Learn Mode			
					HSD Enabled	= TRUE Boolean		
					Default Gear Option is not present			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
				Disable Conditions:		TCM: P0716, P0717, P0722, P0723, P182E		
						ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Variable Bleed Solenoid (VBS)	P0796	Pressure Control (PC) Solenoid C Stuck Off [C456] (Steady State)	<u>Fail Case</u> <u>1</u> Case: Steady State 4th Gear					One Trip
			Gear slip	>= 400 RPM			Pleas e See Table 5 For Neutral Time Cal	
			Intrusive test: commanded 5th gear					
			lf attained Gear ≠5th for time	Table Based Time Please >= Refer to Table 3 in supporting documents  Table Based Enable Time (Sec)				
			if the above conditions have been met					

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			Increment 4th Gear Fail Counter				4th >= 3 Gear Fail Count	
			and C456 Fail Counters				OR C456 >= 14 Fail Counts	
			Fail Case 2 Case: Steady State 5th Gear				Pleas	
			Gear slip	>= 400 RPM			e See Table Neutral Fraction Seconds Time Cal	
			Intrusive test: commanded 6th gear					
			If attained Gear ≠ 6th for time	Table Based Time Please Refer to Table 3 in supporting documents  Table Based Enable Time (Sec)				
			if the above conditions have been met					
			Increment 5th Gear Fail Counter				>= 3 5th Gear Fail Count	
			and C456 Fail Counters				OR C456 >= 14 Fail Counts	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENAB	LE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			Fail Case Case: Steady State 6th 3 Gear					Pleas	
			Gear slip	>= 400 RPM				e See Table Timer Neutr al Time Cal	
			Intrusive test: commanded 5th gear						
			If attained Gear ≠ 5th for time						
			if the above conditions have been met						
			Increment 6th Gear Fail Counter and C456 Fail Counter					>= 3 Gear Fail Count	
			and C456 Fail Counter					OR C456 >= 14 Fail Counts	
					PRNDL State defaulted inhibit RVT	=	FALSE Boolean FALSE Boolean		
					IMS fault pending indication	=	FALSE Boolean		
					TPS validity flag		TRUE Boolean		
					Hydraulic System Pressurized Minimum output speed for RVT A OR B	>=	TRUE Boolean		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					(A) Output speed enable	>= 16 RPM		
					(B) Accelerator Pedal enable	>= 0.5005 Pct		
					Common Enable Criteria			
					Ignition Voltage Lo	>= 8.5996 Volts		
					Ignition Voltage Hi			
					Engine Speed Lo			
					Engine Speed Hi			
					Engine Speed is within the allowable limits for			
					Throttle Position Signal valid	= TRUE Boolean		
					HSD Enabled	= TRUE Boolean		
					Transmission Fluid Temperature	>= -6.656 °C		
					Input Speed Sensor fault			
					OutputSpeed Sensor fault	= FALSE Boolean		
					Default Gear Option is not present			
				Disable Conditions:		TCM: P0716, P0717, P0722, P0723, P182E		
						ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Variable Bleed Solenoid (VBS)	P0797	Pressure Control (PC) Solenoid C Stuck On [C456] (Steady	Fail Case  Case: Steady State 1st					One Trip
(.20)		State)	Attained Gear slip	>= 400 RPM				

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 4 in supporting documents  Table Based Enable Time (Sec)				
			Intrusive test: (CBR1 clutch exhausted)						
			Gear Ratio		1.209594727				
			Gear Ratio  If the above parameters	>=	1.094360352				
			are true						
								Fail >= 1.1 Timer (Sec)	
								Fail >= 2 Count in 1st Gear	
								or Total >= 3 Fail Counts	
			Fail Case 2 Case Steady State 2nd					Count	
			Max Delta Output Speed Hysteresis	>=	Table Based value Please Refer to 3D Table 1 in supporting documents				
			Min Delta Output Speed Hysteresis	>=	Table Based value Please Refer to 3D Table 2 in supporting documents				

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				
			Intrusive test: (CB26 clutch exhausted)					
			Gear Ratio Gear Ratio If the above parameters are true	>= 1.094360352				
							Fail >= 1.1 Timer (Sec)	
							Fail >= 3 Count in 2nd Gear	
							or Total >= 3 fail counts	
			Fail Case  Case Steady State 3rd					
			Max Delta Output Speed Hysteresis					
			Min Delta Output Speed Hysteresis	Table Based value Please Refer to 3D Table 2 in supporting documents				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENAB	LE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			If the Above is True for Time	Table Based Time Please Refer to Table 17 in Supporting documents					
			Intrusive test: (C35R clutch exhausted)						
			Gear Ratio Gear Ratio	<= 1.209594727 >= 1.094360352					
			If the above parameters are true						
								Fail >= 1.1 Timer (Sec)	
								Fail >= 3 Count in 3rd Gear	
								OR Total >= 3 Fail Counts	
					PRNDL State defaulted	=	FALSE Boolean	Counts	
					inhibit RVT  IMS fault pending indication	=	FALSE Boolean FALSE Boolean		
					output speed	>=	0 RPM		
					TPS validity flag HSD Enabled	=	TRUE Boolean TRUE Boolean		
					Hydraulic_System_Pressurize d	=	TRUE Boolean		
					Minimum output speed for RVT	>=	0 Nm		
					A OR B (A) Output speed enable	>=	16 Nm		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					(B) Accelerator Pedal enable  Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for if Attained Gear=1st FW Accelerator Pedal enable if Attained Gear=1st FW Engine Torque Enable if Attained Gear=1st FW Engine Torque Enable Transmission Fluid Temperature Input Speed Sensor fault Output Speed Sensor fault	>= 8.5996 Volts <= 31.999 Volts >= 400 RPM <= 7500 RPM >= 5 Sec >= 5.0003 Pct >= 5 Nm <= 8191.9 Nm >= -6.656 °C = FALSE Boolean		
				Disable Conditions:		- IRUE		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD	VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
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 Attained Gear Slip		Initial Clutch Control 40	RPM				
			If the above conditions are true increment appropriate Fail 1 Timers Below:							
			fail timer 1 (4-1 shifting with throttle)	>=	0.299804688	Fail Time (Sec)				
			fail timer 1 (4-1 shifting without throttle)	>=	0.5	Fail Time (Sec)				
			fail timer 1 (4-2 shifting with throttle)	>=	0.299804688	Fail Time (Sec)				
			fail timer 1 (4-2 shifting without throttle)	>=	0.5	Fail Time (Sec)				
			fail timer 1 (4-3 shifting with throttle)	>=	0.299804688	Fail Time (Sec)				
			fail timer 1 (4-3 shifting without throttle)	>=	0.5	Fail Time (Sec)				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD V	'ALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			fail timer 1 (5-3 shifting with throttle)	>=	0.299804688	Fail Time (Sec)				
			fail timer 1 (5-3 shifting without throttle)	>=		Fail Time (Sec)				
			fail timer 1 (6-2 shifting with throttle)	>=		Fail Time (Sec)				
			fail timer 1 (6-2 shifting without throttle)	>=		Fail Time (Sec)				
			If Attained Gear Slip is Less than Above Cal Increment Fail Timers						Total Fail Time = (Fail 1 + Fail 2) See Enabl e Timer s for >= Fail sec Timer 1, and Refer ence Suppo rting Table 15 for Fail Timer 2	
			If fail timer is greater than threshold increment corresponding gear fail counter and total fail counter						2	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			4th gear fail counter				Fail Counter >= 3 From 4th Gear OR	
			5th gear fail counter				Fail Counter >= 3 From 5th Gear	
			6th gear fail counter				OR Fail Counter >= 3 From 6th Gear	
			Total fail counter				OR Total >= 5 Fail Counter	
					Trans oil temperature Input Speed Sensor fault Output Speed Sensor fault Command / Attained Gear High Side Driver ON output speed limit for TUT input speed limit for TUT TUT Enable temperature PRNDL state defaulted IMS Fault Pending Service Fast Learn Mode	>= 100 RPM >= 150 RPM >= -6.656 °C = FALSE Boolean = FALSE Boolean		
					Service Fast Learn Mode HSD Enabled	= FALSE Boolean		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	Tŀ	HRESHOLD	VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
						Disable Conditions:		TCM: P0716, P0717, P0722, P0723, P182E  ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Tap Up Tap Down Switch (TUTD)	P0815	Upshift Switch Circuit	Fail Case Tap Up Switch Stuck in the Up Position in Range 1 Enabled	=	0	Boolean				Special No Trip
			Tap Up Switch Stuck in the Up Position in Range 2 Enabled	=	0	Boolean				
			Tap Up Switch Stuck in the Up Position in Range 3 Enabled	=	0	Boolean				
			Tap Up Switch Stuck in the Up Position in Range 4 Enabled	=	0	Boolean				
			Tap Up Switch Stuck in the Up Position in Range 5 Enabled	=	0	Boolean				
			Tap Up Switch Stuck in the Up Position in Range 6 Enabled	=	0	Boolean				
			Tap Up Switch Stuck in the Up Position in Neutral Enabled	=	1	Boolean				
			Tap Up Switch Stuck in the Up Position in Park Enabled		1	Boolean				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD	D VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			Tap Up Switch Stuck in the Up Position in Reverse Enabled	=	0	Boolean				
			Tap Up Switch ON	=	TRUE	Boolean			Fail >= 1 Time (Sec)	
			Fail Case Tap Up Switch Stuck in 2 the Up Position in Range 1 Enabled	=	1	Boolean				
			Tap Up Switch Stuck in the Up Position in Range 2 Enabled	=	1	Boolean				
			Tap Up Switch Stuck in the Up Position in Range 3 Enabled	=	1	Boolean				
			Tap Up Switch Stuck in the Up Position in Range 4 Enabled	=	1	Boolean				
			Tap Up Switch Stuck in the Up Position in Range 5 Enabled	=	1	Boolean				
			Tap Up Switch Stuck in the Up Position in Range 6 Enabled	=	1	Boolean				
			Tap Up Switch Stuck in the Up Position in Neutral Enabled	=	0	Boolean				
			Tap Up Switch Stuck in the Up Position in Park Enabled	=	0	Boolean				
			Tap Up Switch Stuck in the Up Position in Reverse Enabled	=	0	Boolean				
			Tap Up Switch ON	=	TRUE	Boolean				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			NOTE: Both Failcase1 and Failcase 2 Must Be Met				Fail >= 600 Time (Sec)	
					Time Since Last Range Change	(Sec)		
					Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo	<= 31.999 Volts >= 400 RPM		
					Engine Speed Hi Engine Speed is within the allowable limits for	5 0		
					P0815 Status is	Test Failed This ≠ Key On or Fault Active		
				Disable Conditions:	MIL not Illuminated for DTC's:			
						ECM: None		
Tap Up Tap Down Switch (TUTD)	P0816	Downshift Switch Circuit	Fail Case  1 Tap Down Switch Stuck in the Down Position in Range 1 Enabled	= 0 Boolean				Special No Trip

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD	D VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			Tap Down Switch Stuck in the Down Position in Range 2 Enabled	=	0	Boolean				
			Tap Down Switch Stuck in the Down Position in Range 3 Enabled	=	0	Boolean				
			Tap Down Switch Stuck in the Down Position in Range 4 Enabled	=	0	Boolean				
			Tap Down Switch Stuck in the Down Position in Range 5 Enabled	=	0	Boolean				
			Tap Down Switch Stuck in the Down Position in Range 6 Enabled	=	0	Boolean				
			Tap Down Switch Stuck in the Down Position in Range Neutral Enabled	=	1	Boolean				
			Tap Down Switch Stuck in the Down Position in Range Park Enabled	=	1	Boolean				
			Tap Down Switch Stuck in the Down Position in Range Reverse Enabled	=	0	Boolean				
			Tap Down Switch ON	=	TRUE	Boolean			>= 1 sec	
			Fail Case 2 Tap Down Switch Stuck in the Down Position in Range 1 Enabled	=	1	Boolean				
			Tap Down Switch Stuck in the Down Position in Range 2 Enabled	=	1	Boolean				
			Tap Down Switch Stuck in the Down Position in Range 3 Enabled	=	1	Boolean				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLI	D VALUE	SECONDARY PARAMETERS	ENABL	E CONDIT	TIONS	TIME REQUIRED	MIL ILLUM.
			Tap Down Switch Stuck in the Down Position in Range 4 Enabled	=	1	Boolean						
			Tap Down Switch Stuck in the Down Position in Range 5 Enabled	=	1	Boolean						
			Tap Down Switch Stuck in the Down Position in Range 6 Enabled	=	1	Boolean						
			Tap Down Switch Stuck in the Down Position in Neutral Enabled	=	0	Boolean						
			Tap Down Switch Stuck in the Down Position in Park Enabled	=	0	Boolean						
			Tap Down Switch Stuck in the Down Position in Reverse Enabled	=	0	Boolean						
			Tap Down Switch ON NOTE: Both Failcase1 and Failcase 2 Must Be Met	=	TRUE	Boolean					>= 600 sec	
							Time Since Last Range Change	>=	1	Enable Time		
							Ignition Voltage Lo	>=	8.5996	(Sec) Volts		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD	VALUE	SECONDARY PARAMETERS	ENABL	E CONDI	TIONS	TIME	REQUII	RED	MIL ILLUM.
						Ignition Voltage Hi	<=	31.999					
						Engine Speed Lo Engine Speed Hi	>= <=	400 7500	RPM RPM				
						Engine Speed is within the							
						allowable limits for	>=	5	Sec				
						P0816 Status is	<b>≠</b>	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					Fail	Special No Trip
Tap Up Tap Down Switch (TUTD)	P0826	Up and Down Shift Switch Circuit	TUTD Circuit Reads Invalid Voltage	= TRUE	Boolean					>=	60	Time (Sec)	
						Ignition Voltage Lo	>=	8.5996	Volts			()	
						Ignition Voltage Hi	<=	31.999					
						Engine Speed Lo	>=	400	RPM				
						Engine Speed Hi	<=	7500	RPM				
						Engine Speed is within the allowable limits for	>=	5	Sec				
						P0826 Status is	<b>≠</b>	Test Failed This Key On or Fault Active					

6L80/6L90 COMMON SECTION

1 OF 8 SECTIONS

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD	VALUE	SECONDARY PARAMETERS	ENABL	E CONDI	TIONS	TIME REQUIRED	MIL ILLUM.
						Disable Conditions:		TCM: P1761 ECM: None				
Transmission Fluid Pressure Switch	P0872	Transmission Fluid Pressure (TFP) Sensor C Circuit Low Voltage	CB26 Hydraulic pressure Hydraulic Delay Timer		50 See Table 8 fo Delay Timer							Special No Trip
			(Table Based)  Check for Switch to be in Exhausted Position after delay, If so then Increment Fail Counter		Cal	360					>= 10 Fail Counts	
			Note: Subsequent fail counts require CB26 pressure above this value to re-enable fail logic. Results in one fail count per clutch transition	>	50	Кра						
							Transmission Fluid Temperature Lo Transmission Fluid Temperature Hyst Hi (disable above this)	>= Not >=	-6.656 120	°C		
							Transmission Fluid Temperature Hyst Lo (enable below this)	<=	255.99	°C		
							Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi	<= >=	8.5996 31.999 400 7500			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
				Disable Conditions		= FALSE = TRUE = Normal = TRUE >= 550 RPM		
Transmission Fluid Pressure Switch	P0873	Transmission Fluid Pressure (TFP) Sensor C Circuit High Voltage	CB26 Hydraulic Pressure  Hydraulic Delay Timer (Table Based)  Check for Switch to be in Pressurized Position after delay, If so then Increment Fail Counter	See Table 8 for >= Delay Timer Sec Cal			>= 15 Fail Counts	Special No Trip
			Note: Subsequent fail counts require CB26 pressure below this value to re-enable fail logic. Results in one fail count per clutch transition	< 700 kpa	Transmission Fluid Temperature Lo	>= -6.656 °C		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Transmission Fluid Temperature Hyst Hi (disable above this)	Not >= 120 °C		
					Transmission Fluid Temperature Hyst Lo (enable below this)	<= 255.99 °C		
					Ignition Voltage Lo			
					Ignition Voltage Hi			
					Engine Speed Lo Engine Speed Hi			
					Engine Speed is within the allowable limits for	>= 5 Sec		
					Default Gear Action			
					High Side Driver ON			
					RVT Status	= Normal		
					Hydraulic Pressure Available			
					Engine Speed Min	>= 550 RPM		
				Disa Conditio				
						LOW. NOTIC		
Transmission Fluid Pressure Switch	P0877	Transmission Fluid Pressure (TFP) Sensor D Circuit Low Voltage	C1234 Hydraulic pressure					Special No Trip
			Hydraulic Delay Timer (Table Based)	See Table 6 for >= Delay Timer Sec Cal				

Check for Switch to be in Exhausted Position after debt in State Institute of the Position after Switch Institute of the Position after Switch Institute of the Position after Switch Institute of the Position Institute of the P	COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABL	LE CONDI	TIONS	TIME REQUIRED	MIL ILLUM.
counts require C1234 pressure above this value to re-enable fall logic. Results in one fail count per clutch transition  Transmission Fluid Temperature Lo  Transmission Fluid Temperature Hyst Hi (disable Above this)  Transmission Fluid Temperature Hyst Hi (disable Above this)  Transmission Fluid Temperature Hyst Hi (disable Above this)  Interperature Hyst Lo (enable below this)  Ignition Voltage Lo  Ignition Voltage Hi  Engine Speed Lo  Engine Speed is within the allowable limits for Default Gear Action  High Side Driver ON  ETRUE  Hydraulic Pressure Available = TRUE				Exhausted Position after delay, If so then							
Temperature Lo  Transmission Fluid Temperature Hyst Hi (disable above this)  Transmission Fluid Temperature Hyst Lo (enable below this)  Ignition Voltage Lo Ignition Voltage Hi Engine Speed				counts require C1234 pressure above this value to re-enable fail logic. Results in one fail count	> 50 kpa						
Temperature Hyst Hi (disable above this)  Transmission Fluid Temperature Hyst Lo (enable below this)  Ignition Voltage Lo lengine Speed Lo lengine Speed Lo lengine Speed Lo lengine Speed Hi len							>=	-6.656	°C		
Temperature Hyst Lo (enable below this)  Ignition Voltage Lo >= 8.5996 Volts Ignition Voltage Hi <= 31.999 Volts Engine Speed Lo						Temperature Hyst Hi (disable	Not >=	120	°C		
Ignition Voltage Hi <= 31.999 Volts Engine Speed Lo >= 400 RPM Engine Speed Hi <= 7500 RPM  Engine Speed is within the allowable limits for Default Gear Action = FALSE High Side Driver ON = TRUE  RVT Status = Normal  Hydraulic Pressure Available = TRUE						Temperature Hyst Lo (enable		255.99	°C		
Engine Speed Lo >= 400 RPM Engine Speed Hi <= 7500 RPM  Engine Speed is within the allowable limits for  Default Gear Action = FALSE High Side Driver ON = TRUE  RVT Status = Normal  Hydraulic Pressure Available = TRUE											
Engine Speed Hi <= 7500 RPM  Engine Speed is within the allowable limits for Default Gear Action = FALSE High Side Driver ON = TRUE  RVT Status = Normal  Hydraulic Pressure Available = TRUE											
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											
High Side Driver ON = TRUE  RVT Status = Normal  Hydraulic Pressure Available = TRUE						Engine Speed is within the					
RVT Status = Normal  Hydraulic Pressure Available = TRUE											
Hydraulic Pressure Available = TRUE						· ·	=	TRUE			
						RVT Status	=	Normal			
Engine Speed Min >= 550 RPM						Hydraulic Pressure Available	=	TRUE			
						Engine Speed Min	>=	550	RPM		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD	VALUE	SECONDARY PARAMETERS	ENABLE CO	NDITIONS	TIME REQUIRED	MIL ILLUM.
						Disable Conditions:		TCM: P071 P0713, P07 P0722, P07: P0742, P07: P0973, P09 P0977, P19	6, P0717, 23, P0751, 66, P0757, 74, P0976, 15, P182E		
Transmission Fluid Pressure Switch	P0878	Transmission Fluid Pressure (TFP) Sensor D Circuit High Voltage	C1234 Hydraulic pressure  Hydraulic Delay Timer (Table Based)  Check for Switch to be in Pressurized Position after delay, If so then Increment Fail Counter	>=	700 See Table 6 fc Delay Timer Cal					>= 6 Fail >= 6 Counts	Special No Trip
			Note: Subsequent fail counts require C1234 pressure below this value to re-enable fail logic. Results in one fail count per clutch transition		700	Кра					
							Transmission Fluid Temperature Lo Transmission Fluid Temperature Hyst Hi (disable above this)	>= -6.0 Not >= 12	956 °C		
							Transmission Fluid Temperature Hyst Lo (enable below this) Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi	>= 8.5 <= 31. >= 40	996 Volts 999 Volts 0 RPM		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
				Disa Condition		= FALSE = TRUE = Normal = TRUE >= 550 RPM		
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		<pre>&lt;= 31.999 Volts &gt;= 400 RPM &lt;= 7500 RPM &gt;= 5 Sec TCM:</pre>	>= 1.5 Time (Sec)  Sample out of 1.875 Time (Sec)	One Trip

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLI	) VALUE	SECONDARY PARAMETERS	ENABL	E CONDI	TIONS	TIME REQ	UIRED	MIL ILLUM.
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)	Two Trips
										out of 5	Sample Time (Sec)	
						lgnition Voltage Ignition Voltage	>= <=	8.5996 31.999	Volts Volts			
						Engine Speed	>=	400	RPM			
						Engine Speed		7500	RPM			
						Engine Speed is within the allowable limits for	>=	5	Sec			
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None					
							ECM: None					
Variable Bleed Solenoid (VBS)	P0966	Pressure Control (PC) Solenoid B Control Circuit Low Voltage (C35R VBS)	The HWIO reports a low voltage (ground short) error flag	= TRUE	Boolean					>= 0.3	Fail Time (Sec)	One Trip
										out of 0.375	Sample Time (Sec)	
						Ignition Voltage	>= <=	8.5996	Volts Volts			
						lgnition Voltage Engine Speed	>=	31.999 400	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				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
				Disable Conditions:				
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 Time (Sec)  Sample out of 0.375 Time (Sec)	One Trip
					Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the	<= 31.999 Volts >= 400 RPM <= 7500 RPM	(668)	
					P0967 Status is not	Test Failed		
				Disable Conditions:				
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			Fail >= 0.3 Time (Sec) Sample	One Trip
							out of 0.375 Time (Sec)	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD	VALUE	SECONDARY PARAMETERS	ENABL	E CONDI	ΓIONS	TIME REQU	JIRED	MIL ILLUM.
						P0970 Status is not	=	Test Failed This Key On or Fault Active				
						Ignition Voltage	>=	8.5996	Volts			
						Ignition Voltage	<=	31.999	Volts			
						Engine Speed	>=	400	RPM			
						Engine Speed	<=	7500	RPM			
						Engine Speed is within the allowable limits for	>=	5	Sec			
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None					
							ECM: None					
Variable Bleed Solenoid (VBS)	P0971	Pressure Control (PC) Solenoid C Control Circuit High Voltage (C456/CBR1 VBS)	The HWIO reports a high voltage (open or power short) error flag	= TRUE	Boolean					>= 0.3	Fail Time (Sec)	One Trip
										out of 0.375	Sample Time (Sec)	
						P0971 Status is not	II	Test Failed This Key On or Fault Active				
						Ignition Voltage	>=	8.5996	Volts			
						Ignition Voltage	<=	31.999	Volts			
						Engine Speed	>=	400	RPM			
						Engine Speed Engine Speed is within the	<=	7500	RPM			
						allowable limits for	>=	5	Sec			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD	VALUE	SECONDARY PARAMETERS	ENABL	E CONDI	TIONS	TIME	REQ	JIRED	MIL ILLUM.
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None						
								ECM: None						
Shift Solinoid	P0973	Shift Solenoid A Control Circuit Low (Mode 2 Solenoid)	The HWIO reports a low voltage (ground short) error flag	=	TRUE	Boolean					>=	1.2	Fail Time (Sec)	One Trip
											out of	1.5	Sample Time (Sec)	
							P0973 Status is not	=	Test Failed This Key On or Fault Active					
							Ignition Voltage		8.5996					
							Ignition Voltage		31.999					
							Engine Speed Engine Speed		400 7500	RPM 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)	Two Trips
											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.
					P0974 Status is not	Test Failed This Key On or Fault Active		
					lgnition Voltage Ignition Voltage Engine Speed Engine Speed	<= 31.999 Volts >= 400 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		
				Disable Conditions				
Mode 3 Multiplex Valve	P0976	Shift Solenoid BControl Circuit Low (Mode 3 Solenoid)	The HWIO reports a low voltage (ground short) error flag	= TRUE Boolean			>= 1.2 Sec	Two Trips
					P0976 Status is not	Test Failed This Key On or Fault Active	out of 1.5 Sec	
					lgnition Voltage Ignition Voltage Engine Speed Engine Speed			
					Engine Speed is within the allowable limits for	>= 5 Sec		
				Disable Conditions		TCM: None ECM: None		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOL	D VALUE	SECONDARY PARAMETERS	ENABL	E CONDI	TIONS	TIME REQU	JIRED	MIL ILLUM.
Mode 3 Multiplex Valve	P0977	Shift Solenoid B Control Circuit High (Mode 3 Solenoid)	The HWIO reports a high voltage (open or power short) error flag	=	TRUE	Boolean					>= 1.2	Sec	One Trip
											out of 1.5	Sec	
							P0977 Status is not	<b>II</b>	Test Failed This Key On or Fault Active				
							Ignition Voltage	>=	8.5996	Volts			
							Ignition Voltage		31.999	Volts			
							Engine Speed		400	RPM			
							Engine Speed		7500	RPM			
							Engine Speed is within the allowable limits for	>=	5	Sec			
						Disable Conditions:		TCM: None					
								ECM: None					
Transmission Fluid Pressure Switch		Transmission Fluid Pressure (TFP) Sensor E Circuit Low Voltage	CBR1/C456 Hydraulic pressure	<=	50	Кра							Special No Trip
			Hydraulic Delay Timer (Table Based)		See Table 9 f Delay Time Cal								
			Check for Switch to be in Exhausted Position after delay, If so then Increment Fail Counter								>= 18	Fail Counts	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			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 Transmission Fluid	>= -6.656 °C		
					Temperature Hyst Hi (disable above this)  Transmission Fluid	Not >= 120 °C		
					Temperature Hyst Lo (enable below this)	<= 255.99 °C		
					lgnition Voltage Lo Ignition Voltage Hi			
					Engine Speed Lo			
					Engine Speed Lo			
					Engine Speed is within the allowable limits for			
					Default Gear Action			
					High Side Driver ON	= TRUE		
					RVT Status			
					Hydraulic Pressure Available			
					Engine Speed Min	>= 550 RPM		
				Disable Conditions:		TCM: P0711, P0712, P0713, P0716, P0717, P0722, P0723, P0751, P0742, P0756, P0757, P0973, P0974, P0976, P0977, P1915, P182E ECM: None		

## 11 OBDG07 TRANS Diagnostics

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD	VALUE	SECONDARY PARAMETERS	ENABL	E CONDI	TIONS	TIME REQUIRED	MIL ILLUM.
Transmission Fluid Pressure Switch	P0990	Transmission Fluid Pressure (TFP) Sensor E Circuit High Voltage	CBR1/C456 Hydraulio pressure	>=	700	Kpa						Special No Trip
			Hydraulic Delay Timer (Table Based)	>=	See Table 9 fo Delay Timer Cal							
			Check for Switch to be in Pressurized Position after delay, If so then Increment Fail Counter								>= 15 Fail Counts	
			Note: Subsequent fail counts require C35R pressure above this value to re-enable fail logic. Results in one fail count per clutch transition	<	700	kpa						
							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)	<=	255.99	°C		
							lgnition Voltage Lo Ignition Voltage Hi	>= <=	8.5996 31.999	Volts Volts		
							Engine Speed Lo	>=	400	RPM		
							Engine Speed Hi Engine Speed is within the allowable limits for		7500 5	RPM 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 CONDITIO	NS	TIME REQU	IRED	MIL ILLUM.
						Disable Conditions:		TCM: P0711, P071 P0713, P0716, P07 P0722, P0723, P07 P0742, P0756, P07 P0973, P0974, P09 P0977, P1915, P18 ECM: None	17, 51, 57, 76,			
Internal Mode Switch (IMS)	P1915	Internal Mode Switch Does Not Indicate Park/Neutral (P/N) During Start	PRNDL State is The following events must occur Sequentially	<b>≠</b>	Park or Neutr	al Enumeration						One Trip
			Initial Engine speed	<=	50	RPM				>= 0.25	Enable Time (Sec)	
			Then Engine Speed Between Following Cals									
			Engine Speed Lo Hist	>=	50	RPM					Enable	
			Engine Speed Hi Hist	<=	480	RPM				>= 0.069	Time (Sec)	
			Then Final Engine Speed	>=	525	RPM						
			Final Transmission Input Speed	>=	200	RPM					Fail Time (Sec)	
							DTC has Ran this Key Cycle?	= FALSE Bo	olean			
							Ignition Voltage Lo		V			
							Ignition Voltage Hi Ignition Voltage Hyst High (enables above this value)		v v			
							Ignition Voltage Hyst Low (disabled below this value)	<= 2	V			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLI	D VALUE	SECONDARY PARAMETERS	ENABL	E CONDIT	TIONS	TIME	REQUIRED	MIL ILLUM.
						Transmission Output Speed	<=	90	rpm			
						P1915 Status is	<b>≠</b>	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					>=	Fa Coui 280 (25r loop	nts ns
			Ignition Voltage Low Hyst (run crank goes false when below this value)	2	Volts					Out of	Sam Coui (25r loop	nts ns
						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					

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
Variable Bleed Solenoid (VBS)	P2714	Pressure Control (PC) Solenoid D Stuck Off [CB26]	Fail Case 1 Case: Steady State 2nd Gear					One Trip
			Gear slip	>= 400 RPM			Pleas e See Table 5 For Neutral Timer (Sec) Time Cal	
			Intrusive test: commanded 3rd gear					
			If attained Gear = 3rd for Time	Table Based Time Please >= see Table 2 in Supporting Documents  Table Based Enable Time (Sec)				
			If Above Conditions have been met					
			Increment 2nd gear fail count				2nd Gear Fail Count or	
			and CB26 Fail Count				CB26 >= 14 Fail Count	
			Fail Case Case: Steady State 6th Gear				Place	
			Gear slip	>= 400 RPM			Pleas e See Table 5 For Neutral Timer (Sec) Time Cal	

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  If Above Conditions have	Table Based Time Please >= see Table 2 in Supporting Documents  Enable Time (Sec)			5th Gear	
			been met, Increment 5th gear fail counter and CB26 Fail Count		PRNDL State defaulted	= FALSE Boolear	>= 3 Fail Count or CB26 >= 14 Fail Count	
					inhibit RVT  IMS fault pending indication  TPS validity flag  Hydraulic System Pressurized	= FALSE Boolear = FALSE Boolear = TRUE Boolear		
					Minimum output speed for RVT A OR B (A) Output speed enable (B) Accelerator Pedal enable	>= 16 RPM		
					Common Enable Criteria Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the	>= 400 RPM <= 7500 RPM		
					allowable limits for Throttle Position Signal valid 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 Input Speed Sensor fault Output Speed Sensor fault Default Gear Option is not present	>= -6.656 °C = FALSE Boolean = FALSE Boolean		
					Disable Conditions:				
							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		
			Primary Offgoing Clutch						One Trip
Variable Bleed Solenoid (VBS)	P2715	Pressure Control (PC) Solenoid D Stuck On [CB26] (Dynamic)	is exhausted (See Table 13 in Supporting Documents for Exhaust Delay Timers)	=	TRUE Boolean				
			Primary Oncoming Clutch Pressure Command Status	=	Maximum pressurized				
			Primary Offgoing Clutch Pressure Command Status	=	Clutch exhaust command				
			Range Shift Status Attained Gear Slip		Initial Clutch Control 40 RPM				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD	VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			If above coditons are true, increment appropriate Fail 1 Timers Below:							
			fail timer 1 (2-1 shifting with throttle)	>=	0.299804688	Fail Time (Sec)				
			fail timer 1 (2-1 shifting without throttle)	>=	0.5	Fail Time (Sec)				
			fail timer 1 (2-3 shifting with throttle)	>=	0.299804688	Fail Time (Sec)				
			fail timer 1 (2-3 shifting without throttle)	>=	0.5	Fail Time (Sec)				
			fail timer 1 (2-4 shifting with throttle)	>=	0.299804688	Fail Time (Sec)				
			fail timer 1 (2-4 shifting without throttle)	>=	0.5	Fail Time (Sec)				
			fail timer 1 (6-4 shifting with throttle)	>=	0.299804688	Fail Time (Sec)				
			fail timer 1 (6-4 shifting without throttle)	>=	0.5	Fail Time (Sec)				
			fail timer 1 (6-5 shifting with throttle)	>=	0.299804688	Fail Time (Sec)				
			fail timer 1 (6-5 shifting without throttle)	>=	0.5	Fail Time (Sec)				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			If Attained Gear Slip is Less than Above Cal Increment Fail Timers				Total Fail Fail Time = (Fail 1 + Fail 2) See Enabl e Timer s for >= Fail sec Timer 1, and Refer ence Suppo rting Table 15 for Fail Timer 2	
			If fail timer is greater than threshold increment corresponding gear fail counter and total fail counter					
			2nd gear fail counter				Fail Counter >= 3 From 2nd Gear OR	
			6th gear fail counter				Fail Counter >= 3 From 6th Gear OR	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			total fail counter				Total >= 5 Fail Counter	
					Trans oil temperature Input Speed Sensor fault Output Speed Sensor fault Command / Attained Gear High Side Driver ON output speed limit for TUT input speed limit for TUT TUT Enable temperature PRNDL state defaulted IMS Fault Pending Service Fast Learn Mode HSD Enabled	= FALSE Boolean = FALSE Boolean ≠ 1st Boolean = TRUE Boolean >= 100 RPM >= 150 RPM >= -6.656 °C = FALSE Boolean = FALSE Boolean = 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)		Pressure Control (PC) Solenoid D Stuck On [CB26] (Steady State)	Fail Case  1 Case: Steady State 1st  Attained Gear slip	>= 400 RPM				One Trip

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			If the Above is True for Time	>=	Table Based Time Please Refer to Table 4 in supporting documents  Table Based Enable Time (Sec)				
			Intrusive test: (CBR1 clutch exhausted)						
			Gear Ratio Gear Ratio		2.482177734 2.245849609				
			If the above parameters are true						
								Fail >= 1.1 Timer (Sec)	
								Fail Count in 1st Gear	
								or Total >= 3 Fail Counts	
			Fail Case 2 Case: Steady State 3rd Gear					Count	
			Max Delta Output Speed Hysteresis	>=	Table Based value Please Refer to 3D Table 1 in supporting documents				
			Min Delta Output Speed Hysteresis	>=	Table Based value Please Refer to 3D Table 2 in supporting documents				

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					
			Intrusive test: (C35R clutch exhausted)					
			Gear Ratio Gear Ratio					
			If the above parameters are true					
							Fail >= 1.1 Timer (Sec)	
							Fail >= 3 Count in 3rd Gear	
							or Total >= 3 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				
			Min Delta Output Speed Hysteresis	Table Based value Please Refer to 3D Table 2 in supporting documents				

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					
			Intrusive test: (C1234 clutch exhausted)					
			Gear Ratio Gear Ratio	>= 0.633666992				
			If the above parameters are true				Fail >= 1.1 Timer (Sec) Fail	
							>= 3 Count in 4th Gear or Total	
			Fail Case Case: Steady State 5th Gear				>= 3 Fail Counts	
			Max Delta Output Speed Hysteresis					
			Min Delta Output Speed Hysteresis	Table Based value Please Refer to 3D Table 2 in supporting documents				

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					
			Intrusive test: (C35R clutch exhausted)						
			Gear Ratio						
			Gear Ratio	>= 0.633666992					
			If the above parameters are true						
								Fail >= 1.1 Timer (Sec)	
								Fail Count in 5th Gear	
								or	
								Total >= 3 Fail Counts	
					PRNDL State defaulted inhibit RVT	= =	FALSE Boolean FALSE Boolean		
					IMS fault pending indication	=	FALSE Boolean		
					output speed	>=	0 RPM		
					TPS validity flag HSD Enabled	=	TRUE Boolean		
					HSD Enabled Hydraulic_System_Pressurize	=	TRUE Boolean TRUE Boolean		
					d Minimum output speed for RVT	>=	0 Nm		
ĺ					A OR B (A) Output speed enable	>=	16 Nm		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD V	/ALUE	SECONDARY PARAMETERS	ENABI	LE CONDI	TIONS	TIME REQU	IRED	MIL ILLUM.
						(B) Accelerator Pedal enable	>=	0.5005	Nm			
						Ignition Voltage Lo	>=	8.5996	Volts			
						Ignition Voltage Hi	<=	31.999	Volts			
						Engine Speed Lo	>=	400	RPM			
						Engine Speed Hi Engine Speed is within the	<= >=	7500 5	RPM Sec			
						allowable limits for if Attained Gear=1st FW	>=	5.0003	Pct			
						Accelerator Pedal enable if Attained Gear=1st FW						
						Engine Torque Enable if Attained Gear=1st FW	>=	5	Nm			
						Engine Torque Enable	<=	8191.9	Nm			
						Transmission Fluid Temperature	>=	-6.656	°C			
						Input Speed Sensor fault	=	FALSE				
						Output Speed Sensor fault	=	FALSE	Boolean			
						Default Gear Option is not present	=	TRUE				
					Disable Conditions:	MIL not Illuminated for DTC's:		P0716, P0 2, P0723, F				
							P0103 P0108 P0174 P0202	P0101, P0 6, P0106, F 7, P0171, F 7, P0175, F 8, P0203, F 6, P0206, F	0107, 0172, 0201, 0204,			
							P0208 P0302 P0305	s, P0206, F 8, P0300, F 2, P0303, F 5, P0306, F 3, P0401, F	0301, 0304, 0307,			
Variable Bleed Solenoid (VBS)	P2720	Pressure Control (PC) Solenoid D Control Circuit Low (CB26 VBS)	The HWIO reports a low voltage (ground short) error flag	= TRUE	Boolean					>= 0.3	Fail Time (Sec)	One Trip

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS		ENABLE CONDITIONS		ENABLE CONDITIONS		JIRED	MIL ILLUM.
									out of 0.375	Sample Time (Sec)			
					P2770 Status is not	=	Test Failed This Key On or Fault Active						
					Ignition Voltage		8.5996	Volts					
					Ignition Voltage	<=	31.999	Volts					
					Engine Speed	>=	400	RPM					
					Engine Speed		7500	RPM					
					Engine Speed is within the allowable limits for	>=	5	Sec					
				Disable Conditions		TCM: None							
						ECM: None							
Variable Bleed Solenoid (VBS)	P2721	Pressure Control (PC) Solenoid D Control Circuit High (CB26 VBS)	The HWIO reports a high voltage (open or power short) error flag	= TRUE Boolean					>= 0.3	Fail Time (Sec)	One Trip		
									out of 0.375	Sample Time (Sec)			
					P2721 Status is not	=	Test Failed This Key On or Fault Active						
					Ignition Voltage	>=	8.5996	Volts					
					Ignition Voltage	<=	31.999	Volts					
					Engine Speed	>=	400	RPM					

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD	VALUE	SECONDARY PARAMETERS	ENABL	E CONDI	TIONS	TIME REQUIRED	MIL ILLUM
							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									One Trip
			Gear slip	>=	400	RPM					Pleas e See Table 5 For Neutr al Time	er
			Intrusive test: commanded 2nd gear								Cal	
			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								1st >= 3 Gea Fail Cour	r
			and C1234 fail counter								or C123 >= 14 Clutc Fail Coul	h

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			Fail Case Case: Steady State 2nd Gear				Pleas	
			Gear slip	>= 400 RPM			e See Table 5 For Neutral al Time Cal	
			Intrusive test: commanded 3rd gear				Gui	
			If attained Gear ≠ 3rd for Time					
			If Above Conditions have been met, Increment 2nd gear fail counter	ı			2nd Sear Fail Count	
			and C1234 fail counter				C1234 Clutch Fail Count	
			Fail Case Case: Steady State 3rd 3 Gear				Pleas	
			Gear slip	>= 400 RPM			e See Table 5 For Neutral Time Cal	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			Intrusive test: commanded 4th gear					
			If attained Gear ≠ 4th for time					
			If Above Conditions have been met, Increment 3rd gear fail counter				3rd >= 3 Gear Fail Count or	
			and C1234 fail counter				C1234 >= 14 Clutch Fail Count	
			<u>Fail Case</u> Case: Steady State 4th <u>4</u> Gear					
			Gear slip	>= 400 RPM			Pleas e See Table Neutral >= Neutral Time Cal	
			Intrusive test: commanded 5th gear					
			If attained Gear = 5th For Time	Table based Timer, Please See Table 3 in Supporting Documents  Table based (Sec)				
			If Above Conditions have been met, Increment 4th gear fail counter				4th >= 3 Gear Fail Count	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABI	LE COND	ITIONS	TIME REQ	UIRED	MIL ILLUM.
			and C1234 fail counter						>= 14	or C1234 Clutch Fail Count	
					PRNDL State defaulted inhibit RVT	=		Boolean Boolean			
					IMS fault pending indication			Boolean			
					TPS validity flag			Boolean			
					Hydraulic System Pressurized	=	TRUE	Boolean			
					Minimum output speed for RVT	>=	0	RPM			
					A OR B						
					(A) Output speed enable	>=	16	RPM			
					(B) Accelerator Pedal enable	>=	0.5005	Pct			
					Common Enable Criteria						
					Ignition Voltage Lo		8.5996				
					Ignition Voltage Hi	<=	31.999				
					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				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD	VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
						Disable Conditions:		TCM: P0716, P0717, P0722, P0723, P182E  ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Variable Bleed Solenoid (VBS)	P2724	Pressure Control (PC) Solenoid E Stuck On (Dynamic)	Primary Offgoing Clutch is exhausted (See Table 10 in Supporting Documents for Exhaust Delay Timers) Primary Oncoming Clutch	=	TRUE	Boolean				One Trip
			Pressure Command Status Primary Offgoing Clutch Pressure Command Status  Range Shift Status	= = ≠	Maximum pressurized  Clutch exhaus command  Initial Clutch Control	t				
			Attained Gear Slip  If the above conditions are true increment appropriate Fail 1 Timers Below:		40	RPM				
			fail timer 1 (2-6 shifting with throttle) fail timer 1 (2-6 shifting without throttle)	>=	0.299804688	sec				

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

## 11 OBDG07 TRANS Diagnostics

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				Fail Counter >= 3 From 2nd Gear	
			3rd gear fail counter				Fail Counter >= 3 From 3rd Gear	
			4th gear fail counter				Fail Counter >= 3 From 4th Gear	
			total fail counter				Total >= 5 Fail Counter	
					Trans oil temperature Input Speed Sensor fault Output Speed Sensor fault Command / Attained Gear High Side Driver ON output speed limit for TUT input speed limit for TUT TUT Enable temperature PRNDL state defaulted IMS Fault Pending Service Fast Learn Mode HSD Enabled	# 1st Boolean = TRUE Boolean >= 100 RPM >= 150 RPM >= -6.656 °C = FALSE Boolean = FALSE Boolean = FALSE 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		
Variable Bleed Solenoid (VBS)	P2724	Pressure Control (PC) Solenoid E Stuck On (Steady State)	Fail Case  1 Case: 5th Gear  Max Delta Output Speed Hysteresis	Table Based value Please Refer to 3D				One Trip
			Min Delta Output Speed Hysteresis	Table 2 in supporting documents				
			If the Above is True for Time	ne 17 in Sec supporting documents				
			Intrusive test: (C35R clutch exhausted)	d)				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			Gear Ratio Gear Ratio If the above parameters are true	<= >=	1.209594727 1.094360352				
								Fail >= 1.1 Timer (Sec) Fail	
								>= 3 Count in 5th Gear	
			Fail Case					Total >= 3 Fail Counts	
			2 Case: 6th Gear						
			Max Delta Output Speed Hysteresis	>=	Table Based value Please Refer to 3D Table 1 in supporting documents				
			Min Delta Output Speed Hysteresis	>=	Table Based value Please Refer to 3D Table 2 in supporting documents				
			If the Above is True for Time	>=	Table Based Time Please Refer to Table 17 in supporting documents				
			Intrusive test: (CB26 clutch exhausted)						

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENAB	LE COND	ITIONS	TIME	REQU	IRED	MIL ILLUM.
			Gear Ratio	<= 1.209594727								
			Gear Ratio	>= 1.094360352								
			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	=		Boolean				
					IMS fault pending indication	=		Boolean				
					output speed		0	RPM				
					TPS validity flag HSD Enabled			Boolean Boolean				
					Hydraulic_System_Pressurize	=		Boolean				
					Minimum output speed for RVT	>=	0	Nm				
					A OR B (A) Output speed enable	>=	16	Nm				
					(B) Accelerator Pedal enable		0.5005					
					Ignition Voltage Lo	>=	8.5996	Volts				
					Ignition Voltage Hi		31.999	Volts				
					Engine Speed Lo	>=	400	RPM				
					Engine Speed Hi Engine Speed is within the		7500	RPM				
					allowable limits for	>=	5	Sec				
					if Attained Gear=1st FW Accelerator Pedal enable	>=	5.0003	Pct				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					if Attained Gear=1st FW Engine Torque Enable	>= 5 Nm		
					if Attained Gear=1st FW Engine Torque Enable	<= 8191.9 Nm		
					Transmission Fluid Temperature			
					Input Speed Sensor fault			
					Output Speed Sensor fault Default Gear Option is not			
					present	= TRUE		
				Disable Conditions:				
						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			Fail >= 0.3 Time (Sec)	One Trip
							Sample out of 0.375 Time (Sec)	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD	VALUE	SECONDARY PARAMETERS	ENABI	E CONDI	TIONS	TIME REQU	UIRED	MIL ILLUM.
						P2729 Status is not	=	Test Failed This Key On or Fault Active				
						Ignition Voltage	>=	8.5996	Volt			
ĺ						Ignition Voltage	<=	31.999	Volt			
						Engine Speed	>=	400	RPM			
						Engine Speed	<=	7500	RPM			
						Engine Speed is within the allowable limits for	>=	5	Sec			
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None					
							ECM: None					
Variable Bleed Solenoid (VBS)	P2730	Pressure Control (PC) Solenoid E Control Circuit High (C1234 VBS)	The HWIO reports a high voltage (open or power short) error flag	= TRUE	Boolean					>= 0.3	Fail Time (Sec)	One Trip
										out of 0.375	Sample Time (Sec)	
						P2730 Status is not	=	Test Failed This Key On or Fault Active				
						Ignition Voltage	>=	8.5996	Volt			
						Ignition Voltage	<=	31.999	Volt			
						Engine Speed	>=	400	RPM			
						Engine Speed		7500	RPM			
						Engine Speed is within the allowable limits for	>=	5	Sec			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THE	RESHOLD	VALUE	SECONDARY PARAMETERS	ENABL	E CONDI	TIONS	TIME RE	QUIRED	MIL ILLUM.
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None					
Variable Bleed Solenoid (VBS)	P2763	Torque Converter Clutch Pressure High	The HWIO reports a low pressure/high voltage (open or power short) error flag	=	TRUE	Boolean					>= 4.4 out of 5	Fail Time (Sec) Sample Time (Sec)	Two Trips
							P2763 Status is not	=	Test Failed This Key On or Fault Active				
							Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the	<= >= <=	8.5996 31.999 400 7500				
							allowable limits for High Side Driver Enabled			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	One Trip

## 11 OBDG07 TRANS Diagnostics

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	-	THRESHOLD	O VALUE	SECONDARY PARAMETERS	ENABL	E CONDI	TIONS	TIME	: REQ	UIRED	MIL ILLUM.
											out of	5	MPH	
							P2764 Status is not	=	Test Failed This Key On or Fault Active					
							Ignition Voltage	>=	8.5996	Volt				
							Ignition Voltage	<=	31.999	Volt				
							Engine Speed	>=	400	RPM				
							Engine Speed	<=	7500	RPM				
							Engine Speed is within the allowable limits for	/-	5	Sec				
							High Side Driver Enabled	=	TRUE	Boolean	1			
						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 second s)	One Trip
			Delay timer	>=	0.1125	sec					Out of	70	Sample Counts (≈ 11 second s)	
							Stabilization delay Power Mode Ignition Voltage Lo Ignition Voltage Hi	>= = >= <=	3 Run 8.5996 31.999					

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRE	ESHOLD	VALUE	SECONDARY PARAMETERS	ENABL	E COND	TIONS	TIME	REQU	IRED	MIL ILLUM.
						Disable	MIL not Illuminated for							
						Conditions:	DTC's:	None						
								ECM: None						
														One Trip
Communication	U0100	Lost Communications with ECM (Engine Control Module)	CAN messages from ECM are not received by the TCM		RUE	Boolean					>=	12	sec	One mp
							Stabilization delay	>=	3	sec				
							Power Mode		Run					
							Ignition Voltage Lo	>=	8.5996	Volt				
							Ignition Voltage Hi	<=	31.999	Volt				
						Disable Conditions:	MIL not Illuminated for DTC's:							
								ECM: None						

# **Supporting Documents - 2D Tables**

Table 1									Units	3
Axis	0	64	128	192	256	320	384	448	512 Nm	
Curve	50	50	50	50	50	50	50	50	50 RPM	

Table 2					Units
	Axis	-6.67188	-6.65625	40	۰C
	Curve	409.5938	2	2	Sec

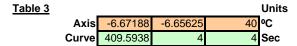


Table 4	_				Units
	Axis	-6.67188	-6.65625	40	۰C
	Curve	409.5938	2	2	Sec

Table 5	_				Units
	Axis	-6.67188	-6.65625	40	٥С
	Curve	409.5938	3	3	Sec

Table 6							Units
	Axis	-6.67188	-6.65625	40	80	120	۰C
	Curve	409	3.6	1.6	1.4	1.4	Sec

Table 7							Units
	Axis	-6.67188	-6.65625	40	80	120	°C
	Curve	409	3.4	1.4	1.3	1.2	Sec

Table 8							Units
	Axis	-6.67188	-6.65625	40	80	120	⁰С
	Curve	409	3.6	1.6	1.5	1.4	Sec

# **Supporting Documents - 2D Tables**

Table 9							Units				
	Axis	-6.67188	-6.65625	40	80	120	٥С				
	Curve	409	3.3	1.3	1.2	1.1	Sec				
	•						•				
<u>Table 10</u>	_						Units				
	Axis	-40	-20	0	30	110	oC				
	Curve	3.029297	1.857422	1.00293	0.754883	0.583984	Sec				
	_						_				
<u>Table 11</u>							Units				
	Axis	-40	-20	0	30	110					
	Curve	1.720703	1.108398	0.595703	0.359375	0.21582	Sec				
<b>T</b> 11 40											
<u>Table 12</u>		40	0.0	0	0.0	440	Units				
	Axis	-40	-20	0.841797	30	110					
	Curve	2.121094	1.393555	0.841797	0.642578	0.332031	Sec				
Table 13							Units				
Tubic 10	Axis	-40	-20	0	30	110	_				
		2.507813		0.499023	0.292969	0.126953					
					0						
Table 14							Units				
	Axis	-40	-20	0	30	110	٥С				
	Curve	2.972656	0.818359	0.47168	0.204102	0.132813	Sec				
	•			-			•				
<u>Table 15</u>											Units
	Axis	-40	-30	-20	-10	0		10	20	30	40 <b>°C</b>
	Curve	0	0	0	0	0		0	0	0	0 Sec
Table 40					l luita						
<u>Table 16</u>	Avia	6 67100	e eeeee	40	Units						
	Axis		-6.65625								
	Curve	409.5938	1.5	1.5	<b>Sec</b>						

## **Supporting Documents - 2D Tables**

i able 17	

	_			Units
Axis	-6.67188	-6.65625	40	°C
Curve	0.4	0.35	0.3	Sec

Table 18

_									Units
Axis	-40.1016	-40	-20	0	30	60	100	149	149.1016 °C
Curve	255.9961	50	45	40	34	25	20	20	255.9961 °C

**Table 19** 

_									Units
Axis	-40.1016	-40	-20	0	30	60	100	149	149.1016 °C
Curve	255.9961	50	45	40	34	25	20	20	255.9961 <b>℃</b>

Table 20

									Units
Axis	-40.1016	-40	-20	0	30	60	100	149	149.1016 <b>°C</b>
Curve	255.9961	10	8	8	8	8	8	8	255.9961 <b>℃</b>

## **Supporting Documents - 3D Tables**

## 3D\_Table 1

X-Axis Calibration	%
Y-Axis Calibration	°C
Table Calibration	RPM/Sec

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

## 3D\_Table 2

X-Axis Calibration	%
Y-Axis Calibration	°C
Table Calibration	RPM/Sec

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

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOL	D VALUE	SECONDARY PARAMETERS	ENABL	E CONDI	TIONS	TIME	E REQI	JIRED	MIL ILLUM.
Mode Switch	P071A	Transmission Mode Switch A Circuit	If Tow Haul / Winter Switch Active	=	TRUE	Boolean					>=	600	Fail Time (Sec)	Special No Trip
							Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for		8.5996 31.999 400 7500	Volts Volts RPM RPM				
						Disable Conditions:		TCM: P1762 ECM: None						
Variable Bleed Solenoid (VBS)	P0961	Pressure Control (PC) Solenoid A Control Circuit Rationality Test (Line Pressure VBS)	The HWIO reports an invalid voltage (out of range) error flag	=	TRUE	Boolean					>=	4.4	Fail Time (Sec)	Two Trips
											out of	5	Sample Time (Sec)	
							Ignition Voltage Ignition Voltage Engine Speed Engine Speed	>=	8.5996 31.999 400 7500					
							Engine Speed is within the allowable limits for		5	Sec				
						Disable Conditions:		TCM: None						
								ECM: None						

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOL	D VALUE	SECONDARY PARAMETERS	ENABI	LE CONI	DITIONS	TIME R	EQUIRED	MIL ILLUM.
Mode 2 Multiplex Valve	P1751	Shift valve 1 performance	Attained Gear Slip is  If Slip is Greater than the Above Cal Increment Fail Counter & Sample Counter	>=	100	RPM					>=	Counts	
							Once this evaluation is complete the system will allow the valve to get back into position by delaying the next test for	=	1	Seconds	Out of	5 Counts	-
							M2 Solenoid is Commanded On	=	TRUE	Boolean			
							Current Gear ≠ 2nd Gear	<b>≠</b>	2nd Gear	Gear			
							Calcaluted line pressure is	>=	1300	kPa			
							The test can begin when the M2 valve is verified to be in place because absolute value of attained gear slip and commanded gear slip is		110	RPM			
							Test is delayed by a calibrated amount of time to allow the M2 valve to get into position	_	0.5	Sec			
							Upshift is In Progress	=	FALSE	E Boolean			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENAB	LE COND	ITIONS	TIME REQUIRED	MIL ILLUM.
					Input Speed Sensor Signal Hyst High (enabled above this value)	>=	1175	RPM		
					Input Speed Sensor Signal Hyst Low (disabled below this value)	<=	900	RPM		
					The torque converter clutch has transition from Locked to Unlocked.	=	TRUE	Boolean		
					TCC Stuck On Enable Criteria:					
					Gear Ratio	<=	1.6393	Ratio		
l					Gear Ratio	>=	0.623	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		0	Boolean		
					If Stuck On During Upshift is enabled (See Above), Engine Torque Must be	>=	55	Nm		
					Down Shift In Progress	=	FALSE	Boolean		
					Current Gear	<b>≠</b>	1st Gear Locked	Boolean		
					Engine Torque Hi	<=	8191.9	Nm		
					Engine Torque Lo	>=	80	Nm		
					Current Range	<b>≠</b>	Neutral	Range		
					Current Range			Range		
					Transmission Sump Temperature		130	°C		
					Transmission Sump Temperature	<b>\-</b>	-6.656	°C		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABI	LE COND	ITIONS	TIME REQUIRED	MIL ILLUM.
					Throttle Position Hyst High	>=	8.0002	Pct		
					Throttle Position Hyst Low	<=	2.9999			
					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	=	FAI SE	Boolean		
					Air Purge Active	=		Boolean		
					Ignore Air Purge if value =	=	0	Boolean		
					TCC Mode	=	OFF			
					Common Enables:		0			
					Ignition Voltage	>=	8.5996	V		
					Ignition Voltage	<=	31.999			
					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	=		Boolean		
					P1751 Status is	<b>≠</b>	Test Failed This Key On			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
				Disable Conditions:		TCM: P0716, P0717, P0722, P0723, P0741, 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,		
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		P0305, P0306, P0307, P0308, P0401, P042E	>= 3 Fail >= 3 Counter	Special No Trip
					Tap Up Tap Down Message Health Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for	<= 7500 RPM	> 10 Timer (Sec)	
				Disable Conditions:		TCM: None ECM: None		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD	VALUE	SECONDARY PARAMETERS	ENABL	E COND	ITIONS	TIME	REQU	IIRED	MIL ILLUM.
Mode Switch	P1762	Transmission Mode Switch Signal Circuit (rolling count)	Rolling count value received from BCM does not match expected value	=	TRUE	Boolean					>=	3	Fail Counter	Special No Trip
											>		Sample Timer (Sec)	
							Pattern Switch Message Health		TRUE	Boolean				
							Engine Speed Lo Engine Speed Hi	>= <=	400 7500	RPM RPM				
							Engine Speed is within the allowable limits for	>=	5	Sec				
						Disable Conditions:	MIL not Illuminated for DTC's:	None						
								ECM: None						
Internal Mode Switch (IMS)	P182E	Internal Mode Switch - Circuit A Low Reported as Internal Mode Switch-Invalid Range	<u>Fail Case</u> 1  Current range	=	"Transitional 1"	Range State								One Trip
			Previous range	<b>≠</b>	CeTRGR_e_P RNDL_Drive6	Range State								
			Previous range	≠	CeTRGR_e_P RNDL_Drive5	Range State								
			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	ENAB	LE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			Engine Torque Engine Torque		-50 8191.75	Nm Nm					
			If the above conditions are present Increment Fail Timer							Fail >= 0.225 Second s	
			If Fail Timer has Expired then Increment Fail Counter							>= 15 Fail Counts	
			<u>Fail Case</u> <u>2</u> 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							Fail >= 0.225 Second s	
			If Fail Timer has Expired then Increment Fail Counter							>= 15 Fail Counts	
			Fail Case 3 Current range	=	"Transitional 13"		Previous range	<b>≠</b>	CeTRG R_e_P RNDL_ Drive2		
			Either the S1 or S3 Pressure Switch indicates "Pressure Present"	=	TRUE	Boolean	Previous range	≠	CeTRG R_e_P RNDL_ Drive1		
			Engine Torque	>=	-8192	Nm	IMS is 7 position configuration	=	1 Boolean		
			Engine Torque	<=	8191.75	Nm	If the "IMS 7 Position config" = 1 then the "previous range" criteria above must also be satsified when the "current range" = "Transitional 13"				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD	VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			If the above conditions are present Increment Fail Timer						>= 0.225 Second s	
			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				
			Steady State Engine Torque	>=	100	Nm				
			Steady State Engine Torque	<=	8191.75	Nm				
			If the above conditions are present Increment Fail Timer						>= 0.225 Second s	
			If the above Condtions have been met, Increment Fail Counter						>= 15 Fail Counts	
			<u>Fail Case</u> <u>5</u> Current range	=	"Transitional 11"					
1			Engine Torque	>=	-50	Nm				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	1	THRESHOLD	VALUE	SECONDARY PARAMETERS	ENABI	LE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			Either the S1 or S3 Pressure Switch indicates "Pressure Present"	=	TRUE	Boolean					
			If the above conditions are present Increment Fail Timer							>= 0.225 Second s	
			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	<b>≠</b>	"Transit ional 11"		
			A Open Circuit (See Definition)	=	FALSE	Boolean	or				
							Last positive state or	<b>≠</b>	Neutral		
							Previous transitional state	<b>≠</b>	Transiti onal 8 and Illegal		
							and	=	Open		
							PRNDL Circuit A	=	Circuit Closed		
							PRNDL Circuit B PRNDL Circuit C	=	Circuit		
							PRNDL Circuit P	=	Circuit  Open Circuit		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD VALUE	SECONDARY PARAMETERS	ENAB	LE CONDI	TIONS	TIME REQUIRED	MIL ILLUM.
			If the above Condtions are present, Increment Fail timer							>= 6.25 Second s	
			Fail Case  Current PRNDL State		PRNDL circuit ABCP = 1101						
			and Previous valid state		PRNDL circuit ABCP =1111 Range						
			Input Speed Reverse Trans Ratio Reverse Trans Ratio	<=	150 RPM 2.845825195 ratio 3.274169922 ratio						
			If the above Condtions are present, Increment Fail timer							>= 6.25 Second s	
			P182E will report test fail when any of the above 7 fail cases are met								
						Ignition Voltage Lo Ignition Voltage Hi	>= <=	8.5996 31.999	Volts		
						Vehicle Speed Lo Engine Speed Lo Engine Speed Hi	<= >= <=	511 400 7500	KPH RPM RPM		
						Engine Speed is within the allowable limits for Engine Torque Signal Valid	>=	5 TRUE	Sec Boolean		
					Disable Conditions:	MIL not Illuminated for					

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD	O VALUE	SECONDARY PARAMETERS	ENAB	LE CONDITIONS	TIME	REQUIR	ED	MIL ILLUM.
Transmission Output Speed Sensor (TOSS)	P0723	Output Speed Sensor Circuit Intermittent	Raw Output Speed	<b>&gt;=</b>	105	RPM				>=	0 T	nable ime Sec)	One Trip
			Output Speed Delta	<=	8191	RPM				>=	0 T	nable ime Sec)	
			Output Speed Drop	>	1000	RPM				>=	Sp C 1.5 Re r T	utput peed Prop ecove Fail Time Sec)	
							Range_Disable OR	=	FALSE Boolean				
							 Neutral_Range_Enable And	=	TRUE Boolean				
							Neutral_Speed_Enable are TRUE concurrently	=	TRUE Boolean				
							Transmission_Range_Enable	=	TRUE Boolean				
							Transmission_Input_Speed_ Enable	=	TRUE Boolean				
							No Change in Transfer Case Range (High <-> Low) for	>=	5 Seconds				
							Engine Torque Signal Valid		TRUE Boolean				
							Throttle Position Signal Valid P0723 Status is not	=	TRUE Boolean  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 this DTC if the PTO is active		ו	
					Ignition Voltage is			
					Ignition Voltage is			
					Engine Speed is Engine Speed is			
					Engine Speed is 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	Enable		
					when both of the following conditions are satsified for			
					Input Speed Delta	<= 4095.9 RPM		
					Raw Input Speed			
					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 Boolea	ו	
					Powertrain Brake Pedal Applied is		n	
					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	Revers e/Neutr = al ENUM Transit onal		
					Transmission Range is	onal		
					And when a drop occurs  Loop to Loop Drop of Transmission Output Speed is	> 8192 RPM		
					Range_Disable is TRUE when any of the next three conditions are TRUE			
					Transmission Range is	= Park ENUM		
					Transmission Range is	Park/R everse Transit onal		
					Input Clutch is not	ON (Fully Applied ENUM )		
					Neutral_Speed_Enable is TRUE when All of the next three conditions are satsified for	> 409.59 Seconds		
					Transmission Output Speed	> 0 RPM		
					And the acceleration of the Transmission Output Speed is	RPM/L		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					And the acceleration of the Transmission Output Speed is	RPM/L > 0 oop Rate		
					Transmission_Range_Enable is TRUE when one of the next four conditions is TRUE			
					Transmission Range is	= Neutral ENUM		
					Transmission Range is	Revers e/Neutr = al ENUM Transiti onal		
					Transmission Range is	Neutral/ Drive ENUM Transiti onal		
					Range Change Delay Timer	>= 5 Sec		
				Disable Conditions:				
						P0123		
Torque Converter Clutch (TCC)	P0741	TCC System Stuck OFF	TCC Pressure	>= 800 Kpa			Enable >= 2 Time (Sec)	Two Trips
			Either Condition (A) or (B) Must be Met					

**3 OF 8 SECTIONS** 

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD	VALUE	SECONDARY PARAMETERS	ENABI	LE CONDI	ITIONS	TIME	REQI	UIRED	MIL ILLUM.
			(A) TCC Slip Error @ TCC On Mode	>=	Refer to Table 1 in Supporting Documents	RPM					>=	6	Fail Time (Sec)	
			(B) TCC Slip @ Lock On Mode	>=	130	RPM					>=	6	Fail Time (Sec)	
			If Above Conditions Have been Met, and Fail Timer Expired, Increment Fail Counter								>=	2	TCC Stuck Off Fail Counter	
							Ignition Voltage Lo	>=	8.5996	Volts				
							Ignition Voltage Hi	<=	31.999					
							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	<=	1492	N*m				
							Throttle Position Lo	>=	8.0002	Pct				
							Throttle Position Hi	<=	99.998					
							2nd Gear Ratio Lo	>=	2.1985					
							2nd Gear Ratio High	<=	2.5295					
							3rd Gear Ratio Lo 3rd Gear Ratio High	>= <=	1.4248 1.6393					
							4th Gear Ratio Lo	>=	1.0714					
							4th Gear Ratio High	<=	1.2327					
							5th Gear Ratio Lo	>=	0.7924					
							5th Gear Ratio Hi	<=	0.9116					
							6th Gear Ratio Lo	>=	0.6204	Ratio				
							6th Gear Ratio High	<=	0.7137	Ratio				
							Transmission Fluid Temperature Lo	>=	20	°C				
							Transmission Fluid Temperature Hi	<=	130	°C				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLI	) VALUE	SECONDARY PARAMETERS	ENABI	LE CONDITIONS	TIME REQUIRED	MIL ILLUM.
							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		
							P0741 Status is	≠	Test Failed This Key On or Fault Active		
						Disable Conditions:		P0722	P0716, P0717, , P0723, P0742, 2763, P2764		
								P0103 P0108 P0174 P0202 P0205 P0208 P0302 P0305	P0101, P0102, 8, P0106, P0107, 9, P0171, P0172, 9, P0175, P0201, 9, P0203, P0204, 9, P0206, P0207, 9, P0300, P0301, 9, P0303, P0304, 9, P0306, P0307, 9, P0401, P042E		
Torque Converter											One Trip
Clutch (TCC)	P0742	TCC System Stuck ON	TCC Slip Speed	>=	-12	RPM					
			TCC Slip Speed	<=	13	RPM				Fail >= 1.25 Time (Sec)	
			If Above Conditions Have been Met, and Fail Timer Expired, Increment Fail Counter							>= 6 Fail Counter	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABI	LE COND	ITIONS	TIME REQUIRED	MIL ILLUM.
					Run TCC Stuck On Test Enable Criteria:					
					Gear Ratio	<=	2.5251	Ratio		
					Gear Ratio		2.1948			
					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		0	Boolean		
					If Stuck On During Upshift is enabled (See Above), Engine Torque Must be	>=	55	Nm		
					Down Shift In Progress	=	FALSE	Boolean		
					Current Gear		1st	Boolean		
					Engine Torque Hi	<=	1492	Nm		
					Engine Torque Lo		80	Nm		
					Current Range			Range		
					Current Range	<b>≠</b>	Reverse	Range		
					Transmission Sump Temperature	<=	130	°C		
					Transmission Sump Temperature	>=	20	°C		
					Throttle Position Hyst High		8.0002	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		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Disable if in D5 and value true	= 0 Boolean		
					Disable if in MUMD and value true	= O Boolean		
					Disable if in TUTD and value true	= U Boolean		
					4 Wheel Drive Active			
					Hydraulic Clutch Air Purge Active	= FALSE Boolean		
					Ignore Air Purge if value = true			
					TCC Mode Common Enables:	= OFF		
					Ignition Voltage	>= 8.5996 V		
					Ignition Voltage			
					Vehicle Speed			
					Engine Speed			
					Engine Speed			
					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:				
						ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304,		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
							P0305, P0306, P0307, P0308, P0401, P042E		
Variable Bleed Solenoid (VBS)	P0777	Pressure Control (PC) Solinoid B Stuck On [C35R] (Steady State)	Fail Case  Case: Steady State 1st  Attained Gear slip  If the Above is True for Time  Intrusive test: (CBR1 clutch exhausted)  Gear Ratio Gear Ratio If the above parameters are true	>=	Table Based Time Please Refer to Table 4 in supporting documents  1.608642578 1.4554444336			>= 1.1 Timer (Sec)	One Trip
			Fail Case Case: Steady State 2nd gear		Table Based			Counts	
			Max Delta Output Speed Hysteresis	>=	value Please Refer to 3D Table 1 in supporting documents				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			Min Delta Output Speed Hysteresis	>=	Table Based value Please Refer to 3D Table 2 in supporting documents				
			If the Above is True for Time	>=	Table Based Time Please Refer to Table 17 in Supporting documents				
			Intrusive test: (CB26 clutch exhausted) Gear Ratio	<=	1.608642578				
			Gear Ratio Gear Ratio If the above parameters are true	>=	1.455444336				
								Fail >= 1.1 Timer (Sec)	
								Fail Count in 2nd Gear	
								or Total >= 3 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				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			Min Delta Output Speed Hysteresis	Table Based value Please Refer to 3D Table 2 in supporting documents				
			If the Above is True for Time	Table Based Time Please Refer to Table 17 in supporting documents				
			Intrusive test: (C1234 clutch exhausted)					
			Gear Ratio Gear Ratio					
			If the above parameters are true					
							Fail >= 1.1 Timer (Sec)	
							Fail Count in 4th Gear	
							or Total >= 3 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				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS		TIME	REQUIRED	MIL ILLUM.
			Min Delta Output Speed Hysteresis	\ \	Table Based value Please Refer to 3D Table 2 in supporting documents						
			If the Above is True for Time	>=	Table Based Time Please Refer to Table 17 in Supporting documents						
			Intrusive test: (CB26 clutch exhausted)								
			Gear Ratio	<=	0.89465332				>=	Fail 1.1 Time (Sec	r
			Gear Ratio If the above parameters are true	>=	0.809448242				>=	1 coun	s
									>=	Fail 1.1 Time (Sec	r
									>=	Fail Cour 1 in 6tl Gea	t
									>=	or Tota 3 Fail Coun	
						PRNDL State defaulted	=	FALSE Boolean			
						inhibit RVT  IMS fault pending indication	=	FALSE Boolean FALSE Boolean			
						output speed		0 RPM			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					TPS validity flag	= TRUE Boolean		
					HSD Enabled	= TRUE Boolean		
					Hydraulic_System_Pressurize d	= TRUE Boolean		
					Minimum output speed for RVT	>= 0 Nm		
					A OR B			
					(A) Output speed enable	>= 16 Nm		
					(B) Accelerator Pedal enable	>= 0.5005 Nm		
					Ignition Voltage Lo	>= 8.5996 Volts		
					Ignition Voltage Hi			
					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			
					if Attained Gear=1st FW Engine Torque Enable	>= 5 Nm		
					if Attained Gear=1st FW Engine Torque Enable			
					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:			
						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)	P0797	Pressure Control (PC) Solenoid C Stuck On [C456] (Steady State)	Fail Case  Case: Steady State 1st  Attained Gear slip  If the Above is True for Time  Intrusive test: (CBR1 clutch exhausted)  Gear Ratio Gear Ratio If the above parameters are true	>= <= >=	Table Based Time Please Refer to Table 4 in supporting documents  1.209594727 1.094360352			Fail >= 1.1 Timer (Sec) Fail >= 2 Count in 1st Gear or Total >= 3 Fail Counts	One Trip
			Fail Case  Case Steady State 2nd						
			Max Delta Output Speed Hysteresis	>=	Table Based value Please Refer to 3D Table 1 in supporting documents				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			Min Delta Output Speed Hysteresis	>=	Table Based value Please Refer to 3D Table 2 in supporting documents				
			If the Above is True for Time		Table Based Time Please Refer to Table 17 in Supporting documents				
			Intrusive test: (CB26 clutch exhausted)						
			Gear Ratio Gear Ratio If the above parameters are true	>=	1.209594727 1.094360352				
			are uue					Fail >= 1.1 Timer (Sec)	
								Fail >= 1 Count in 2nd Gear	
								or Total >= 3 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				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD VALUE	SECONDARY PARAMETERS	ENABI	LE CONDITIONS	TIME REG	UIRED	MIL ILLUM.
			Min Delta Output Speed Hysteresis	>=	Table Based value Please Refer to 3D Table 2 in supporting documents						
			If the Above is True for Time		Table Based Time Please Refer to Table 17 in supporting documents						
			Intrusive test: (C35R clutch exhausted)								
			Gear Ratio		1.209594727						
			Gear Ratio If the above parameters are true	l	1.094360352						
									>= 1.1	Fail Timer (Sec)	
									>= 1	Fail Count in 3rd Gear	
									OR		
									>= 3	Total Fail Counts	
						PRNDL State defaulted	=	FALSE Boolean			
						inhibit RVT  IMS fault pending indication	=	FALSE Boolean FALSE Boolean			
						output speed	= >=	0 RPM			
						TPS validity flag		TRUE Boolean			
						HSD Enabled	=	TRUE Boolean			
						Hydraulic_System_Pressurize d	=	TRUE Boolean			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Minimum output speed for RVT	>= 0 Nm		
					A OR B			
					(A) Output speed enable	>= 16 Nm		
					(B) Accelerator Pedal enable	>= 0.5005 Nm		
					Ignition Voltage Lo			
					Ignition Voltage Hi			
					Engine Speed Lo			
					Engine Speed Hi			
					Engine Speed is within the allowable limits for	>= 5 Sec		
					if Attained Gear=1st FW Accelerator Pedal enable			
					if Attained Gear=1st FW Engine Torque Enable			
					if Attained Gear=1st FW Engine Torque Enable	<= 1492 Nm		
					Transmission Fluid Temperature	S- 6.656 9C		
					Input Speed Sensor fault		n	
					Output Speed Sensor fault			
					Default Gear Option is not present	= TRUE		
					present			
				Disable Conditions:	MIL not Illuminated for DTC's:			
						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		THRESHOLI	VALUE	SECONDARY PARAMETERS	ENABL	E CONDI	TIONS	TIME REQUIRED	MIL ILLUM.
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 f Delay Timer Cal							
			Check for Switch to be in Exhausted Position after delay, If so then Increment Fail Counter								>= 10 Fail Counts	
			Note: Subsequent fail counts require CB26 pressure above this value to re-enable fail logic. Results in one fail count per clutch transition	>	50	Кра						
							Transmission Fluid Temperature Lo	>=	0	°C		
							Transmission Fluid Temperature Hyst Hi (disable above this)	Not >=	120	°C		
							Transmission Fluid Temperature Hyst Lo (enable below this)	<=	255.99	°C		
							Ignition Voltage Lo	>=	8.5996	Volts		
							Ignition Voltage Hi	<=	31.999			
							Engine Speed Lo Engine Speed Hi	>= <=	400 7500	RPM 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			ļ
,							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:		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 Hydraulic Delay Timer (Table Based)	Coo Toblo O fo					Special No Trip
			Check for Switch to be in Pressurized Position after delay, If so then Increment Fail Counter					>= 20 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	>= 0 °C		
						Transmission Fluid Temperature Hyst Hi (disable above this)	Not >= 120 °C		
						Transmission Fluid Temperature Hyst Lo (enable below this)	<= 255.99 °C		
						lgnition Voltage Lo Ignition Voltage Hi	>= 8.5996 Volts <= 31.999 Volts		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOL	D VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS			TIME REQUIRED	MIL ILLUM.
						Engine Speed Lo	>=	400	RPM		
						Engine Speed Hi Engine Speed is within the	<=	7500	RPM		
						allowable limits for	>=	5	Sec		
						Default Gear Action High Side Driver ON	=	FALSE TRUE			
						RVT Status	=	Normal			
						Hydraulic Pressure Available	=	TRUE			
						Engine Speed Min		550	RPM		
						Engine opeed wiin		330	TXI IVI		
					Disable Conditions:		P0713, P0722, P0742, P0973,	P0711, P0 P0716, P P0723, P P0756, P P0974, P P1915, F	20717, 20751, 20757, 20976,		
							E	CM: None	e		
Transmission Fluid Pressure Switch	P0877	Transmission Fluid Pressure (TFP) Sensor D Circuit Low Voltage	C1234 Hydraulic pressure		KPa						Special No Trip
			Hydraulic Delay Timer (Table Based)	See Table 6 t >= Delay Time Cal	or Sec						
			Check for Switch to be in Exhausted Position after delay, If so then Increment Fail Counter							>= 5 Fail Counts	
			Note: Subsequent fail counts require C1234 pressure above this value to re-enable fail logic. Results in one fail count per clutch transition	> 50	kpa						
						Transmission Fluid Temperature Lo	>=	0	°C		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Transmission Fluid Temperature Hyst Hi (disable above this)	Not >= 120 °C		
					Transmission Fluid Temperature Hyst Lo (enable below this)	<= 255.99 °C		
					Ignition Voltage Lo			
					Ignition Voltage Hi			
					Engine Speed Lo			
					Engine Speed Hi			
					Engine Speed is within the allowable limits for	>= 5 Sec		
					Default Gear Action			
					High Side Driver ON	= TRUE		
					RVT Status	= Normal		
					Hydraulic Pressure Available	= TRUE		
					Engine Speed Min	>= 550 RPM		
				Disat Condition				
		Turninin Elili Burn						Special No Trip
Transmission Fluid Pressure Switch	P0878	Transmission Fluid Pressure (TFP) Sensor D Circuit High Voltage	C1234 Hydraulic pressure					
			Hydraulic Delay Timer (Table Based)	See Table 6 for >= Delay Timer Sec Cal				
			Check for Switch to be in Pressurized Position after delay, If so then Increment Fail Counter				>= 8 Fail Counts	

	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			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	>= 0 °C		
					Transmission Fluid Temperature Hyst Hi (disable above this)	Not >= 120 °C		
					Transmission Fluid Temperature Hyst Lo (enable below this)	<= 255.99 °C		
					Ignition Voltage Lo	>= 8.5996 Volts		
					Ignition Voltage Hi			
					Engine Speed Lo			
					Engine Speed Hi			
					Engine Speed is within the allowable limits for	>= 5 Sec		
					Default Gear Action	= FALSE		
					High Side Driver ON	= TRUE		
					RVT Status	= Normal		
					Hydraulic Pressure Available	= TRUE		
					Engine Speed Min	>= 550 RPM		
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0711, P0712, P0713, P0716, P0717, P0722, P0723, P0751, P0742, P0756, P0757, P0973, P0974, P0976,		
						P0977, P1915, P182E ECM: None		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE		O VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS		TIONS	TIME REQUIRED	MIL ILLUM.
Transmission Fluid Pressure Switch	CODE		CBR1/C456 Hydraulic pressure  Hydraulic Delay Timer (Table Based)  Check for Switch to be in Exhausted Position after delay, If so then Increment Fail Counter  Note: Subsequent fail counts require C35R pressure above this value to re-enable fail logic. Results in one fail count per clutch transition	>=	50 See Table 99 Delay Time Cal	Kpa or		>= Not >= <= <= >= <= >= <= >= <=	0 120 255.99 8.5996 31.999 400 7500 5	°C °C Volts		MIL ILLUM.  Special No Trip
							Default Gear Action High Side Driver ON RVT Status Hydraulic Pressure Available Engine Speed Min	= =	FALSE TRUE Normal TRUE 550	RPM		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE			SECONDARY PARAMETERS	ENABLE CONDITIONS		TIME REQUIRED	MIL ILLUM.	
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: PC P0713, P P0722, P P0742, P P0973, P P0977, P	0716, P 0723, P 0756, P 0974, P	0717, 0751, 0757, 0976, 182E		
Transmission Fluid Pressure Switch	P0990	Transmission Fluid Pressure (TFP) Sensor E Circuit High Voltage	CBR1/C456 Hydraulio pressure	>=	700	Кра						Special No Trip
			Hydraulic Delay Timer (Table Based)	>=	See Table 9 for Delay Timer Cal	Sec						
			Check for Switch to be in Pressurized Position after delay, If so then Increment Fail Counter								>= 15 Fail Counts	
			Note: Subsequent fail counts require C35R pressure above this value to re-enable fail logic. Results in one fail count per clutch transition		700	kpa						
							Transmission Fluid Temperature Lo	>=	0	°C		
							Transmission Fluid Temperature Hyst Hi (disable above this)	Not >=	120	°C		
							Transmission Fluid Temperature Hyst Lo (enable below this)	<= '	255.99	°C		
							Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi	<= (; >=		Volts Volts RPM RPM		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD \	/ALUE	SECONDARY PARAMETERS	ENABI	LE CONDI	TIONS	TIME REQUIRED	MIL ILLUM.
							Engine Speed is within the allowable limits for Default Gear Action High Side Driver ON RVT Status	>= = = =	5 FALSE TRUE Normal	Sec		
							Hydraulic Pressure Available Engine Speed Min		TRUE 550	RPM		
						Disable Conditions:	MIL not Illuminated for DTC's:	P0713 P0722 P0742 P0973	P0711, P0 8, P0716, F 2, P0723, F 2, P0756, F 3, P0974, F 7, P1915, F	P0717, P0751, P0757, P0976,		
								E	ECM: None	e		
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	<b>≠</b>	CeTRGR_e_P RNDL_Drive6	Range State						
			Previous range	<b>≠</b>	CeTRGR_e_P RNDL_Drive4	Range State						
			Either the S1 or S3 Pressure Switch indicates "Pressure Present"	=	TRUE	Boolean						
			Engine Torque Engine Torque If the above conditions are present Increment Fail Timer			Nm Nm					Fail >= 0.225 Second s	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD	VALUE	SECONDARY PARAMETERS	ENAB	LE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			lf 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 If the above conditions are present Increment Fail Timer	H	1st Locked	Gear				Fail >= 0.225 Second s	1
			If Fail Timer has Expired then Increment Fail Counter							>= 15 Fail Counts	;
			Fail Case 3 Current range	Ш	"Transitional 13"		Previous range	≠	CeTRG R_e_P RNDL_ Drive1		
			Either the S1 or S3 Pressure Switch indicates "Pressure Present"	=	TRUE	Boolean	Previous range	≠	CeTRG R_e_P RNDL_ Drive2		
			Engine Torque	>=	-8192	Nm	IMS is 7 position configuration	=	1 Boolean		
			Engine Torque	<=	8191.75	Nm	If the "IMS 7 Position config" = 1 then the "previous range" criteria above must also be satsified when the "current range" = "Transitional 13"				
			If the above conditions are present Increment Fail Timer							>= 0.225 Second	Ŀ
			lf 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 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				
			Steady State Engine Torque	>=	100	Nm				
			Steady State Engine Torque	<=	8191.75	Nm				
			If the above conditions are present Increment Fail Timer						>= 0.225 Second s	
			If the above Condtions have been met, Increment Fail Counter						>= 15 Fail Counts	
			Fail Case 5 Current range	=	"Transitional 11"					
			Engine Torque		-50	Nm				
			Either the S1 or S3 Pressure Switch indicates "Pressure Present"	=	TRUE	Boolean				
			If the above conditions are present Increment Fail Timer						>= 0.225 Second s	
			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):			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD VALUE	SECONDARY PARAMETERS	ENAE	BLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			and			Current Range	<b>≠</b>	"Transit ional 11"		
			A Open Circuit (See Definition)	=	FALSE Boolean	or				
						Last positive state	<b>≠</b>	Neutral		
						Previous transitional state	≠	Transiti onal 8 and Illegal		
						and				
						PRNDL Circuit A	=	Open Circuit		
						PRNDL Circuit B	=	Closed Circuit		
						PRNDL Circuit C	=	Open Circuit		
						PRNDL Circuit P	=	Open Circuit		
			If the above Condtions are present, Increment Fail timer						>= 6.25 Second s	
			Fail Case 7 Current PRNDL State	=	PRNDL circuit ABCP = 1101					
			and							
			Previous valid state	=	PRNDL circuit ABCP =1111					
			Input Speed		150 RPM					
			Reverse Trans Ratio		2.845825195 ratio					
			Reverse Trans Ratio  If the above Condtions	>=	3.274169922 ratio					
			are present, Increment Fail timer						>= 6.25 Second s	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			P182E will report test fail when any of the above 7 fail cases are met					
					Ignition Voltage Lo Ignition Voltage Hi Vehicle Speed Lo Engine Speed Lo Engine Speed Hi Engine Speed is within the	<= 31.999 Volts <= 511 KPH >= 400 RPM <= 7500 RPM		
					allowable limits for Engine Torque Signal Valid	<i>&gt;</i> = 3 3ec		
				Disable Conditions:				
Variable Bleed Solenoid (VBS)	P2715	Pressure Control (PC) Solenoid D Stuck On [CB26] (Steady State)	Fail Case  Case: Steady State 1st  Attained Gear slip	>= 400 RPM				One Trip
			If the Above is True for Time					
			Intrusive test: (CBR1 clutch exhausted) Gear Ratio	<= 2.482177734				
			Gear Ratio Gear Ratio If the above parameters are true	>= 2.245849609			Fail	
							Fail >= 1.1 Timer (Sec)	

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

**3 OF 8 SECTIONS** 

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
							Fail Count in 3rd Gear or	
			Fail Case Case: Steady State 4rd				Total >= 3 Fail Counts	
			<u>3</u> Gear Max Delta Output Speed Hysteresis	Table Based value Please Refer to 3D Table 1 in supporting documents				
			Min Delta Output Speed Hysteresis	Table Based value Please Refer to 3D Table 2 in supporting documents				
			If the Above is True for Time	Table Based Time Please Refer to Table 17 in Supporting documents				
			Intrusive test: (C1234 clutch exhausted)					
			Gear Ratio Gear Ratio If the above parameters are true				F-11	
							Fail >= 1.1 Timer (Sec)	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
							Fail Count in 4th Gear or Total	
			Fail Case Case: Steady State 5th 4 Gear  Max Delta Output Speed	Table Based value Please Refer to 3D			>= 3 Fail Counts	
			Hysteresis Min Delta Output Speed Hysteresis	Table 1 in supporting documents  Table Based value Please				
			If the Above is True for Time	documents Table Based Time Please				
			Intrusive test: (C35R clutch exhausted) Gear Ratio					
			Gear Ratio If the above parameters are true	>= 0.633666992			Fail >= 1.1 Timer (Sec)	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABI	LE CONDITIOI	NS	TIME REQUIRED	MIL ILLUM.
									>= 1 Fail Count in 5th Gear or Total >= 3 Fail Counts	
					PRNDL State defaulted inhibit RVT IMS fault pending indication		FALSE Boo	lean		
					output speed TPS validity flag HSD Enabled Hydraulic_System_Pressurize	=	FALSE Boo 0 RI TRUE Boo TRUE Boo TRUE Boo	PM lean lean		
					d Minimum output speed for RVT A OR B	>=	0 N			
					(A) Output speed enable (B) Accelerator Pedal enable		16 N 0.5005 N	m m		
					Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi	>= <= >= <=	8.5996 Vo 31.999 Vo 400 RF 7500 RF	olts PM		
					Engine Speed is within the allowable limits for			ec		
					if Attained Gear=1st FW Accelerator Pedal enable if Attained Gear=1st FW		5.0003 P			
					Engine Torque Enable if Attained Gear=1st FW Engine Torque Enable		5 N 1492 N			
					Transmission Fluid Temperature	>=	-6.656 °			
I					Input Speed Sensor fault Output Speed Sensor fault	=	FALSE Boo			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Disable Conditions:	Default Gear Option is not present  MIL not Illuminated for DTC's:	= TRUE  TCM: P0716, P0717, P0722, P0723, P182E  ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172,		
Variable Bleed			Fail Case				P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		One Trip
Solenoid (VBS)	P2724	Pressure Control (PC) Solenoid E Stuck On (Steady State)	1 Case: 5th Gear  Max Delta Output Speed Hysteresis	i >=	Table Based value Please Refer to 3D Table 1 in supporting documents				
			Min Delta Output Speed Hysteresis		Table Based value Please Refer to 3D Table 2 in supporting documents				
			If the Above is True for Time		Table Based Time Please Refer to Table 17 in supporting documents				
			Intrusive test: (C35R clutch exhausted)						

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			Gear Ratio Gear Ratio If the above parameters are true	\"= \>=	1.209594727 1.094360352			Fail >= 1.1 Timer (Sec) Fail Count in 5th Gear	
			<u>Fail Case</u> 2 Case: 6th Gear		Table Based			OR Total >= 3 Fail Counts	
			Max Delta Output Speed Hysteresis	>=	value Please Refer to 3D Table 1 in supporting documents  Table Based value Please				
			Min Delta Output Speed Hysteresis	>=	Refer to 3D Table 2 in supporting documents  Table Based Time Please				
			If the Above is True for Time Intrusive test: (CB26 clutch exhausted)	>=	Refer to Table 17 in Supporting documents				
			Gear Ratio Gear Ratio		1.209594727 1.094360352				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABI	LE COND	ITIONS	TIME	REQUI	IRED	MIL ILLUM.
			If the above parameters are true									
									>=		Fail Timer (Sec)	
									>=		Fail Count in 6th Gear	
									>=	3	OR Total Fail Counts	
					PRNDL State defaulted inhibit RVT	=		Boolean Boolean				
					IMS fault pending indication	=		Boolean				
					output speed	>=	0	RPM				
					TPS validity flag	=		Boolean				
					HSD Enabled	=	TRUE	Boolean				
					Hydraulic_System_Pressurize d	=	TRUE	Boolean				
					Minimum output speed for RVT	>=	0	Nm				
					A OR B (A) Output speed enable	>=	16	Nm				
					(B) Accelerator Pedal enable		0.5005					
					Ignition Voltage Lo	>=	8.5996	Volts				
					Ignition Voltage Hi	<=	31.999					
					Engine Speed Lo	>=	400	RPM				
					Engine Speed Hi		7500	RPM				
					Engine Speed is within the allowable limits for	>=	5	Sec				
					if Attained Gear=1st FW Accelerator Pedal enable	>=	5.0003	Pct				
					if Attained Gear=1st FW Engine Torque Enable	>=	5	Nm				

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	<= 1492 Nm		
					Transmission Fluid Temperature			
					Input Speed Sensor fault Output Speed Sensor fault			
					Default Gear Option is not present	= TRUE		
				Disable Conditions:		TCM: P0716, P0717, P0722, P0723, P182E		
						ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOL	D VALUE	SECONDARY PARAMETERS	ENAB	LE COND	ITIONS	TIME RE	EQUIRED	MIL ILLUM.
Torque Converter Clutch (TCC)	P0742	TCC System Stuck ON	TCC Slip Speed	>=	-12	RPM							One Trip
Glutti (100)			TCC Slip Speed	<=	13	RPM					>= 1.2	Fail 25 Time (Sec)	
			If Above Conditions Have been Met, and Fail Timer Expired, Increment Fail Counter								>= 6	Fail	ſ
							Run TCC Stuck On Test Enable Criteria:						-
							Gear Ratio Gear Ratio		2.5251 2.1948	Ratio 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	_	0	Boolean			
							If Stuck On During Upshift is enabled (See Above), Engine Torque Must be	>=	55	Nm			
							Down Shift In Progress	=	FALSE	Boolean			
							Current Gear	≠	1st Gear Locked	Boolean			
							Engine Torque Hi Engine Torque Lo		8191.9 80	Nm Nm			
							Current Range	<b>≠</b>	Neutral	Range			
							Current Range	<b>≠</b>		Range			
							Transmission Sump Temperature	<=	130	°C			
							Transmission Sump Temperature	>=	-6.656	°C			
							Throttle Position Hyst High Throttle Position Hyst Low	>= <=	8.0002 2.9999				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENAB	LE CONDI	TIONS	TIME REQUIRED	MIL ILLUM.
					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	=		Boolean		
					Ignore Air Purge if value = true	=	0	Boolean		
					TCC Mode Common Enables:	=	OFF			
					Ignition Voltage	>=	8.5996			
					Ignition Voltage		31.999			
					Vehicle Speed	<=	511	KPH		
					Engine Speed	>=	400	RPM		
					Engine Speed Engine Speed is within the allowable limits for	<= >=	7500 5	RPM Sec		
					Engine Torque Signal Valid	=	TRUE	Boolean		
					Throttle Position Signal Valid		TRUE	Boolean		
					P0742 Status is	<b>≠</b>	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: 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		
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	<b>≠</b>	CeTRGR_e_P RNDL_Drive6					
			Previous range	<b>≠</b>	CeTRGR_e_P RNDL_Drive4	Range State				
			Either the S1 or S3 Pressure Switch indicates "Pressure Present"	=	TRUE	Boolean				
			Engine Torque Engine Torque		-50 8191.75	Nm Nm				
			If the above conditions are present Increment Fail Timer						Fail >= 0.225 Second s	
			If Fail Timer has Expired then Increment Fail Counter						>= 15 Fail Counts	
			Fail Case 2 Current range	=	"Transitional 1"	Range State				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD	VALUE	SECONDARY PARAMETERS	ENAB	BLE CONDI	TIONS	TIME REQUIRED	MIL ILLUM.
			S3 Pressure Switch indicates "Exhausted"	=	TRUE	Boolean						
			Commanded Gear	=	1st Locked	Gear						
			If the above conditions are present Increment Fail Timer								Fail >= 0.225 Second s	
			If Fail Timer has Expired then Increment Fail Counter								>= 15 Fail Counts	
			Fail Case						0.700			
			<u>ଓ</u> Current range	=	"Transitional 13"		Previous range	≠	CeTRG R_e_P RNDL_ Drive1			
			Either the S1 or S3 Pressure Switch indicates "Pressure Present"	=	TRUE	Boolean	Previous range	≠	CeTRG R_e_P RNDL_ Drive2			
			Engine Torque	>=	-8192	Nm	IMS is 7 position configuration	=	1	Boolean		
			Engine Torque	<=	8191.75	Nm	If the "IMS 7 Position config" = 1 then the "previous range" criteria above must also be satsified when the "current range" = "Transitional 13"					
			If the above conditions are present Increment Fail Timer								>= 0.225 Seconds	5
			lf Fail Timer has Expired then Increment Fail Counter								>= 15 Fail Counts	
			Fail Case 4  Current range	=	"Transitional 2" or "Transitional 8		Disable Fail Case 4 if last positive range was Drive 6 and current range is transitional 8					

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

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD	VALUE	SECONDARY PARAMETERS	ENAB	LE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			A Open Circuit (See Definition)	=	FALSE	Boolean	or				
							Last positive state	≠	Neutral		
							or Previous transitional state and		Transiti onal 8 and Illegal		
							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 Z Current PRNDL State	=	PRNDL circuit ABCP = 1101						
			and Previous valid state	=	PRNDL circui ABCP =1111	Range					
			Input Speed Reverse Trans Ratio	>= <=	150 2.845825195	RPM ratio					
			Reverse Trans Ratio	>=	3.274169922	ratio					
			are present, Increment Fail timer							>= 6.25 Seconds	
			P182E will report test fail when any of the above 7 fail cases are met								

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENAB	LE CONDI	TIONS	TIME REQUIRED	MIL ILLUM.
					Ignition Voltage Lo	>=	8.5996	Volts		
					Ignition Voltage Hi	<=	31.999	Volts		
					Vehicle Speed Lo	<=	511	KPH		
					Engine Speed Lo		400	RPM		
					Engine Speed Hi	<=	7500	RPM		
					Engine Speed is within the allowable limits for		5	Sec		
					Engine Torque Signal Valid	=	TRUE	Boolean		
				Disable Conditions:						

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOL	D VALUE	SECONDARY PARAMETERS	ENABL	LE COND	ITIONS	TIME RE	EQUIRED	MIL ILLUM.
Torque Converter Clutch (TCC)	P0742	TCC System Stuck ON	TCC Slip Speed	>=	-12	RPM							One Trip
Ciulcii (TCC)			TCC Slip Speed	<=	13	RPM							
			Too Slip Speed	ν-	10	IXI WI					>= 1.2	Fail Time (Sec)	
			If Above Conditions Have been Met, and Fail Timer Expired, Increment Fail Counter								>= 6	Fail Counter	
							Run TCC Stuck On Test Enable Criteria:						
							Gear Ratio	<=	2.5251	Ratio			
							Gear Ratio	>=	2.1948				
							Engine Speed Hi	<=	6500	RPM			
							Engine Speed Lo	>=	500	RPM			
							Vehicle Speed HI		511	KPH			
							Vehicle Speed Lo Stuck On During Upshift Enabled	>=	16 0	KPH Boolean			
							If Stuck On During Upshift is enabled (See Above), Engine Torque Must be	>=	55	Nm			
							Down Shift In Progress	=	FALSE	Boolean			
							Current Gear	<b>≠</b>	1st Gear Locked	Boolean			
							Engine Torque Hi	<=	8191.9	Nm			
							Engine Torque Lo	>=	80	Nm			
							Current Range	≠	Neutral	Range			
							Current Range	<b>≠</b>	Reverse	Range			
							Transmission Sump Temperature		130	°C			
							Transmission Sump Temperature	>=	-6.656	°C			
							Throttle Position Hyst High	>=	8.0002	Pct			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Throttle Position Hyst Low PTO Active			
							411	
					Disable if in D1 and value true		an	
					Disable if in D2 and value true	<b>=</b> () Roole	an	
					Disable if in D3 and value true		an	
					Disable if in D4 and value true		an	
					Disable if in D5 and value true		an	
					Disable if in MUMD and value true		an	
					Disable if in TUTD and value true		าก	
					4 Wheel Drive Active	= FALSE Boole	an	
					Hydraulic Clutch Air Purge Active	= FALSE Boole	an	
					Ignore Air Purge if value = true		an	
					TCC Mode Common Enables:			
					Ignition Voltage			
					Ignition Voltage			
					Vehicle Speed			
					Engine Speed			
					Engine Speed			
					Engine Speed is within the allowable limits for	>= 5 Sec		
					Engine Torque Signal Valid	= TRUE Boole	an	
					Throttle Position Signal Valid	= TRUE Boole	an	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD	VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
							P0742 Status is	Test Failed This ≠ Key On or Fault Active		
						Disable Conditions:		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		
Internal Mode Switch (IMS)	P182E	Internal Mode Switch - Circuit A Low Reported as Internal Mode Switch-Invalid Range	Fail Case 1 Current range	II	"Transitional 1"	Range State				One Trip
			Previous range	<b>≠</b>	CeTRGR_e_P RNDL_Drive6	Range State				
			Previous range	<b>≠</b>	CeTRGR_e_P RNDL_Drive4	Range State				
			Either the S1 or S3 Pressure Switch indicates "Pressure Present"	=	TRUE	Boolean				
			Engine Torque Engine Torque			Nm Nm				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD	VALUE	SECONDARY PARAMETERS	ENABI	LE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			If the above conditions are present Increment Fail Timer							Fail >= 0.225 Second s	
			If Fail Timer has Expired then Increment Fail Counter							>= 15 Fail Counts	
			<u>Fail Case</u> 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							Fail >= 0.225 Second s	
			If Fail Timer has Expired then Increment Fail Counter							>= 15 Fail Counts	
			Fail Case 3 Current range	=	"Transitional 13"		Previous range	<b>≠</b>	CeTRG R_e_P RNDL_ Drive4		
			Either the S1 or S3 Pressure Switch indicates "Pressure Present"	=	TRUE	Boolean	Previous range	<b>≠</b>	CeTRG R_e_P RNDL_ Drive4		
			Engine Torque	>=	-8192	Nm	IMS is 7 position configuration	=	0 Boolea	n	
			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"				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD	VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			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				
			Steady State Engine Torque	>=	100	Nm				
			Steady State Engine Torque	<=	8191.75	Nm				
			If the above conditions are present Increment Fail Timer						>= 0.225 Seconds	
			If the above Condtions have been met, Increment Fail Counter						>= 15 Fail Counts	
			<u>Fail Case</u> <u>5</u> Current range		"Transitional 11"					
			Engine Torque Either the S1 or S3 Pressure Switch indicates	>=	-50 TRUE	Nm Boolean				
			Pressure Switch Indicates "Pressure Present"	=	IKUE	DOOLEAN				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			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	"Transit ≠ ional 11"		
			A Open Circuit (See Definition)	= FALSE Boolean	or			
					Last positive state	≠ Neutral		
					Previous transitional state	Transiti onal 8 ≠ and Illegal		
					and PRNDL Circuit A	Onon		
					PRNDL Circuit B	Closed		
					PRNDL Circuit C	= Open Circuit		
					PRNDL Circuit P	= Open Circuit		
			If the above Condtions are present, Increment Fail timer				>= 6.25 Seconds	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD	/ALUE	SECONDARY PARAMETERS	ENABI	LE CONDI	TIONS	TIME REQUIRED	MIL ILLUM.
			Fail Case  7 Current PRNDL State	=	PRNDL circuit ABCP = 1101							
			and									
			Previous valid state	=	PRNDL circuit ABCP =1111	Range						
			Input Speed			RPM 						
			Reverse Trans Ratio Reverse Trans Ratio		2.845825195 3.274169922							
			If the above Condtions are present, Increment Fail timer		0.214109922	Tallo					>= 6.25 Seconds	
			P182E will report test fail when any of the above 7 fail cases are met									
							Ignition Voltage Lo	>=	8.5996	Volts		
							Ignition Voltage Hi	<=	31.999			
							Vehicle Speed Lo	<=	511	KPH		
							Engine Speed Lo	>=	400	RPM		
							Engine Speed Hi Engine Speed is within the allowable limits for	<= >=	7500 5	RPM Sec		
							Engine Torque Signal Valid		TRUE	Boolean		
						Disable Conditions:	MIL not Illuminated for DTC's:					

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLI	O VALUE	SECONDARY PARAMETERS	ENABL	E COND	ITIONS	TIME R	EQUI	RED	MIL ILLUM.
Tap Up Tap Down Switch (TUTD)	P1761	Tap Up and Down switch signal circuit (rolling count)	Rolling count value received from BCM does not match expected value	=	TRUE	Boolean					>=	<sup>3</sup> (	Fail Counter	Special No Trip
											> '	0	Sample Timer (Sec)	
							Tap Up Tap Down Message Health		TRUE	Boolea n				
							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:							
								ECM: None						

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOL	D VALUE	SECONDARY PARAMETERS	ENABI	LE COND	ITIONS	TIME REG	QUIRED	MIL ILLUM.
Torque Converter Clutch (TCC)	P0742	TCC System Stuck ON	TCC Slip Speed	>=	-12	RPM							One Trip
, ,			TCC Slip Speed	<=	13	RPM					>= 1.25	Fail Time (Sec)	
			If Above Conditions Have been Met, and Fail Timer Expired, Increment Fail Counter								>= 6	Fail Counter	
							Run TCC Stuck On Test Enable Criteria:						
							Gear Ratio	<=	2.5251	Ratio			
							Gear Ratio	>=	2.1948				
							Engine Speed Hi	<=	6500	RPM			
							Engine Speed Lo	>=	500	RPM			
							Vehicle Speed HI	<=	511	KPH			
							Vehicle Speed Lo Stuck On During Upshift Enabled	>=	16 0	KPH Boolean			
							If Stuck On During Upshift is enabled (See Above), Engine Torque Must be	>=	55	Nm			
							Down Shift In Progress	=	FALSE	Boolean			
							Current Gear	<b>≠</b>	1st Gear Locked	Boolean			
							Engine Torque Hi	<=	8191.9	Nm			
							Engine Torque Lo		80	Nm			
							Current Range			Range			
							Current Range			Range			
							Transmission Sump Temperature		130	°C			
							Transmission Sump Temperature	>=	-6.656	°C			
							Throttle Position Hyst High	>=	8.0002	Pct			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENAB	LE CONDI	TIONS	TIME REQUIRED	MIL ILLUM.
					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 Common Enables:	=	OFF			
					Ignition Voltage	>=	8.5996	V		
					Ignition Voltage	<=	31.999	V		
					Vehicle Speed	<=	511	KPH		
					Engine Speed	>=	400	RPM		
					Engine Speed		7500	RPM		
					Engine Speed is within the allowable limits for	>=	5	Sec		
					Engine Torque Signal Valid	=	TRUE	Boolean		
					Throttle Position Signal Valid	=	TRUE	Boolean		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD	/ALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIR	ED MIL ILLUM.
						P0742 Status is	Test Failed This ≠ Key On or Fault Active		
					Disable Conditions:	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 Gear Ratio		rpm			S= 0.8	Fail ſmr
			Gear Ratio	>= 1.094360352				= 1	Fail ounts
			are true					≠ 0 T	eutral imer Sec)
								>= 0.3 T	Fail imer Sec)
						Ignition Voltage Lo	>= 8.5996 Volts	>= 8 C	ounts

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE	CONDI	TIONS	TIME REQUIRED	MIL ILLUM.
					Ignition Voltage Hi	<=	31.999			
					Engine Speed Lo	>=	400	RPM		
					Engine Speed Hi		7500	RPM		
					Engine Speed is within the allowable limits for	>=	5	Sec		
					Transmission Fluid	>=	-6.656	°C		
					Temperature					
					Shift is Complete					
					TPS OR	>=	0.5005	%		
					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:	DTC's:	TCM: P07- P0722, P0 ECM: P010 P0103, P0 P0108, P0 P0174, P0 P0202, P0 P0205, P0 P0208, P0 P0302, P0 P0305, P0 P0308, P0	01, P010 01, P010 1106, P01 1171, P01 1175, P02 1203, P02 1206, P02 1300, P03 1303, P03 1306, P03	82E  02, 107, 172, 201, 204, 207, 301, 304, 307,		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD	VALUE	SECONDARY PARAMETERS	ENABI	E COND	ITIONS	TIME REQUIR	RED	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										
											>= Table T 16 in Suppo rting Docu ments	eutral Fimer Sec)	
							Ignition Voltage Lo	>=	8.5996	Volts	>= 1 C	ounts	
							lgnition Voltage Hi Engine Speed Lo	<= >=	31.999 400	Volts 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 OR	>=	0	RPM			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	E	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Disable aditions:		>= -6.656 °C t = FALSE Boolean t = FALSE Boolean t = TRUE		
Mode 2 Multiplex Valve	P0756	Shift Solenoid Valve B Stuck Off	<u>Fail Case</u> <u>1</u> Commanded Gear	= 1st Locked				Pleas e Refer to Neutral	One Trip
			Gear Box Slip Intrusive Shift to 2nd Commanded Gear Previous	Total policy Const				Table 5 in Supporting Documents	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD VALUE	SECONDARY PARAMETERS	ENAB	BLE COND	ITIONS	TIME REQUIRED	MIL ILLUM.
			Gear Ratio	<=	2.482177734						
			Gear Ratio	>=	2.245849609						
			If the above parameters are true								
			are true							>= 1 sec	
										>= 1 counts	
						Ignition Voltage Lo	>=	8.5996	Volts		
						Ignition Voltage Hi	<=	31.999	Volts		
						Engine Speed Lo	>=	400	RPM		
						Engine Speed Hi	<=	7500	RPM		
						Engine Speed is within the allowable limits for	>=	5	Sec		
						Output Speed OR	>=	0	RPM		
						TPS Shift is Complete	>=	0.5005	%		
						Transmission Fluid Temperature	>=	-6.656	°C		
						High-Side Driver is Enabled	=	TRUE	Boolean		
						Throttle Position Signal Valid from ECM	=	TRUE	Boolean		
						Input Speed Sensor fault	=	FALSE	Boolean		
						Output Speed Sensor fault	=	FALSE	Boolean		
						Default Gear Option is not present	=	TRUE			
					Disable Conditions:	MIL not Illuminated for DTC's:		0716, P07 P0723, P1			
							P0103, P0108, P0174,	20101, P01 P0106, P0 P0171, P0 P0175, P0 P0203, P0	107, 172, 201,		
							P0205, P0208, P0302, P0305,	P0206, P0 P0300, P0 P0303, P0 P0306, P0 P0401, P0	207, 301, 304, 307,		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD	VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
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			Fail >= 1 Time (Sec)	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLI	D VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			Fail Case Tap Up Switch Stuck in 2 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 Time (Sec)	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THF	RESHOLD	VALUE	SECONDARY PARAMETERS	ENAE	BLE CONDI	TIONS	TIME REQUIRED	MIL ILLUM.
							Time Since Last Range Change	>=	1	Enable Time (Sec)		
							Ignition Voltage Lo	>=	8.5996	Volts		
							Ignition Voltage Hi Engine Speed Lo	<= >=	31.999 400	Volts RPM		
							Engine Speed Hi	<=	7500	RPM		
							Engine Speed is within the allowable limits for	>=	5	Sec		
							P0815 Status is	<b>≠</b>	Test Failed This Key On or Fault Active			
						Disable Conditions:		P182E,	P1876, P1 P1761	26, 877,		
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						

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 4 Enabled	=	1	Boolean				
			Tap Down Switch Stuck in the Down Position in Range 5 Enabled	=	1	Boolean				
			Tap Down Switch Stuck in the Down Position in Range 6 Enabled	=	1	Boolean				
			Tap Down Switch Stuck in the Down Position in Range Neutral Enabled	=	1	Boolean				
			Tap Down Switch Stuck in the Down Position in Range Park Enabled	=	1	Boolean				
			Tap Down Switch Stuck in the Down Position in Range Reverse Enabled	=	1	Boolean				
			Tap Down Switch ON	=	TRUE	Boolean			>= 1 sec	
			Fail Case Tap Down Switch Stuck in the Down Position in Range 1 Enabled	=	1	Boolean				
			Tap Down Switch Stuck in the Down Position in Range 2 Enabled	=	1	Boolean				
			Tap Down Switch Stuck in the Down Position in Range 3 Enabled	=	1	Boolean				
			Tap Down Switch Stuck in the Down Position in Range 4 Enabled	=	1	Boolean				
			Tap Down Switch Stuck in the Down Position in Range 5 Enabled	=	1	Boolean				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOL	D VALUE	SECONDARY PARAMETERS	ENABI	LE CONDI	TIONS	TIME REQUIRED	MIL ILLUM.
			Tap Down Switch Stuck in the Down Position in Range 6 Enabled	=	1	Boolean						
			Tap Down Switch Stuck in the Down Position in Neutral Enabled	=	1	Boolean						
			Tap Down Switch Stuck in the Down Position in Park Enabled	=	1	Boolean						
			Tap Down Switch Stuck in the Down Position in Reverse Enabled	=	1	Boolean						
			Tap Down Switch ON	=	TRUE	Boolean						
			NOTE: Both Failcase1 and Failcase 2 Must Be Met								>= 600 sec	
							Time Since Last Range Change	>=	1	Enable Time (Sec)		
							Ignition Voltage Lo	>=	8.5996			
							Ignition Voltage Hi	<=	31.999			
							Engine Speed Lo Engine Speed Hi	>= <=	400 7500	RPM RPM		
							Engine Speed is within the allowable limits for	>=	5	Sec		
							P0816 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:		TCM: P0815, P0826, P182E, P1876, P1877, P1915, P1761		
								ECM: None		
Tap Up Tap Down Switch (TUTD)	P1765	Upshift Switch Circuit #2	Fail Case Tap Up Switch Stuck in 1 the Up Position in Range 1 Enabled	=	0	Boolean				Special No Trip
			Tap Up Switch Stuck in the Up Position in Range 2 Enabled	=	0	Boolean				
			Tap Up Switch Stuck in the Up Position in Range 3 Enabled	=	0	Boolean				
			Tap Up Switch Stuck in the Up Position in Range 4 Enabled	=	0	Boolean				
			Tap Up Switch Stuck in the Up Position in Range 5 Enabled	=	0	Boolean				
			Tap Up Switch Stuck in the Up Position in Range 6 Enabled	=	0	Boolean				
			Tap Up Switch Stuck in the Up Position in Neutral Enabled	=	1	Boolean				
			Tap Up Switch Stuck in the Up Position in Park Enabled	=	1	Boolean				
			Tap Up Switch Stuck in the Up Position in Reverse Enabled	=	0	Boolean				
			Tap Up Switch ON	=	TRUE	Boolean			Fail >= 1 Time (Sec)	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLI	O VALUE	SECONDARY PARAMETERS	ENABL	E CONDI	TIONS	TIME REQU	RED	MIL ILLUM
			Fail Case Tap Up Switch Stuck in 2 the Up Position in Range 1 Enabled	=	1	Boolean							
			Tap Up Switch Stuck in the Up Position in Range 2 Enabled	=	1	Boolean							
			Tap Up Switch Stuck in the Up Position in Range 3 Enabled	=	1	Boolean							
			Tap Up Switch Stuck in the Up Position in Range 4 Enabled	=	1	Boolean							
			Tap Up Switch Stuck in the Up Position in Range 5 Enabled	=	1	Boolean							
			Tap Up Switch Stuck in the Up Position in Range 6 Enabled	=	1	Boolean							
			Tap Up Switch Stuck in the Up Position in Neutral Enabled	=	0	Boolean							
			Tap Up Switch Stuck in the Up Position in Park Enabled	=	0	Boolean							
			Tap Up Switch Stuck in the Up Position in Reverse Enabled	=	0	Boolean							
			Tap Up Switch ON	=	TRUE	Boolean							
			NOTE: Both Failcase1 and Failcase 2 Must Be Met									Fail Time (Sec)	
							Time Since Last Range Change	>=	1	Enable Time (Sec)			
							Ignition Voltage Lo	>=	8.5996				
							Ignition Voltage Hi	<=	31.999				
							Engine Speed Lo Engine Speed Hi	>= <=	400 7500	RPM RPM			
							Engine Speed is within the allowable limits for	>=	5	Sec			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	TI	HRESHOL	D VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
							P1765 Status is	Test Failed This Key On or Fault Active		
						Disable Conditions:		TCM: P1767, P1761, P182E, P1915 ECM: None		
Tap Up Tap Down Switch (TUTD)	P1766	Downshift Switch Circuit #2	Fail Case Tap Down Switch Stuck  1 in the Down Position in Range 1 Enabled	=	0	Boolean				Special No Trip
			Tap Down Switch Stuck in the Down Position in Range 2 Enabled	=	0	Boolean				
			Tap Down Switch Stuck in the Down Position in Range 3 Enabled	=	0	Boolean				
			Tap Down Switch Stuck in the Down Position in Range 4 Enabled	=	0	Boolean				
			Tap Down Switch Stuck in the Down Position in Range 5 Enabled	=	0	Boolean				
			Tap Down Switch Stuck in the Down Position in Range 6 Enabled	=	0	Boolean				
			Tap Down Switch Stuck in the Down Position in Range Neutral Enabled	=	1	Boolean				
			Tap Down Switch Stuck in the Down Position in Range Park Enabled	=	1	Boolean				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLI	O VALUE	SECONDARY PARAMETERS	ENABL	E CONDIT	TIONS	TIME REQUIRED	MIL ILLUM
			Tap Down Switch Stuck in the Down Position in Range Reverse Enabled	=	0	Boolean						
			Tap Down Switch ON	=	TRUE	Boolean					>= 1 sec	
			Fail Case Tap Down Switch Stuck in the Down Position in Range 1 Enabled	=	1	Boolean						
			Tap Down Switch Stuck in the Down Position in Range 2 Enabled	=	1	Boolean						
			Tap Down Switch Stuck in the Down Position in Range 3 Enabled	=	1	Boolean						
			Tap Down Switch Stuck in the Down Position in Range 4 Enabled	=	1	Boolean						
			Tap Down Switch Stuck in the Down Position in Range 5 Enabled	=	1	Boolean						
			Tap Down Switch Stuck in the Down Position in Range 6 Enabled	=	1	Boolean						
			Tap Down Switch Stuck in the Down Position in Neutral Enabled	=	0	Boolean						
			Tap Down Switch Stuck in the Down Position in Park Enabled	=	0	Boolean						
			Tap Down Switch Stuck in the Down Position in Reverse Enabled	=	0	Boolean						
			Tap Down Switch ON	=	TRUE	Boolean						
			NOTE: Both Failcase1 and Failcase 2 Must Be Met								>= 600 sec	
							Time Since Last Range Change	>=	1	Sec		
							Ignition Voltage Lo	>=	8.5996	Volts		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Engine Speed Lo			
					Engine Speed Hi			
					Engine Speed is within the allowable limits for	>= 5 Sec		
					P1766 Status is	Test Failed This ≠ Key On or Fault Active		
				Disable Conditions:	DTC's:	TCM: P1767, P1761, P182E, P1915 ECM: None		
Tap Up Tap Down Switch (TUTD)	P1767	Up and Down Shift Switch Circuit #2	TUTD Circuit Reads Invalid Voltage	= TRUE Boolean			Fail >= 60 Time (Sec)	Special No Trip
					Ignition Voltage Lo	>= 8.5996 Volts		
					Ignition Voltage Hi			
					Engine Speed Lo			
					Engine Speed Hi Engine Speed is within the			
					allowable limits for			
					P1767 Status is	Test Failed This ≠ Key On or Fault Active		
				Disable Conditions:				

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	П	"Transitional 1" Range State				One Trip
			Previous range	<b>≠</b>	CeTRGR_e_P RNDL_Drive6 Range State				
			Previous range	<b>≠</b>	CeTRGR_e_P RNDL_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					Fail >= 0.225 Second s	
			If Fail Timer has Expired then Increment Fail Counter					>= 15 Fail Counts	
			Fail Case 2 Current range	=	"Transitional Range State				
			S3 Pressure Switch indicates "Exhausted"	=	TRUE Boolean				
			Commanded Gear	=	1st Locked Gear				
			If the above conditions are present Increment Fail Timer					Fail >= 0.225 Second s	
			If Fail Timer has Expired then Increment Fail Counter					>= 15 Fail Counts	
			Fail Case 3 Current range	II	"Transitional 13"	Previous range	CeTRG R_e_P RNDL_ Drive5		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD	VALUE	SECONDARY PARAMETERS	ENABI	LE COND	DITIONS	TIME REQUIRED	MIL ILLUM.
			Either the S1 or S3 Pressure Switch indicates "Pressure Present"	=	TRUE	Boolean	Previous range	<b>≠</b>	CeTRO R_e_F RNDL_ Drive5	• -		
			Engine Torque	>=	-8192	Nm	IMS is 7 position configuration	=	0	Boolea n		
			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 Second s	
			If Fail Timer has Expired then Increment Fail Counter								>= 15 Fail Counts	
			Fail Case 4 Current range	=	"Transitiona 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						
			Steady State Engine Torque	>=	70	Nm						
			Steady State Engine Torque	<=	8191.75	Nm						

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD	) VALUE	SECONDARY PARAMETERS	ENAB	LE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			If the above conditions are present Increment Fail Timer							>= 0.225 Second s	
			If the above Condtions have been met, Increment Fail Counter							>= 15 Fail Counts	
			Fail Case 5 Current range	=	"Transitional	I					
			Engine Torque	>=	-50	Nm					
			Either the S1 or S3 Pressure Switch indicates "Pressure Present"	=	TRUE	Boolean					
			If the above conditions are present Increment Fail Timer							>= 0.225 Second s	
			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	<b>≠</b>	"Transit ional 11"		
			A Open Circuit (See Definition)	=	FALSE	Boolean	or				
							Last positive state	<b>≠</b>	Neutral		
							Previous transitional state	<b>≠</b>	Transiti onal 8 and Illegal		
							and				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD VALUE	SECONDARY PARAMETERS	ENABI	LE CONDITIONS	TIME REQUIRED	MIL ILLUM.
						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 Z Current PRNDL State	II	PRNDL circuit ABCP = 1101					
			and							
			Previous valid state	=	PRNDL circuit Range					
			Input Speed Reverse Trans Ratio Reverse Trans Ratio	<=	150 RPM 2.845825195 ratio 3.274169922 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	>=	8.5996 Volts		
						lgnition Voltage Hi Vehicle Speed Lo	<= <=	31.999 Volts 511 KPH		
						Engine Speed Lo	>=	400 RPM		
						Engine Speed Hi Engine Speed is within the	<=	7500 RPM		
						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	E CONDIT	TIONS	TIME	REQI	JIRED	MIL ILLUM.
						Disable Conditions:	DTC's:	TCM: P07 ECM: P07 P0103, P0 P0108, P0 P0174, P0 P0202, P0 P0205, P0 P0208, P0 P0302, P0 P0305, P0 P0308, P0	101, P010 0106, P01 0171, P01 0175, P02 0203, P02 0206, P02 0300, P03 0303, P03	02, 107, 172, 201, 204, 207, 301, 304,				
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) Fail	
											>=	5	Counts	
							Ignition Voltage Lo	>=	8.5996	Volts				
							Ignition Voltage Hi	<=	31.999	Volts				
							Vehicle Speed Lo	<=	511	KPH				
							Engine Speed Lo	>=	400	RPM				
							Engine Speed Hi Engine Speed is within the allowable limits for	<= >=	7500 5	RPM Sec				
							P1876 Status is	≠	Test Failed This Key On or Fault Active					
						Disable Conditions:		P0826, P1 P1877, P1	1761, P18 1915, U01	325,				
								ECM: Nor	ne					

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLI	O VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
Transmission Control Module (TCM)		Transmission Control Module Read Only Memory (ROM)	Incorrect program/calibrations checksum	= TRUE		None		Rom Test > 5 Fail Counter	One Trip
					Disable Conditions:		TCM: None ECM: None		
Transmission Control Module (TCM)	P0603	Transmission Control Module Long-Term Memory Reset	Non-volatile memory (static or dynamic) checksum failure			None			One Trip
					Disable Conditions:		TCM: None ECM: None		
Transmission Control Module (TCM)	P0604	Transmission Control Module Random Access Memory	RAM Read/Write Failure (Single Word)	= TRUE		None		>= 5 Count	One Trip
					Disable Conditions:		TCM: None ECM: None		
Transmission Control Module (TCM)	P062F	Transmission Control Module Long Term Memory Performance	TCM Non-Volatile Memory bit Incorrect flag	= TRUE		None			One Trip

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABL	E COND	ITIONS	TIME	REQU	JIRED	MIL ILLUM.
				Disable Conditions:		TCM: None						
						ECM: None						
Transmission Fluid Temperature Sensor (TFT)	P0711	Trans Fluid Temp Sensor Circuit Range/Performance	Fail Case  1 TFT Delta from Startup	<= 2 C°					>=	80	Fail Time (Sec)	Special No Tri
()					Vehicle Speed	>=	8	Kph				
					Vehicle Speed Above min for	>=	300	Sec				
					TCC Slip	>=	120	RPM				
					TCC Slip above min for		300	Sec				
					Transmission Fluid Temperature Lo	>=	-39	C°				
					Transmission Fluid Temperature High	-	20	C°				
					Engine Coolant Temp	>=	70	C°				
					Engine Coolant Temp Delta	>=	55	C°				
			Fail Case  2 TFT Delta from startup	< 2 C°					>=	80	Fail Time (Sec)	
					Vehicle Speed	>=	8	Kph				
					Vehicle Speed Above min for	>=	300	Sec				
					TCC Slip	>=	-20	RPM				
					TCC Slip above min for		0	Sec				
					Transmission Fluid Temperature	>=	129	C°				
					Transmission Fluid Temperature	<=	149	C°				
					Engine Coolant Temp	>=	70	C°				
					Engine Coolant Temp Delta from startup	>=	55	C°				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRE	SHOL	D VALUE	SECONDARY PARAMETERS	ENABI	LE CONDI	TIONS	TIME REQI	JIRED	MIL ILLUM.
			Fail Case 3 TFT Delta	>=	2	20	C°					>= 14	Fail Counts (100ms loop)	
			Fail Case									< 7	Sample Time (Sec)	
			4 Transmission Fluid Temperature		2	20	C°					Refer to >= Table 1	Fail Time (Sec)	
								Engine Torque Lo Engine Torque Hi Throttle Position Lo Throttle Position Hi Vehicle Speed Lo Vehicle Speed Hi Engine Speed Hi Engine Coolant Lo Engine Coolant Hi Engine Torque Signal Valid Throttle Position Signal Valid	>= >= >= =	50 1492 8.0002 89.999 8 511.99 500 6500 -39 149 TRUE TRUE	N*m Pct Pct Kph Kph RPM RPM C° C°			
								P0711 Common Enable Conditions Transmission Fluid Temperature Lo Transmission Fluid	>=	-39	C°			
								Temperature Hi Ignition Voltage Ignition Voltage Engine speed	<= >= <= >=	149 8 31.999 Refer to Table 4	V V RPM			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Engine speed above min for	Refer >= to Sec Table 5		
					Engine speed above min for	>= 5 Sec		
					Engine Speed	>= 500 RPM		
					Engine Speed	<= 6500 RPM		
					Engine speed between min/max for	>= 5 Sec		
					Engine Speed Status Valid			
					Engine Coolant Sensor Signal Valid	= TRUE Boolean		
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0716, P0717, P0722, P0723, P0742		
						ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0116, P0117, P0118, P0125, P0128, P0171, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0335, P0336, P0340, P0345, P0346, P0365, P0366, P0390, P0391, P0401, P042E		
Transmission Fluid Temperature Sensor (TFT)	P0712	Transmission fluid temperature thermistor failed at a high temperature (short to ground).	TFT resistance	<= 48 Ω			Fail >= 12 Time (Sec)	Special No Trip
					Ignition Voltage Ignition Voltage Engine Speed Engine Speed	>= 500 RPM		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD	VALUE	SECONDARY PARAMETERS	ENABI	E CONDI	TIONS	TIME	REQU	IIRED	MIL ILLUM.
					Disable Conditions:	Engine speed between min/max for Engine Speed Status Valid MIL not Illuminated for DTC's:	=	5 TRUE CM: None P0335, P					
Transmission Fluid Temperature Sensor	P0713	Transmission fluid temperature thermistor failed at a low	TFT resistance	>= 97292	Ω		P0340	, P0345, F , P0366, F P0391	20346,	>=	80	Fail Time	Special No Trip
(TFT)	1 07 10	temperature (open or short to power).	Ti i i i i i i i i i i i i i i i i i i	01202		Output Speed Output Speed above min for TCC Slip speed	>=	200 200 120	RPM Sec RPM			(Sec)	
						TCC Slip Speed above min for Ignition Voltage Ignition Voltage Engine Speed Engine Speed	<= >=	200 8 31.999 500	sec V V RPM				
						Engine Speed Engine speed between min/max for Engine Speed Status Valid	>=	6500 5 TRUE	RPM Sec				
					Disable Conditions:	MIL not Illuminated for DTC's:	ECM: P0340	P0716, P P0335, P , P0345, F , P0366, F P0391	0336, 20346,				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOL	D VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS		ENABLE CONDITIONS		ENABLE CONDITIONS		ENABLE CONDITIONS		TIME REQU	IRED	MIL ILLUM.
Transmission Input Speed Sensor (TISS)	P0716	Input Speed Sensor Performance	Input speed drop $\Delta$	>=	1000	RPM					>= 3.25	sec	Two Trips					
							Ignition Voltage Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine speed between min/max for Engine Speed Status Valid Engine Torque Engine Torque Engine Torque Engine Torque Signal Valid Vehicle Speed Input Speed min Input Speed above min for Positive ISS Δ Positive ISS Δ less than min for Throttle	<pre>&lt;= &gt;= &gt;= &lt;= &gt;=</pre>	8 31.999 500 6500 5 TRUE 50 1492 TRUE 16 1050 2 500 2 8.0002 TRUE	volts volts RPM RPM Sec N*m N*m KPH RPM Sec RPM Sec RPM Sec								

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
Transmission Input Speed Sensor (TISS)	P0717	Input Speed Sensor Circuit Low Voltage	input speed	Disable Conditions:		TCM: P0717, P0722, P0723, P0752, P0973, P0974  ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0340, P0345, P0366, P0390, P0391, P0401, P042E  >= 8 volts <= 31.999 volts >= 500 RPM <= 6500 RPM >= 5 Sec  = TRUE >= 50 N*m	>= 4.5 Sec	Two Trips
					Engine Torque Engine Torque Signal Valid Vehicle Speed	<= 1492 N*m = TRUE >= 16 Kph		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOL	D VALUE	SECONDARY PARAMETERS	ENABL	E CONDI	TIONS	TIME	REQUI	RED	MIL ILLUM.
					Disable Conditions:	MIL not Illuminated for DTC's:	ECM: P0103, P0108, P0174, P0202, P0205, P0208, P0302, P0305, P0308, P0340, P0365,	P0722, P0 P0101, P0 P0106, P0171, P0175, P0175, P0203, P0203, P0300, P0300, P0303, P03	0102, 0107, 0172, 0201, 0204, 0207, 0301, 0304, 0307, 0336, 0346,				
Tow Haul Switch	P071A	Tow Haul switch circuit low	Tow Haul switch circuit low (switch closed)	= TRUE	Disable Conditions:	Ignition Voltage Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine speed between min/max for Engine Speed Status Valid  MIL not Illuminated for DTC's:	ECM: P0340,	8 31.999 500 6500 5 TRUE CM: P176; P0335, Pi P0345, P. P0366, P.	0336, 0346,	>=	600	sec	Special No Trip
Transmission Output Speed Sensor (TOSS)	P0722	Output Speed Sensor Circuit Low Voltage	TOSS	<= 50	rpm	Ignition Voltage Ignition Voltage Engine Speed Engine Speed	>= <= >= <=	8 31.999 500 6500	volts volts RPM RPM	>=	4.5	Sec	Two Trips

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENAB	LE CONDI	TIONS	TIME REQUIRED	MIL ILLUM.
					Engine speed between min/max for	>=	5	Sec		
					Engine Speed Status Valid	=	TRUE			
					Engine Torque min & Range= R or D	>=	50	N*m		
					Engine Torque max & Range= R or D	<=	1492	N*m		
					Engine Torque min & Range= P/N	>=	1492	N*m		
					Engine Torque max & Range= P/N	<=	1492	N*m		
					Engine Torque Signal Valid	=	TRUE			
					Throttle Position	>=	8.0002	%		
					Throttle Position Signal Valid	=	TRUE			
					Input Speed		1500	RPM		
					Input Speed TCC Slip		6500 -20	RPM RPM		
					Trans Temp		-40	C		
				Disable Conditions:	MIL not Illuminated for DTC's:	ECM: P0103 P0108	: P0716, P P0722 : P0101, F 3, P0106, F 3, P0171, F	20102, 20107, 20172,		
						P0202 P0203 P0203 P0302 P0303 P0304	4, P0175, F 2, P0203, F 5, P0206, F 83, P0300, F 2, P0303, F 5, P0306, F 83, P0335, F 0, P0345, F	P0204, P0207, P0301, P0304, P0307, P0336, P0346,		
							5, P0366, F 1, P0401, F			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITION	S TIME REQUIRED	MIL ILLUM.
Transmission Output Speed Sensor (TOSS)	P0723	Output Speed Sensor Circuit Intermittent	Output Speed Drop ∆	> 1200 RPM			>= 3.25 Sec	Two Trips
					lgnition Voltage Ignition Voltage Engine Speed Engine Speed	<= 31.999 vo >= 500 RF <= 6500 RF	ts M	
					Engine speed between min/max for Engine Speed Status Valid	>= 5 56	С	
					Range Change Timer 4WD Range Timer			
					Input Speed $\Delta$ Input Speed $\Delta$	< 500 RF >= 2 Se	M c	
					Raw Output Speed min Raw Output Speed > min for			
					Positive Output Speed $\Delta$ Positive Output Speed $\Delta$ <max for<="" td=""><td>&lt;= 500 RF &gt;= 2 Se</td><td></td><td></td></max>	<= 500 RF >= 2 Se		
				Disable Conditions:		TCM: P0716, P0717 P0974	,	
						ECM: P0335, P0336 P0340, P0345, P0346 P0365, P0366, P0396 P0391	<b>5</b> ,	
Torque Converter Clutch (TCC)	P0741	TCC System Stuck OFF	TCC Slip Error	>= Refer to table 3 RPM			>= 5 Sec >= 3 Count	Two Trips
					lgnition Voltage Ignition Voltage Engine Speed Engine Speed	<= 31.999 \ >= 500 RF	м	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABI	LE CONDI	TIONS	TIME REQUIRED	MIL ILLUM.
					Engine speed between min/max for	>=	5	Sec		
					Engine Speed Status Valid	=	TRUE			
					Engine Torque	>=	80	N*m		
					Engine Torque	<=	400	N*m		
					Trottle Position	>=	10.001	%		
					Trottle Position	<=	89.999	%		
					2nd Gear Ratio	>=	1.511			
					2nd Gear Ratio		1.739	Ratio		
					3rd Gear Ratio					
					3rd Gear Ratio	<=				
					4th Gear Ratio	>=	0.647	Ratio		
					4th Gear Ratio TFT	<= >=	0.745 -7	Ratio C		
					TFT	<=	130	С		
					TCC Capacity	>=	64.999	%		
					100 dapacity	, –	04.000	70		
					TCC Capacity Timer	>=	######	sec		
					TCC Mode	=	On or Lock			
					PTO Active	=	FALSE			
					Engine Torque Status Valid	=	TRUE			
					Throttle Position Signal Valid	=	TRUE			
					If 4L80E Cmd Gear	≠	4th			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	ו	HRESHOLI	) VALUE	SECONDARY PARAMETERS	ENABI	E CONDI	TIONS	TIME	REQU	JIRED	MIL ILLUM.
						Disable Conditions:	MIL not Illuminated for DTC's:	P0722 P0842 P2764 ECM: P0103 P0108 P0174 P0202 P0205 P0208 P0302 P0305 P0308 P0340 P0365	P0716, P , P0723, F , P0843, F , P2769, F P0101, P , P0106, F , P0171, F , P0203, F , P0206, F , P0300, F , P0305, F , P0305, F , P0345, F , P0366, F , P0366, F	20742, 22763, 22770 0102, 20107, 20172, 20201, 20204, 20207, 20301, 20304, 20307, 20336, 20346, 20390,				
Torque Converter Clutch (TCC)	P0742	TCC System Stuck ON	TCC Slip Speed		-20	RPM			, , , , , ,	0.22	>=	6	Sec	Two Trips
			TCC Slip Speed	<=	20	RPM	Ignition Voltage Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine speed between min/max for Engine Speed Status Valid Engine Torque Engine Torque TFT TFT Trottle Position Trottle Position Vehicle Speed Vehicle Speed Engine Speed Engine Speed Engine Speed Gear Ratio Gear Ratio	>= <= >= = = >= >= >= >= >=	8 31.999 500 6500 5 TRUE 90 1492 -7 130 10.001 89.998 16 511 500 6500 0.642 1.787	V V RPM RPM Sec N*m C C % % KPH KPH RPM RPM Ratio Ratio	=	5	Count	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
						Commanded Gear	1st ≠ Gear		
						TCC Mode			
						Engine Torque Status Valid	t = TRUE		
						Throttle Position Signal Valid	t = TRUE		
						PTO Active	e = FALSE		
					Disable Conditions:				
							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, P0335, P0336, P0340, P0345, P0346, P0365, P0366, P0390, P0391, P0401, P042E		
Shift solenoid A Performance	P0751	Shift Solenoid Valve A Stuck Off 2-2-3-3	Fail Case  1 1st gear low ratio multiplier	>=	0.949951172 Pct			= 2 Sec	Two Trips
			1st gear high ratio multiplier	<=	1.050048828 Pct				
			Fail Case 4th gear low ratio 2 multiplier	>=	0.949951172 Pct			= 2 Sec	
			4th gear high ratio multiplier	<=	1.050048828 Pct				
						lgnition Voltage Ignition Voltage		= 2 counts	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENAB	LE CONDI	TIONS	TIME REQUIRED	MIL ILLUM.
					Engine Speed		500	RPM		
					Engine Speed	<=	6500	RPM		
					Engine speed between min/max for		5	Sec		
					Engine Speed Status Valid	=	TRUE			
					Gear Slip	>=	150	RPM		
					Gear Slip Fail Time	>=	0.5	Sec		
					Throttle		8.0002	Pct		
					Engine Torque		50	N*m		
					Output Speed		50	RPM		
					Input Speed		50	RPM		
					4WD Range Timer		6	Sec		
					Range Change Timer		6	Sec		
					PTO Active		FALSE			
					Trans Temp Trans Temp		20	C C		
							130	C		
					Engine Torque Signal Valid	=	TRUE			
					Throttle Position Signal Valid	=	TRUE			
				Disable Conditions:	MIL not Illuminated for DTC's:	P0722 P0974 P1915 P182E P074 P276 ECM: P0103 P0104 P0174	P0716, P. 2, P0723, P 4, P0976, P 5, P182A, P 0, P182E, F 1, P0742, P 4, P2769, F : P0101, P 3, P0106, P 3, P0175, P 4, P0175, P 2, P0203, P 5, P0206, P	20973, 20977, 2182C, 2182F, 22763, 22770 20102, 20107, 20172, 20201, 20204,		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD VALUE	SECONDARY PARAMETERS	ENAB	LE CONDI	TIONS	TIME R	EQUI	RED	MIL ILLUM.
							P0302 P0305 P0308 P0340 P0365	8, P0300, P 2, P0303, P 5, P0306, P 8, P0335, P 0, P0345, P 5, P0366, P 1, P0401, F	20304, 20307, 20336, 20346, 20390,				
Shift solenoid A Performance	P0752	Shift Solenoid Valve A Stuck On 1-1-4-4	Fail Case 2nd gear low ratio 1 multiplier	>=	0.949951172 Pct					=	2	Sec	Two Trips
			2nd gear high ratio multiplier	<=	1.050048828 Pct								
			Fail Case 3rd gear low ratio 2 multiplier	>=	0.949951172 Pct					=	2	Sec	
			3rd gear high ratio multiplier	<=	1.050048828 Pct								
						Ignition Voltage Ignition Voltage	>= <=	8 31.999	volts	=	2 (	counts	
						Engine Speed Engine Speed	>= <=	500 6500	RPM RPM				
						Engine speed between min/max for	>=	5	Sec				
						Engine Speed Status Valid Gear Slip	= >=	TRUE 150	RPM				
						Gear Slip Fail Time Throttle	>= >=	0.5 8.0002	Sec Pct				
						Engine Torque Output Speed	>=	50 50	N*m RPM				
						Input Speed 4WD Range Timer	>=	50 6	RPM Sec				
						Range Change Timer PTO Active	>=	6 FALSE	Sec				
						Trans Temp Trans Temp	>= <=	20 130	C C				
						Engine Torque Signal Valid Throttle Position Signal Valid	=	TRUE					
						j							

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
				Disable Conditions:		TCM: P0716, P0717, P0722, P0723, P0973, P0974, P0976, P0977, P1915, P182A, P182C, P182D, P182E, P182E, P0741, P0742, P2763, P2764, P2769, P2770  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, P0335, P0336, P0340, P0345, P0346, P0365, P0366, P0390, P0391, P0401, P042E		
Shift solenoid B Performance	P0756	Shift Solenoid Valve B Stuck On 4-3-3-4	<u>Fail Case</u> 1 1st gear low ratio multiplier				= 2 Sec	One Trip
			1st gear high ratio multiplier					
			Fail Case 2nd gear low ratio 2 multiplier	>= 0.949951172 Pct			= 2 Sec	
			2nd gear high ratio multiplier	<= 1.050048828 Pct				
					Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine speed between min/max for Engine Speed Status Valid Gear Slip	<= 31.999 volts >= 500 RPM <= 6500 RPM >= 5 Sec = TRUE	= 2 counts	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Gear Slip Fail Time			
					Throttle			
					Engine Torque			
					Output Speed			
					Input Speed			
					4WD Range Timer			
					Range Change Timer			
					PTO Active			
					Trans Temp			
					Trans Temp Engine Torque Signal Valid			
					Throttle Position Signal Valid			
				Disable Conditions	MIL not Illuminated for	TCM: P0716, P0717,		
Shift solenoid B Performance	P0757	Shift Solenoid Valve B Stuck Off 1-2-2-1	Fail Case  1 3rd gear low ratio multiplier	>= 0.949951172 Pct			= 2 Sec	One Trip
			3rd gear high ratio multiplier	<= 1.050048828 Pct				

## 11 OBDG07 TRANS Diagnostics

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD VALUE	SECONDARY PARAMETERS	ENAE	BLE CONDI	TIONS	TIME REQU	JIRED	MIL ILLUM.
			Fail Case 2 4th gear low ratio multiplier	>=	0.949951172 Pct					= 2	Sec	
			4th gear high ratio multiplier	<=	1.050048828 Pct							
						Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine speed between min/max for Engine Speed Status Valid Gear Slip Gear Slip Fail Time Throttle Engine Torque Output Speed Input Speed 4WD Range Timer Range Change Timer PTO Active Trans Temp Trans Temp Engine Torque Signal Valid		8 31.999 500 6500 5 TRUE 150 0.5 8.0002 50 50 6 6 FALSE 20 130 TRUE	volts volts RPM RPM Sec Pct N*m RPM RPM Sec C C C	= 2	counts	
					Disable Conditions:	Throttle Position Signal Valid  MIL not Illuminated for DTC's:	TCM P072 P097 P191: P182: P074 P276	TRUE  1: P0716, P 12, P0723, F 14, P0976, F 15, P182A, F 10, P182E, F 11, P0742, F 14, P2769, F	20973, 20977, 2182C, 2182F, 22763, 22770			
							P010	l: P0101, P 3, P0106, F 8, P0171, F	20107,			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD	VALUE	SECONDARY PARAMETERS	ENABLE CONDITION	IS T	ME REC	UIRED	MIL ILLUM.
							P0174, P0175, P020 P0202, P0203, P020 P0205, P0206, P020 P0208, P0300, P030 P0302, P0303, P030 P0305, P0306, P030 P0308, P0335, P033 P0340, P0345, P034 P0365, P0366, P039 P0391, P0401, P042	1, 7, 1, 1, 7, 5, 6,			
Shift Solinoid	P0973	Shift Solenoid A Control Circuit Low Voltage	hardware circuitry detects open or short to ground	= TRUE				;	>= 44	Fail Count (100ms loop)	Two Trips
								Out	of 50	Sample Counts (100ms loop)	
						Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine speed between min/max for	>= 8 vc <= 31.999 vc >= 500 RI <= 6500 RI >= 5 S	ts PM PM			
					Disable Conditions:		= TRUE  TCM: None  ECM: P0335, P0336 P0340, P0345, P034 P0365, P0366, P039 P0391	3,			
Shift Solinoid	P0974	Shift Solenoid A Control Circuit High Voltage	hardware circuitry detects a short to voltage					;	>= 44	Fail Count (100ms loop)	Two Trips

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
							Out of 50 Sample Counts (100ms loop)	
					Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine speed between min/max for Engine Speed Status Valid	<= 31.999 volts >= 500 RPM <= 6500 RPM >= 5 Sec		
				Disable Conditions:		TCM: None  ECM: P0335, P0336, P0340, P0345, P0346, P0365, P0366, P0390, P0391		
Shift Solinoid	P0976	Shift Solenoid B Control Circuit Low Voltage	hardware circuitry detects open or short to ground	= TRUE			Fail >= 44 Count (100ms loop)	One Trip
							Sample Counts Out of 50 (100ms loop)	
					Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine speed between min/max for Engine Speed Status Valid	<= 31.999 volts >= 500 RPM <= 6500 RPM >= 5 Sec		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE		SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
				D Cond	isable itions:	MIL not Illuminated for DTC's:	TCM: None  ECM: P0335, P0336, P0340, P0345, P0346, P0365, P0366, P0390, P0391		
Shift Solinoid	P0977	Shift Solenoid B Control Circuit High Voltage	hardware circuitry detects a short to voltage	= TRUE				Fail Count (100ms loop)	One Trip
								Sample Out of 50 Counts (100ms loop)	
						Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine speed between min/max for Engine Speed Status Valid	<= 31.999 volts >= 500 RPM		
				D Cond	isable itions:	MIL not Illuminated for DTC's:	TCM: None  ECM: P0335, P0336, P0340, P0345, P0346, P0365, P0366, P0390, P0391		
Transmission Range Switch (Neutral Safety Back Up Switch NSBU)	P1759	NSBU-Circuit P Low	NSBU circuit P Low	= TRUE				>= 8 sec	Two Trips

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
							>= 1 count	
					Engine Torque	>= 50 N*m		
					Engine Torque			
					Ignition Voltage			
					Ignition Voltage			
					Engine Speed Engine Speed			
					Engine speed between			
					min/max for Engine Speed Status Valid			
					Engine Torque Signal Valid			
					Range = Park for	>= 1 sec		
				Disable Conditions:		TCM: None		
						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, P0335, P0336,		
						P0340, P0345, P0346,		
						P0365, P0366, P0390, P0391, P0401, P042E		
								Special No Trip
Transmission Mode		Trans mode switch signal circuit	Rolling count value					
Switch	P1762	(BCM to TCM Rolling Count	received from BCM does	= TRUE			>= 3 cont	
		check)	not match expected value					
							= 10 sec	
					Engine Speed	>= 500 RPM	- 10 Sec	
					Engine Speed			
					Engine speed between			
					min/max for			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE		SECONDARY PARAMETERS	ENABLE CONDITIONS				TIONS	TIME	REQU	IRED	MIL ILLUM.
					isable itions:	Engine Speed Status Valid  MIL not Illuminated for DTC's:	ECM: P0340,	TRUE  CM: None  P0335, P , P0345, F , P0366, F P0391	0336, 0346,						
Transmission Range Switch (Neutral Safety Back Up Switch NSBU)	P1815	Transmission Range Switch-Start in Wrong Range	Range= Park or Neutral	= FALSE						>=	2	sec	Two Trips		
						Ignition Voltage Ignition Voltage Engine Speed Power Mode Crank request	>= <= >= = <=	8 31.999 560 Crank 409	volts volts RPM Sec						
					isable itions:	MIL not Illuminated for DTC's:	TCM: None ECM: None								
Internal Mode Switch (IMS)	P182A	Internal Mode Switch-Circuit A	IMS circuit A low	= TRUE						>=	8	sec count	Two Trips		
						Engine Torque Engine Torque Ignition Voltage Ignition Voltage	>= <= >= <=	50 1492 8 31.999	N*m N*m volts volts						

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENAB	LE CONDI	TIONS	TIME F	EQUIRED	MIL ILLUM.
					Engine Speed Engine Speed	>= <=	500 6500	RPM RPM			
					Engine speed between min/max for	>=	5	Sec			
					Engine Speed Status Valid	=	TRUE				
					Engine Torque Signal Valid		TRUE				
					Range = Park for		1	sec			
				Disable Conditions:		ECM: P0103 P0104 P0174 P0202 P0208 P0302 P0308 P0308 P0344 P0368	P0101, P B, P0106, F B, P0171, F C, P0203, F C, P0206, F B, P0300, F C, P0306, F B, P0306, F B, P0345, F C, P0345, F C, P0345, F C, P0345, F	20102, 20107, 20172, 20201, 20204, 20207, 20301, 20307, 20307, 20336, 20346, 20390,			
Internal Mode Switch (IMS)	P182C	Internal Mode Switch-Circuit B	IMS circuit B High	= TRUE					>=	8 sec	Two Trips
					Engine Torque	>=	50	N*m	>=	1 count	
					Engine Torque Engine Torque Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine speed between min/max for Engine Speed Status Valid	\" \" \" \" \" \" \" \" \" \" \" \" \" \	50 1492 8 31.999 500 6500 5	N*m volts volts RPM RPM			
					Engine Torque Signal Valid	=	TRUE				
					Range = Park for		1	sec			

Disable Conditions:   MilL not Illuminated for DTC's:   ECM. P0101, P0102, P0103, P0104, P0104, P0104, P0104, P0105, P0104, P0105, P0104, P0105, P0104, P0105, P0	COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDI	TIONS	TIME	REQI	JIRED	MIL ILLUM.
Range = Mark for >= 1 Sec		P182D	Internal Mode Switch-Circuit P	IMS circuit P Low	Conditions:	Engine Torque Engine Torque Engine Torque Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed Engine Speed Engine Speed Status Valid	ECM: P0101, P P0103, P0106, F P0108, P0171, F P0174, P0175, F P0202, P0203, F P0208, P0300, F P0308, P0305, P P0308, P0305, P P0308, P0340, P P0340, P0345, F P0365, P0366, F P0391, P0401, F  >= 50 <= 1492 >= 8 <= 31.999 >= 500 <= 6500 >= 5  = TRUE = TRUE	0102, 20107, 20172, 20201, 20204, 20307, 20307, 20307, 20336, 20346, 203				Two Trips

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALU	E	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
				Со	Disable nditions:	MIL not Illuminated for DTC's:	TCM: None  ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0306, P0307, P0308, P0336, P0340, P0345, P0346, P0365, P0366, P0390, P0391, P0401, P042E		
Internal Mode Switch (IMS)	P182E	Internal Mode Switch-Invalid	IMS Range Illegal	= TRUE	Disable nditions:	Ignition Voltage Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine speed between min/max for Engine Speed Status Valid  MIL not Illuminated for DTC's:		>= 8 sec	Two Trips
Internal Mode Switch (IMS)	P182F	Internal Mode Switch-Circuit C	IMS circuit C High	= TRUE		Engine Torque Engine Torque Signal Valid Ignition Voltage Ignition Voltage	>= 8 volts	>= 8 sec >= 1 count	Two Trips

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD	VALUE	SECONDARY PARAMETERS	ENABL	E CONDIT	TIONS	TIME REQU	IRED	MIL ILLUM.
					Disable Conditions:	Vehicle Speed 1st gear ratio low 1st gear ratio High 2nd gear ratio High 3rd gear ratio low 3rd gear ratio low 3rd gear ratio low 4th gear ratio High MIL not Illuminated for DTC's:	>= <= >= TCM: ECM: P0103, P0108, P0174, P0202, P0205, P0208, P0302,	3.274 1.511 1.74 0.9301	0723 0102, 0107, 0172, 0201, 0204, 0207, 0301, 0304,			
Internal Mode Switch (IMS)	P1915	Internal Mode Switch-Start in Wrong Range	Range= Park or Neutral	= FALSE	TRUE	Ignition Voltage Ignition Voltage Engine Speed Power Mode	>= <= >= =	8 31.999 560 Crank	volts volts RPM	>= 2	sec	Two Trips
					Disable Conditions:	Crank request  MIL not Illuminated for  DTC's:	TCM: None ECM: None	409	Sec			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE		SECONDARY PARAMETERS		ENABLE CONDITIONS		TIME REQUIRED			MIL ILLUM.
Ignition 1 Circuit Low Voltage	P2534	No Ignition Voltage at the TCM	Ignition 1 (run/crank) input	<= 2	volt					>=		Fail Count (25ms loop)	One Trip
										Out of	220	Sample Count (25ms loop)	
						Engine running state from ECM Power Mode	=	Running Acc or Run					
					Disable Conditions:		TCM: None ECM: None						
TCC PWM Solenoid	P2763	TCC PWM Solenoid circuit high voltage	Hardware circuitry detects a short to voltage	= TRUE						>=	44 (	Fail Count (100ms loop)	Two Trips
										Out of	50	Sample Counts (100ms loop)	
						Ignition Voltage Ignition Voltage Engine Speed Engine Speed	>= <= >= <=	8 31.999 500 6500	V V RPM RPM				
						Engine speed between min/max for Engine Speed Status Valid TCC PWM command	>= = =	5 TRUE ON	Sec				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALU	E	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
				Cor	Disable nditions:	MIL not Illuminated for DTC's:	TCM: None  ECM: P0335, P0336, P0340, P0345, P0346, P0365, P0366, P0390, P0391		
TCC PWM Solenoid	P2764	TCC PWM Solenoid circuit low voltage	Hardware circuitry detects open or short to ground	= TRUE				Fail Count (100ms loop)	Two Trips
								Sample Counts Out of 50 (100ms loop)	
						Ignition Voltage Ignition Voltage Engine Speed Engine Speed	>= 8 V <= 31.999 V >= 500 RPM <= 6500 RPM		
						Engine speed between min/max for Engine Speed Status Valid TCC PWM command	>= 5 Sec = TRUE = OFF		
				Cor	Disable nditions:	MIL not Illuminated for DTC's:	TCM: None  ECM: P0335, P0336, P0340, P0345, P0346, P0366, P0390, P0391		
TCC Enable Solenoid	P2769	TCC enable solenoid circuit low voltage	Hardware circuitry detects open or short to ground	= TRUE				>= 44 Fail Count (100ms loop)	Two Trips
								Sample Counts (100ms loop)	
						lgnition Voltage Ignition Voltage Engine Speed Engine Speed	>= 8 V <= 31.999 V >= 500 RPM <= 6500 RPM		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
				Disable Conditions:		= TRUE = OFF  TCM: None		
TCC Enable Solenoid	P2770	TCC enable solenoid circuit high voltage	Hardware circuitry detects a short to voltage				>= 44	Two Trips
					Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine speed between min/max for Engine Speed Status Valid TCC Enable solenoid	<pre>&lt;= 31.999  V &gt;= 500</pre>		
				Disable Conditions:	MIL not Illuminated for	TCM: None		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE		SECONDARY ENABLE CONDITIONS PARAMETERS		TIME	REQUIRED	MIL ILLUM.
Communication	U0073	Controller Area Network Bus Communication Error	CAN Bus Detects Invalid Message Error		oolean			>=	Fail Count (1000m s loop)	Two Trips
								Out of	Sample Counts (1000m s loop)	
						Ignition On				
				(	Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None			
Communication	U0100	Lost Communications with Engine Control System	Comm. Message Invalid Between ECU and TCM	= TRUE Bo	oolean			>=	Fail Count (1000m s loop)	Two Trips
								Out of	Sample Counts (1000m s loop)	
						Ignition Voltage Lo Ignition Voltage Hi Power Mode	>= 11 Volt <= 18 Volt = Run			
				(	Disable Conditions:	MIL not Illuminated for DTC's:	TCM: U0073 ECM: None			

## **Supporting Documents - 4L60 Unique Cal Tables**

Table 1

						Units
Axis	-40	-25	-10	5	20	Deg C
Curve	1900	1000	800	520	200	Sec

Table 2

																		Units
Axis	0	6.248474	12.49695	18.74542	24.9939	31.24237	37.49084	43.73932	49.98779	56.23627	62.48474	68.73322	74.98169	81.23016	87.47864	93.72711	99.97559	PCT
Curve	0	60	120	180	280	392	480	552	600	624	624	624	624	624	624	624	624	Кра

Table 3

										Units
Axis	0	64	128	192	256	320	384	448	512	Nm
Curve	100	100	100	100	100	100	150	150	150	RPM

Table 4

_										Jnits
Axis	-40	-16.25	7.5	31.25	55	78.75	102.5	126.25	150	Deg C
Curve	600	400	400	400	400	400	400	400	400 F	₹PM

Table 5

					U	Inits
Axis	-40	7.5	55	102.5	150 D	eg C
Curve	0.1	0.15	0.2	0.3	0.3 <b>S</b>	ec