Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	I	Mil Illum.
Transmission Control Module (TCM)	P0601	Transmission Electro- Hydraulic Control Module Read Only Memory			TRUE Boolean			5	Fail Counts	One Trip
					Disable Conditi ons:	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 Continousl y		One Trip
					Disable Conditi ons:	MIL not Illuminated for DTC's:				
Transmission Control Module (TCM)	P0604	Transmission Electro- Hydraulic Control Module Random Access Memory	RAM Read/Write Failure (Single Word)		TRUE Boolean			>= 5	Fail Counts	One Trip
									Sample Counts	
					Disable Conditi ons:	MIL not Illuminated for DTC's:	TCM: P0604 ECM: None			
Transmission Control Module (TCM)	P062F	Transmission Electro- Hydraulic Control Module Long Term Memory Performance	TCM Non-Volatile Memory bit Incorrect flag at Powerdown	=	TRUE Boolean			Runs Continousl y		One Trip

Component/ System	Fault Code	Monitor Strategy  Description	Malfunction Criteria		Thres Val		Secondary Malfunction		Enable Condition			Time Requir		Mil Illum.
- Gystom		2000p.iio.ii				Disable Conditi ons:	for DTC's:					·		
Transmission Control Module (TCM)	P0634	Transmission Electro- Hydraulic Control Module Internal Temperature Too High	<u>Fail</u> <u>Cas</u> <u>e 1</u> Substrate Temperature		144	°C					>=	5	Fail Time (Sec)	One Trip
			<u>Fail</u> <u>Cas</u> Substrate <u>e 2</u> Temperature		50	°C					>=	2	Fail Time (Sec)	_
			Ignition Voltage	>=	18	Volts								
			Note: either fail case can set the DTC											_
							Ignition Voltage Lo	>=	9	Volts				1
							Ignition Voltage Hi	<=	31.99	Volts				
							Substrate Temp Lo	>=	0	°C				
							Substrate Temp Hi	<=	240	°C				
							Substrate Temp Between Temp Range for Time	>=	0.25	Sec				
							P0634 Status is	<b>≠</b>	Test Failed This Key On or Fault Active					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Require	d	Mil Illum.
				Disable Conditi ons:	for DTC's:				
High Side Driver 1	P0658	Actuator Supply Voltage Circuit Low	The HWIO reports a low voltage (open or ground short) error flag	= TRUE Boolean			>= 3	Fail Counts	One Trip
							out of 5	Sample Counts	
					P0658 Status is not	Test Failed This = Key On or Fault Active			
					High Side Driver 1 On	= True Boolean			
				Disable Conditi ons:	for DTC's:				
Transmission Control Module (TCM)	P0667	TCM Internal Temp (substrate) Sensor Circuit Range/Performance	If transmission oil temp to substrate temp Δ	> supporti °C					Two Trips

Component/ System	Fault Code	Monitor Strategy  Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enab Conditi			Time Requir		Mil Illum.
- Cystem	oode	Безеприон	If TCM substrate temp to power up temp Δ	Refer to Table 20 in							
			Both conditions above required to increment fail counter					>=	3000	Fail Counts (100ms loop)	
			Note: table reference temp = to the median temp of trans oil temp, substrate temp and power up temp.					Out of	3750	Sample Counts (100ms loop)	
			Non-continuous (intermittent) fail conditions will delay resetting fail counter until					>=	700	Pass Counts (100ms loop)	
								Out of	875	Sample Counts (100ms loop)	
					Engine Torque Signal Valid	= TRUE	Boolean				
					Accelerator Position Signal Valid	= TRUE	Boolean				
					Ignition Voltage Lo		Volts				
					Ignition Voltage Hi Engine Speed Lo		Volts RPM				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enabl Conditi		Time Required	Mil Illum.
j					Engine Speed Hi	<=	7500	RPM		
					Engine Speed is within the allowable limits for	>=	5	Sec		
					Brake torque active	=	FALSE			
					Below describes the brake torque entry criteria					
					Engine Torque	>=	90	N*m		
					Throttle	>=	30	Pct		
					Transmission Input Speed	<=	200	RPM		
					Vehicle Speed	<=	8	Kph		
					Transmission Range	≠	Park			
					Transmission Range	≠	Neutral			
					PTO	=	Not Active			
					Set Brake Torque Active TRUE if above conditions are met for:		7	sec		
					Below describes the brake torque exit criteria					
					Brake torque entry criteria	=	Not Met			
					Clutch hydraulic pressure		Clutch Hydrau lic 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 Malfunction	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:			
					P0667 Status is	Test Failed This ≠ Key On or Fault Active		
				Disable Conditi ons:	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		

Component/	Fault	Monitor Strategy	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
Transmission Control Module (TCM)	P0668	Description  TCM internal temperature (substrate) thermistor failed at a low voltge	Type of Sensor Used	CeTFTI = _e_Volt ageInve rseProp	Wallunction	Conditions	Required	Two Trips
			If TCM Substrate Temperature Sensor = Direct Proportional and Temp					
			If TCM Substrate Temperature Sensor = Indirect Proportional and Temp	>= 254 °C				
			Either condition above will satisfy the fail conditions				Fail >= 60 Timer (Sec)	
					Ignition Voltage Lo	>= 9 Volts		
					Ignition Voltage Hi	<= 31.99 Volts		
					Engine Speed Lo	>= 400 RPM		
					Engine Speed Hi	<= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		
					P0668 Status is	Test Failed This ≠ Key On or Fault Active		
				Disable Condit ons	i for DTC's:	TCM: None ECM: None		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Condition			Time Require	d	Mil Illum.
Transmission Control Module (TCM)	P0669	TCM internal temperature (substrate) thermistor failed at a high voltage	Type of Sensor Used	CeTFTI = _e_Volt ageInve rseProp							<u>-</u>	Two Trips
			If TCM Substrate Temperature Sensor = Direct Proportional and Temp	>= -254 °C								
			If TCM Substrate Temperature Sensor = Indirect Proportional and Temp	<= -254 °C								
			Either condition above will satisfy the fail conditions						>=	60	Fail Timer (Sec)	
					Ignition Voltage Lo	>=	9	Volts				
					Ignition Voltage Hi	<= 3	31.99	Volts				
					Engine Speed Lo	>= 4	400	RPM				
					Engine Speed Hi	<= 7	7500	RPM				
					Engine Speed is within the allowable limits for	>=	5	Sec				
					P0669 Status is	F. ≠ Ke	Test Failed This ey On or Fault					
					For Hybrids, below conditions must also be met							
					Estimated Motor Power Loss	>=	0	kW				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required		Mil um.
					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 Conditi ons:	for DTC's:	TCM: P0716, P0717, P0722, P0723 ECM: None			
Transmission Control Module (TCM)	P06AC	TCM Power-up Temp Sensor Circuit Range/Performance	If TCM power-up temp to substrate temp Δ						wo rips
			If transmission oil temp to power up temp Δ	Refer to Table 18 in > supporti °C ng docume nts					
			Both conditions above required to increment fail counter					Fail Counts (100ms loop)	

Component/	Fault	Monitor Strategy	Malfunction	Threshold Value	Secondary Malfunction		Enab Conditi			Time Requir		Mil Illum.
System	Code	Description	Note: table reference temp = to the median temp of trans oil temp, substrate temp and power up temp.	value	Manufectori		Conditi	IOIIS	Out of	3750	Sample Counts (100ms loop)	illulii.
			Non-continuous (intermittent) fail conditions will delay resetting fail counter until						>=	700	Pass Counts (100ms loop)	
									Out of	875	Sample Counts (100ms loop)	
					Engine Torque Signal Valid	=	TRUE	Boolean				
					Accelerator Position Signal Valid	_	TRUE	Boolean				
					Ignition Voltage Lo	>=	9	Volts				
					Ignition Voltage Hi	<=	31.99	Volts				
					Engine Speed Lo	>=	400	RPM				
					Engine Speed Hi	<=	7500	RPM				
					Engine Speed is within the allowable limits for	>=	5	Sec				
					Brake torque active	=	FALSE					
					Below describes the brake torque entry criteria							
					Engine Torque	>=	90	N*m				
					Throttle	>=	30	Pct				
					Transmission Input Speed	<=	200	RPM				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enabl Conditi		Time Required	Mil Illum.
					Vehicle Speed	<=	8	Kph		
					Transmission Range	¥	Park			
					Transmission Range	<b>≠</b>	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 Hydrau lic 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		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Thres		Secondary Malfunction		Enabl Conditi			Time Requir		Mil Illum.
- J		<b>,</b>				P06AC Status is	≠	Test Failed This Key On or Fault Active			·		
					Disable Conditi ons:		P0669 P0716 P0717 P0962 P0967 P215C P2729 ECM: P0103 P0108 P0174 P0202 P0205 P0208 P0302 P0305		P06AE, P0713, P0723, P0966, P0971, P2721, P0102, P0107, P0172, P0201, P0204, P0207, P0301, P0304, P0307,				
Transmission Control Module (TCM)	P06AD	TCM power-up thermistor circuit voltage low	Power Up Temp	<= 254	°C					>=	60	Fail Time (Sec)	Two Trips
						Ignition Voltage Lo		9	Volts				
						Ignition Voltage Hi		31.99	Volts				
						Engine Speed Lo		400	RPM				
						Engine Speed Hi	<=	7500	RPM				
						Engine Speed is within the allowable limits for	>=	5	Sec				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Thres Val		Secondary Malfunction		Enabl Conditi			Time Requir		Mil Illum.
·		·				P06AD Status is	≠	Test Failed This Key On or Fault Active					
						For Hybrids, below conditions must also be met							
						Estimated Motor Power Loss	>=	0	kW				
						Estimated Motor Power Loss greater than limit for time	>=	0	Sec				
						Lost Communication with Hybrid Processor Control Module	=	FALSE					
						Estimated Motor Power Loss Fault	=	FALSE					
					Disable Conditi ons:	for DTC's:	P072	P0716, P 2, P0723 None	0717,				
Transmission Control Module (TCM)		TCM power-up thermistor circuit voltage high	Power Up Temp	>= -254	°C					>=	60	Fail Time (Sec)	Two Trips
						Ignition Voltage Lo	>=	9	Volts				
						Ignition Voltage Hi	<=	31.99	Volts				
						Engine Speed Lo		400	RPM				
						Engine Speed Hi	<=	7500	RPM				
						Engine Speed is within the allowable limits for	>=	5	Sec				

Component/	Fault	Monitor Strategy	Malfunction	Threshold Value	Secondary Malfunction	Enable Conditions	Time Requir		Mil Illum.
System	Code	Description	Criteria	Value	P06AE Status is	Test Failed This	Kequir	ea	muni.
				Disable Conditi ons:	MIL not Illuminated for DTC's:				
Transmission Fluid Temperature Sensor (TFT)		Trans Fluid Temp Sensor Circuit Range/Performance	If transmission oil temp to substrate temp Δ	> supporti ºC					Two Trips
			If transmission oil temp to power up temp Δ	> supporti ⁰C					
			Both conditions above required to increment fail counter				>= 3000	Fail Counts (100ms loop)	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enab Conditi			Time Requir		Mil Illum.
			Note: table reference temp = to the median temp of trans oil temp, substrate temp and power up temp.						Out of	3750	Sample Counts (100ms loop)	
			Non-continuous (intermittent) fail conditions will delay resetting fail counter until						>=	700	Pass Counts (100ms loop)	
									Out of	875	Sample Counts (100ms loop)	
					Engine Torque Signal Valid	=	TRUE	Boolean				
					Accelerator Position Signal Valid	=	TRUE	Boolean				
					Ignition Voltage Lo	>=	9	Volts				
					Ignition Voltage Hi	<=	31.99	Volts				
					Engine Speed Lo	>=	400	RPM				
					Engine Speed Hi	<=	7500	RPM				
					Engine Speed is within the allowable limits for	>=	5	Sec				
					Brake torque active	=	FALSE					
					Below describes the brake torque entry criteria							
					Engine Torque	>=	90	N*m				
					Throttle	>=	30	Pct				
					Transmission Input Speed	<=	200	RPM				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enabl Condition		Time Required	Mil Illum.
					Vehicle Speed	<=	8	Kph		
					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		Clutch Hydrau lic 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		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
		·			P0711 Status is	Test Failed This  ≠ Key On or Fault Active		
				Disable Conditi ons:	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, P0108, P0171, P0172, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Transmission Fluid Temperature Sensor (TFT)	P0/12	Transmission fluid temperature thermistor failed at a low voltage	Type of Sensor Used If Transmission Fluid Temperature	CeTFTI = _e_Volt ageInve rseProp				Two Trips
			Sensor = Direct Proportional and Temp	<= 254 °C				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enabl Condition			Time Requir		Mil Illum.
		·	If Transmission Fluid Temperature Sensor = Indirect Proportional and Temp	>= 254 °C								
			Either condition above will satisfy the fail conditions						>=	60	Fail Time (Sec)	
					Ignition Voltage Lo	>=	9	Volts				
					Ignition Voltage Hi	<=	31.99	Volts				
					Engine Speed Lo	>=	400	RPM				
					Engine Speed Hi	<=	7500	RPM				
					Engine Speed is within the allowable limits for	>=	5	Sec				
					P0712 Status is	≠	Test Failed This Key On or Fault Active					
					For Hybrids, below conditions must also be met							
					Estimated Motor Power Loss	>=	0	kW				
					Estimated Motor Power Loss greater than limit for time	>=	0	Sec				
					Lost Communication with Hybrid Processor Control Module	=	FALSE					
					Estimated Motor Power Loss Fault	=	FALSE					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thresh Valu		Secondary Malfunction		Enable Condition			Time Requir		Mil Illum.
System	Code	Description	Citteria		Valu	Disable Conditi ons:	MIL not Illuminated for DTC's:	P072	P0716, P0			rtoquii	<del></del>	
Transmission Fluid Temperature Sensor (TFT)		Transmission fluid temperature thermistor failed at a high voltage	Type of Sensor Used If Transmission	= -	CeTFTI _e_Volt ageInve rseProp									Two Trips
			Fluid Temperature Sensor = Direct Proportional and Temp	>=	-254	°C								
			If Transmission Fluid Temperature Sensor = Indirect Proportional and Temp	<=	-254	°C								
			Either condition above will satisfy the fail conditions								>=	60	Fail Time (Sec)	
							Ignition Voltage Lo	>=	9	Volts				
							Ignition Voltage Hi	<=	31.99	Volts				
							Engine Speed Lo	>=	400	RPM				
							Engine Speed Hi	<=	7500	RPM				
							Engine Speed is within the allowable limits for	>=	5	Sec				
							P0713 Status is	<b>≠</b>	Test Failed This Key On or Fault Active					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thres Val		Secondary Malfunction	Enable Conditions		Time Requir		Mil Illum.		
		·				Disable Conditi ons:	MIL not Illuminated for DTC's:	TCM: P0717 ECM:	7, P0722,	P0716, , P0723				
Transmission Input Speed Sensor (TISS)	P0716	Input Speed Sensor Performance	Transmission Input Speed Sensor Drops	>=	1350	RPM					>=	0.8	Fail Time (Sec)	One Trip
							Engine Torque is	>=	0	N*m				-
							Engine Torque is	<=	8192	N*m				
							Engine Speed	>=	400	RPM				
							Engine Speed	<=	7500	RPM				
							Engine Speed is within the allowable limits for	>=	5	Sec				
							Vehicle Speed is	>=	10	Kph				
							Throttle Position is	>=	0	Pct				
							Transmission Input Speed is	>=	0	RPM				
							The previous requirement has been satisfied for		0	Sec				
							The change (loop to loop) in transmission input speed is	<	8192	RPM/Loop				
							The previous requirement has been satisfied for		0	Sec				
							Throttle Position Signal Valid	=	TRUE	Boolean				
							Engine Torque Signal Valid	=	TRUE	Boolean				

Component/	Fault Code	Monitor Strategy Description	Malfunction Criteria	Thres Valu		Secondary Malfunction		Enab Conditi			Time Require		Mil Illum.
System	Code	Description	Criteria	Valid	40	Ignition Voltage	>=	9	Volts		rtequir		
						Ignition Voltage		31.99	Volts				
						P0716 Status is not		Test Failed This Key On or Fault Active					
					Disable Conditi ons:	for DTC's:	P097:	3, P0974 P0101, P 3, P0121,	P0102,				
Transmission Input Speed Sensor (TISS)		Input Speed Sensor Circuit Low Voltage	Fail Cas Transmission Input e 1 Speed is	< 67	RPM					>=	4.5	Fail Time (Sec)	One Trip
			Fail When P0722 DTC Cas Status equal to e 2 Test Failed and Transmission Input Speed is	< 1000	RPM	Controller uses a single power supply for the speed sensors	=	1	Boolean				
						Engine Torque is	>=	50	N*m				
						Engine Torque is	<=	8192	N*m				
						Vehicle Speed	>=	16	Kph				
						Engine Torque Signal Valid	=	TRUE	Boolean				
						Ignition Voltage	>=	9	Volts				
						Ignition Voltage		31.99	Volts				
						Engine Speed	>=	400	RPM				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshol Value	ld	Secondary Malfunction		Enab Conditi			Time Require		Mil Illum.
,						Engine Speed	<=	7500	RPM				
						Engine Speed is within the allowable limits for	>=	5	Sec				
						P0717 Status is not	=	Test Failed This Key On or Fault Active					
					Disable Conditi ons:	MIL not Illuminated for DTC's:		: P0101, P					
Transmission Output Speed Sensor (TOSS)	P0722	Output Speed Sensor Circuit Low Voltage	Transmission Output Speed Sensor Raw Speed	<= 35 RI	PM					>=	4.5	Fail Time (Sec)	One Trip
						P0722 Status is not	=	Test Failed This Key On or Fault Active					
						Transmission Input Speed Check	=	TRUE	Boolean				
						Engine Torque Check	=	TRUE	Boolean				
						Throttle Position	>=	8	Pct				
						Transmission Fluid Temperature	>=	-40	°C				
						Disable this DTC if the PTO is active	=	1	Boolean				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enabl Conditi		Time Required	Mil Illum.
		,			Engine Torque Signal Valid	=	TRUE	Boolean	-	
					Throttle Position Signal Valid	=	TRUE	Boolean		
					Ignition Voltage is	>=	9	Volts		
					Ignition Voltage is	<=	31.99	Volts		
					Engine Speed is	>=	400	RPM		
					Engine Speed is	<=	7500	RPM		
					Engine Speed is within the allowable limits for	>=	5	Sec		
					Enable_Flags Defined Below					1
					The Engine Torque Check is TRUE, if either of the two following conditions are TRUE					
					Engine Torque Condition 1					
					Range Shift Status	<b>≠</b>	Range shift comple ted	ENUM		
					OR					
					Transmission Range is	=	Park or Neutral			
					Engine Torque is Engine Torque is		8192 8192	N*m N*m		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enab Conditi		Time Required	Mil Illum.
System	Code	Description	Citteria	Value	Engine Torque Condition 2		Ooriditi	0113	Required	
					Engine Torque is Engine Torque is		30 8192	N*m N*m		
					The Transmission Input Speed (TIS) Check is TRUE, if either of the two following conditions are TRUE					
					TIS Check Condition 1					
					Transmission Input Speed is	>=	1000	RPM		
					Transmission Input Speed is	<=	8192	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	<=	8192	RPM		
					Controller uses a single power supply for the speed sensors		1	Boolean		
					Powertrain Brake Pedal is Valid	=	TRUE	Boolean		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Thresh Value		Secondary Malfunction		Enable Conditions		Tim Requi		Mil Illum.
-		·			Disable Conditi ons:		P0723 ECM: P	0716, P0717, 20101, P0102, P0121, P0122,				
Transmission Output Speed Sensor (TOSS)	P0723	Output Speed Sensor Circuit Intermittent	Transmission Output Speed Sensor Raw Speed	>= 105	RPM				>=	0	Enable Time (Sec)	One Trip
			Output Speed Delta	<= 8191.8 l	RPM				>=	0	Enable Time (Sec)	
			Output Speed Drop	> 1000	RPM				>=	3	Output Speed Drop Recover y Fail Time (Sec)	
			AND Transmission Range is	Driven = range (R,D)								
						Range_Disable	= 1	FALSE See Belov	v			
						Neutral_Range_Enable And		TRUE See Belov	v			
						Neutral_Speed_Enable are TRUE concurrently		TRUE See Belov	v			

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enab Condit		Time Required	Mil Illum.
					Transmission_Range_ Enable	=	TRUE	See Below		
					Transmission_Input_Sp eed_Enable		TRUE	See Below		
					No Change in Transfer Case Range (High <-> Low) for	>=	5	Seconds		
					P0723 Status is not	=	Test Failed This Key On or Fault Active			
					Disable this DTC if the PTO is active		1	Boolean		
					Ignition Voltage is	>=	9	Volts		
					Ignition Voltage is		31.99	Volts		
					Engine Speed is		400	RPM		
					Engine Speed is	<=	7500	RPM		
					Engine Speed is within the allowable limits for	>=	5	Sec		
					Enable_Flags Defined Below					
					Transmission_Input_Sp eed_Enable is TRUE when either TIS Condition 1 or TIS Condition 2 is TRUE:					
					TIS Condition 1 is TRUE when both of the following conditions are satsified for	>=	0	Enable Time (Sec)		
					Input Speed Delta	<=	4095	RPM		

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary		able	Time	Mil
System	Code	Description	Criteria	Value	Malfunction		litions	Required	Illum.
					Raw Input Speed  TIS Condition 2 is  TRUE when ALL of the next two conditions are satisfied		RPM		
					Input Speed		RPM		
					A Single Power Supply is used for all speed sensors		E Boolean		
					Neutral_Range_Enable is TRUE when any of the next 3 conditions are TRUE				
					Transmission Range is	= Neutr	al ENUM		
					Transmission Range is	Reve e/Neu = al Trans onal	tr ENUM it		
					Transmission Range is	Neutr - /Driv Trans onal	ENUM		
					And when a drop occurs				
					Loop to Loop Drop of Transmission Output Speed is	> 650	RPM		
					Range_Disable is TRUE when any of the next three conditions are TRUE				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enabl Conditi		Time Required	Mil Illum.
					Transmission Range is	=	Park	ENUM		
					Transmission Range is	=	Park/R everse Transit onal	ENUM		
					Input Clutch is not	=	ON (Fully Applie d)	ENUM		
					Neutral_Speed_Enable is TRUE when All of the next three conditions are satsified for	>	1.5	Seconds		-
					Transmission Output Speed	>	130	RPM		
					The loop to loop change of the Transmission Output Speed is	<	125	RPM		
					The loop to loop change of the Transmission Output Speed is	>	-10	RPM		
					Transmission_Range_ Enable is TRUE when one of the next six conditions is TRUE					-
					Transmission Range is	=	Neutral	ENUM		
					Transmission Range is	=	Revers e/Neutr al Transiti onal	ENUM		

Component/	Fault Code		Malfunction Criteria	Thres Valu		Secondary Malfunction	Enable Conditions		Time equired	Mil Illum.
System	Code	Description	Criteria	Valid		Transmission Range is	Neutral /Drive		-quireu	
						Time since a driven range (R,D) has been selected	>= Table Sec			
						Transmission Output Speed Sensor Raw Speed	>= 500 RPM			
						Output Speed when a fault was detected	>= 500 RPM			
					Disable Conditi ons:	for DTC's:	TCM: P0973, P0974, P0976, P0977 ECM: P0101, P0102, P0103, P0121, P0122, P0123			
Torque Converter Clutch (TCC)	P0741	TCC System Stuck OFF	TCC Pressure Either Condition	>= 500	Кра			>= 2	Enable Time (Sec)	Two Trips
			(A) or (B) Must be Met							

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary Malfunction		Enabl			Tim		Mil
System	Code	Description	Criteria	Value	Manunction	_	Conditi	ons	-	Requi	rea	Illum.
			(A) TCC Slip Error @ TCC On Mode	Refer to Table 1 in >= Support RPM ing Docum ents					>=	5	Fail Time (Sec)	
			(B) TCC Slip @ Lock On Mode	>= 130 RPM					>=	5	Fail Time (Sec)	
			If Above Conditions Have been Met, and Fail Timer Expired, Increment Fail Counter						>=	2	TCC Stuck Off Fail Counter	
					TCC Mode	=	On or Lock					
					Ignition Voltage Lo	>=	9	Volts				
					Ignition Voltage Hi	<=	31.99	Volts				
					Engine Speed	>=	400	RPM				
					Engine Speed	<=	7500	RPM				
					Engine Speed is within the allowable limits for	>=	5	Sec				
					Engine Torque Lo	>=	50	N*m				
					Engine Torque Hi	<=	8192	N*m				
					Throttle Position Lo	>=	8	Pct				
					Throttle Position Hi	<=	100	Pct				
					2nd Gear Ratio Lo	>=	2.753	Ratio				
					2nd Gear Ratio High	<=	3.167	Ratio				
					3rd Gear Ratio Lo	>=	1.776	Ratio				
					3rd Gear Ratio High	<=	2.044	Ratio				
					4th Gear Ratio Lo	>=	1.349	Ratio				
	1				4th Gear Ratio High	<=	1.552	Ratio				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enab Conditi		Time Required	Mil Illum.
					5th Gear Ratio Lo	>=	0.93	Ratio		
					5th Gear Ratio Hi	<=	1.07	Ratio		
					6th Gear Ratio Lo	>=	0.698	Ratio		
					6th Gear Ratio High	<=	0.802	Ratio		
					Transmission Fluid Temperature Lo		-6.656	°C		
					Transmission Fluid Temperature Hi		130	°C		
					PTO Not Active	=	TRUE	Boolean		
					Engine Torque Signal Valid		TRUE	Boolean		
					Throttle Position Signal Valid		TRUE	Boolean		
					Dynamic Mode	=	FALSE	Boolean		
					P0741 Status is	≠	Test Failed This Key On or Fault Active			

Component/	Fault	Monitor Strategy	Malfunction	Thres		Secondary Malfunction		Enab Condit				me uired	Mil Illum.
System	Code	Description	Criteria	Val	Disable Conditi ons:	MIL not Illuminated for DTC's:	P0722 P2763 ECM: P0103 P0108 P0174 P0202 P0205 P0208 P0302 P0305	P0716, F	P0717, P0742, P0102, P0107, P0172, P0201, P0204, P0207, P0301, P0304, P0307,		Key	uneu	
Torque Converter Clutch (TCC)	P0742	TCC System Stuck ON	TCC Slip Speed	-50 13	RPM RPM								One Trip
			lf Alexand							>=	1	Fail Time (Sec)	
			If Above Conditions Have been Met, and Fail Timer Expired, Increment Fail Counter							>=	8	Fail Counte	r
						TCC Mode	=	Off					
						Enable test if Cmnd Gear = 1stFW and value true	=	1	Boolean				
						Enable test if Cmnd Gear = 2nd and value true		0	Boolean				
						Engine Speed Hi	<=	6000	RPM				
						Engine Speed Lo		500	RPM				
						Vehicle Speed HI	<=	511	KPH				1

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary		Enabl		Time	Mil
System	Code	Description	Criteria	Value	Malfunction		Condition		Required	Illum.
					Vehicle Speed Lo		1	KPH		
					Engine Torque Hi		8192	Nm		
					Engine Torque Lo	>=	60	Nm		
					Current Range	<b>≠</b>	Neutral	Range		
					Current Range	<b>≠</b>	Revers e	Range		
					Transmission Sump Temperature	<=	130	°C		
					Transmission Sump Temperature	>=	15	°C		
					Throttle Position Hyst High	>=	10	Pct		
					AND					
					Max Vehicle Speed to Meet Throttle Enable	<=	8	KPH		
					Once Hyst High has been met, the enable will remain while Throttle Position		2	Pct		
					Disable for Throttle Position	>=	75	Pct		
					Disable if PTO active and value true		1	Boolean		
					Disable if in D1 and value true	=	1	Boolean		
					Disable if in D2 and value true	=	1	Boolean		
					Disable if in D3 and value true		1	Boolean		
					Disable if in D4 and value true	=	1	Boolean		
					Disable if in D5 and value true	=	1	Boolean		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enab Conditi		Time Required	Mil Illum.
					Disable if in MUMD and value true	=	1	Boolean		
					Disable if in TUTD and value true		1	Boolean		
					4 Wheel Drive Low Active	=	FALSE	Boolean		
					Disable if Air Purge active and value false		0	Boolean		
					RVT Diagnostic Active	=	FALSE	Boolean		
					Ignition Voltage	>=	9	V		
					Ignition Voltage	<=	31.99	V		
					Vehicle Speed	<=	511	KPH		
					Engine Speed	>=	400	RPM		
					Engine Speed	<=	7500	RPM		
					Engine Speed is within the allowable limits for	>=	5	Sec		
					Engine Torque Signal Valid	=	TRUE	Boolean		
					Throttle Position Signal Valid	=	TRUE	Boolean		
					P0742 Status is	<b>≠</b>	Test Failed This Key On or Fault Active			

Component/	Fault	Monitor Strategy	Malfunction	Thres		Secondary		Enable			Tim		Mil
System	Code	Description	Criteria	Val		Malfunction		Conditio		₩	Requi	red	Illum.
					Disable Conditi	MIL not Illuminated for DTC's:	P0722,	0716, PC P0723, F	0717, 20741,				
					ons:		P2763,		,				
							ECM: F	0101 P	0102				
							P0103,	P0106, F	P0107,				
							P0108, P0174,	P0171, F	P0172,				
							P0202,	P0203, F	P0204,				
							P0205, P0208,						
							P0302,						
							P0305,	P0306, F	P0307,				
							P0308,	P0401, F	2042E				
Mode 2 Multiplex		Shift Solenoid Valve	Commaned Gear										Two
Valve	P0751	A Stuck Off	Slip	>= 400	RPM								Trips
			Commanded Gear	= 1st Lock	rpm								
			Gear Ratio	<= 1.5183						>=	0.3	Fail Tmr	
			Gear Ratio	>= 1.3737						=	5	Fail Counts	
			If the above										
			parameters are										
			true										
										<b>≠</b>	0	Neutral Timer (Sec)	
												Fail	
										>=	0.3	Timer (Sec)	
										>=	8	Counts	
						Ignition Voltage Lo		9	Volts				
						Ignition Voltage Hi	<=	31.99	Volts				
						Engine Speed Lo	>=	400	RPM				
	1					Engine Speed Hi	<=	7500	RPM				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enabl Conditi		Time Required	Mil Illum.
					Engine Speed is within the allowable limits for	>=	5	Sec		
					Transmission Fluid Temperature	>=	-6.656	°C		
					Range Shift State	=	Range Shift Compl eted	ENUM		
					TPS OR		0.5	%		
					Output Speed		100	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			

Component/	Fault	Monitor Strategy	Malfunction		reshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria		Value	Malfunction	Conditions	Required	Illum.
					Disable Conditi	MIL not Illuminated	TCM: P0716, P0717, P0722, P0723, P182E		
					ons:	101 010 3.	1 0722,1 0720,1 1022		
							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	1_	Shift Solenoid Valve						1	One
Valve	P0752	A Stuck On	Gear Box Slip	>= 40	00 RPM				Trip
			Commanded Gear	= 3	rd Gear				
			Commanded Gear						
			has Achieved 1st Locked OR 1st						
			Free-Wheel OR	= TR	UE Boolean				
			2nd with Mode 2						
			Sol. Commanded On						
			If the above parameters are						
			true						
								Please	
									utral mer
									Sec)
								Documents	
			Command 4th						
			Gear once Output		00 RPM				
			Shaft Speed						
			If Gear Ratio	>= 4.3	549				

Component/	Fault	Monitor Strategy	Malfunction	Threshold Value	Secondary Malfunction		Enab Conditi			Tim Requi		Mil Illum.
System	Code	Description	Criteria		Wallandion		Conditi	10115		Requi	ireu	illulli.
			And Gear Ratio	<= 4.8132								
									>=	1.5	Fail Timer (Sec)	
									>=	5	Counts	
					Ignition Voltage Lo	>=	9	Volts				
					Ignition Voltage Hi	<=	31.99	Volts				
					Engine Speed Lo	>=	400	RPM				
					Engine Speed Hi	<=	7500	RPM				
					Engine Speed is within the allowable limits for	>=	5	Sec				
					High-Side Driver is Enabled	=	TRUE	Boolean				
					Throttle Position Signal Valid from ECM	=	TRUE	Boolean				
					Output Speed	>=	100	RPM				
					OR							
					TPS	>=	0.5	%				
					Range Shift State	=	Range Shift Compl eted	ENUM				
					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/	Fault	Monitor Strategy	Malfunction	Thres	hold	Secondary	Enable	Time		Mil
System	Code	Description	Criteria	Valu	ue	Malfunction	Conditions	Required	k	Illum.
Oystem	Gode	Bescription	Ontona		Disable Conditi ons:	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 B Stuck Off [C35R]	Fail Cas Case: Steady e 1 State 3rd Gear Commanded Gear Gearbox Slip	= 3rd	Gear RPM			Please Refer to >= Table 16 in Supporting Documents	Neutral Timer (Sec)	One Trip
			Command 4th Gear once Output Shaft Speed If Gear Ratio And Gear Ratio	>= 1.3737	RPM			>= 3	Fail Timer (Sec)	

Component/	Fault	Monitor Strategy	Malfunction	Threshold	d Secondary Malfunction	Enable	Time		Mil Illum.
System	Code	Description	Criteria	Value	Wallunction	Conditions	Require	0	mum.
			It the above condiations are true, Increment 3rd gear fail counter				>= 2	3rd Gear Fail Counts	
			and C35R Fail counter				>= 14	or 3-5R Clutch Fail Counts	
			Fail Cas Case: Steady E 2 State 5th Gear						
			Commanded Gear	= 5th Ge	ear		Please		
			Gearbox Slip	>= 400 Rp	m		Refer to >= Table 5 in Supporting Documents	Neutral Timer (Sec)	
			Intrusive Test: Command 6th Gear						
			If attained Gear=6th gear Time	Please refer to Table 3 in Tin supporti ng docume nts	ift ne ec)				
			It the above condiations are true, Increment 5th gear fail counter				>= 3	5th Gear Fail Counts	
	1							or	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enab Conditi			Tim Requi		Mil Illum.
-			and C35R Fail counter						>=	14	3-5R Clutch Fail Counts	
					PRNDL State defaulted	=	FALSE	Boolean				
					inhibit RVT	=	FALSE	Boolean				
					IMS fault pending indication	=	FALSE	Boolean				
					TPS validity flag	=	TRUE	Boolean				
					Hydraulic System Pressurized	=	TRUE	Boolean				
					Minimum output speed for RVT	>=	100	RPM				
					A OR B							
					(A) Output speed enable	>=	100	RPM				
					(B) Accelerator Pedal enable	>=	0.5	Pct				
					Common Enable Criteria							
					Ignition Voltage Lo	>=	9	Volts				
					Ignition Voltage Hi	<=	31.99	Volts				
					Engine Speed Lo	>=	400	RPM				
					Engine Speed Hi	<=	7500	RPM				
					Engine Speed is within the allowable limits for	>=	5	Sec				
					Throttle Position Signal valid	=	TRUE	Boolean				
					HSD Enabled	=	TRUE	Boolean				
					Transmission Fluid Temperature	>=	-6.656	°C				

Component/	Fault	Monitor Strategy	Malfunction	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Criteria	value			Kequirea	mum.
					Input Speed Sensor fault	= FALSE Boolean		
					Output Speed Sensor fault	= FALSE Boolean		
					Default Gear Option is not present	= TRUE		
				Disable Conditi ons:		TCM: P0716, P0717, P0722, P0723, P182E ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207,		
		Pressure Control	<u>Fail</u>			P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		One
Variable Bleed Solenoid (VBS)	P0777	(PC) Solinoid B Stuck On [C35R] (Steady State)	<u>Cas</u> Case: Steady <u>e 1</u> State 1st					Trip
			Attained Gear slip	>= 400 RPM				
			If the Above is True for Time	Table Based Time Please Refer to Enable >= Table 4 Time in (Sec) supporti ng docume nts				

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary Malfunction	Enable	Time	Mil
System	Code	Description	Criteria	Value	Waltunction	Conditions	Required	Illum.
			Intrusive test: (CBR1 clutch exhausted)					
			Gear Ratio	<= 2.0073				
			Gear Ratio	>= 1.7446				
			If the above parameters are true					
							>= 1.1 Fail Timer (Sec)	
							Fail >= 2 Count in 1st Gear	
							or Total >= 3 Fail	
							Counts	
			Fail Cas Case: Steady e 2 State 2nd gear					
			Max Delta Output Speed Hysteresis	Table Based value Please Refer to 3D Table 1 in supporti ng docume nts				

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
			Min Delta Output Speed Hysteresis	Table Based value Please Refer to 3D rpm/sec in supporti ng docume nts				
			If the Above is True for Time	Table Based Time Please Refer to >= Table Sec 17 in supporti ng docume nts				
			Intrusive test: (CB26 clutch exhausted)					
			Gear Ratio					
			Gear Ratio If the above parameters are true	>= 1./446				
							Fail >= 1.1 Time (Sec)	r

Component/	Fault	Monitor Strategy	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Fail Cas Case: Steady e 3 State 4th gear  Max Delta Output Speed Hysteresis	Table Based value Please Refer to 3D rpm/sec		Gonditions	Required  Fail Count in 2nd Gear or Total >= 3 Fail Counts	
			Min Delta Output Speed Hysteresis	in supporti ng docume nts  Table Based value Please Refer to 3D Table 2 in supporti ng docume nts				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			If the Above is True for Time	Table Based Time Please				
			Intrusive test: (C1234 clutch exhausted)					
			Gear Ratio	<= 1.0699				
			Gear Ratio	>= 0.9301				
			If the above parameters are true					
							Fail >= 1.1 Timer (Sec)	
							Fail >= 3 Count in 4th Gear	
							or Total >= 3 Fail Counts	
			Fail Cas Case: Steady e 4 State 6th gear					

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
			Max Delta Output Speed Hysteresis					
			Min Delta Output Speed Hysteresis	Table Based value Please Refer to 3D				
			If the Above is True for Time	Table Based Time Please Refer to >= Table Sec 17 in supporti ng docume nts				
			Intrusive test: (CB26 clutch exhausted)					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Threshold Value	Secondary Malfunction		Enabl Conditi			Tim Requi		Mil Illum.
-			Gear Ratio	<=	1.0699					>=	1.1	Fail Timer (Sec)	
			Gear Ratio	>=	0.9301					>=	3	counts	
			If the above parameters are true										
										>=	1.1	Fail Timer (Sec)	
										>=	3	Fail Count in 6th Gear	
										>=	3	or Total Fail Counts	
						PRNDL State defaulted	=	FALSE	Boolean				
						inhibit RVT	=	FALSE	Boolean				
						IMS fault pending indication	=	FALSE	Boolean				
						output speed	>=	0	RPM				
						TPS validity flag		TRUE	Boolean				
						HSD Enabled	=	TRUE	Boolean				
						Hydraulic_System_Pre ssurized	=	TRUE	Boolean				
						A OR B							
						(A) Output speed enable		100	Nm				
						(B) Accelerator Pedal enable	>=	0.5	Nm				
						Ignition Voltage Lo	>=	9	Volts				
	1					Ignition Voltage Hi	<=	31.99	Volts				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enabl Conditi		Time Required	Mil Illum.
					Engine Speed Lo	>=	400	RPM	-	
					Engine Speed Hi	<=	7500	RPM		
					Engine Speed is within the allowable limits for		5	Sec		
					if Attained Gear=1st FW Accelerator Pedal enable	>=	10	Pct		
					if Attained Gear=1st FW Engine Torque Enable	>=	45	Nm		
					if Attained Gear=1st FW Engine Torque Enable	<=	8192	Nm		
					Transmission Fluid Temperature		-6.656	°C		
					Input Speed Sensor fault		FALSE	Boolean		
					Output Speed Sensor fault	=	FALSE	Boolean		
				Disable Conditi ons:	MIL not Illuminated for DTC's:	TCM: P0722	P0716, P0 2, P0723,	0717, P182E		
						P0103 P0174 P0203 P0203 P0203 P0303 P0303	P0101, P 3, P0106, 3, P0171, 4, P0175, 2, P0203, 5, P0206, 3, P0300, 2, P0303, 5, P0306, 3, P0401,	P0107, P0172, P0201, P0204, P0207, P0301, P0304, P0307,		

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
Variable Bleed Solenoid (VBS)	P0777	Pressure Control (PC) Solenoid B StuckOn [C35R] (Dymanic)	Primary Offgoing Clutch is exhausted (See Table 12 in Supporting Documents for Exhaust Delay Timers)	= TRUE Boolean				One Trip
			Primary Oncoming Clutch Pressure Command Status	Maximu = m pressuri zed				
			Primary Offgoing Clutch Pressure Command Status	Clutch exhaust comma nd				
			Range Shift Status	Initial ≠ Clutch Control				
			Attained Gear Slip	<= 40 RPM				
			If the above conditions are true run appropriate Fail 1 Timers Below:					
			fail timer 1 (3-1 shifting with Closed Throttle)	Fail >= 0.5 Time (Sec)				
			fail timer 1 (3-2 shifting with Throttle)	Fail >= 0.4004 Time (Sec)				
			fail timer 1 (3-2 shifting with Closed Throttle)	Fail >= 0.5 Time (Sec)				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			fail timer 1 (3-4 shifting with Throttle)	Fail >= 0.4004 Time (Sec)				
			fail timer 1 (3-4shifting with Closed Throttle)	Fail >= 0.5 Time (Sec)				
			fail timer 1 (3-5 shifting with Throttle)	>= 0.4004 Time				
			fail timer 1 (3-5 shifting with Closed Throttle)	Fail >= 0.5 Time (Sec)				
			fail timer 1 (5-3 shifting with Throttle)	>= 0.4004 Time				
			fail timer 1 (5-3 shifting with Closed Throttle)					
			fail timer 1 (5-4 shifting with Throttle)	>= 0.4004 Time				
			fail timer 1 (5-4 shifting with Closed Throttle)					
			fail timer 1 (5-6 shifting with Throttle)	>= 0.4004 Time				
			fail timer 1 (5-6 shifting with Closed Throttle)	Fail >= 0.5 Time (Sec)				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Requir		Mil Illum.
System	Code	Description	If Attained Gear Slip is Less than Above Cal Increment Fail Timers	Value		Conditions	Total Fail Time = (Fail 1 + Fail 2) See Enable Timers for >= Fail Timer 1, and Reference Supporting Table 15 for Fail Timer 2	sec	
			If fail timer is greater than threshold increment corresponding gear fail counter and total fail counter						
			3rd gear fail counter				>= 3	3rd gear fail counts OR	
			5th gear fail counter				>= 3	5th gear fail counts	
			Total fail counter				>= 3	OR total fail counts	
					TUT Enable temperature	>= -6.656 °C			
					Input Speed Sensor fault	= FALSE Boolean			
					Output Speed Sensor fault	= FALSE Boolean			

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Thres Valu		Secondary Malfunction		Enab Conditi		Time Require	d	Mil Illum.
,		·				Command / Attained Gear	<b>≠</b>	1st	Boolean			
						High Side Driver ON	=	TRUE	Boolean			
						output speed limit for TUT	>=	200	RPM			
						input speed limit for TUT	>=	200	RPM			
						PRNDL state defaulted	=	FALSE	Boolean			
						IMS Fault Pending	=	FALSE	Boolean			
						Service Fast Learn Mode	=	FALSE	Boolean			
						HSD Enabled		TRUE	Boolean			
						Default Gear Option is not present		TRUE				
					Disable Conditi ons:							
							P010 P010 P017 P020 P020 P020 P030 P030	P0101, F 3, P0106, 8, P0171, 4, P0175, 2, P0203, 5, P0206, 8, P0300, 2, P0303, 5, P0306, 8, P0401,	P0107, P0172, P0201, P0204, P0207, P0301, P0304, P0307,			
Transmission Output Speed Sensor (TOSS)	P077C	Output Speed Sensor Circuit Low	TOSS Analog Signal Voltage	<= 0.25	Volts					>= 5.00E-02	sec	One Trip

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			P077C Status is not					
			If the above conditons have been met, increment the P077C Fail Counter					
			DTC P077C Sets when the Fail Counter					
					P077C Enable Calibration			
					Ignition Voltage Lo	>= 9 Volts		
					Ignition Voltage Hi	<= 31.99 Volts		
				Disable Conditi ons:				
Transmission Output Speed Sensor (TOSS)	P077D	Output Speed Sensor Circuit High	TOSS Analog Signal Voltage	>= 4.75 Volts			>= 5.00E-02 sec	One Trip
			P077D Status is not					

Component/	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	If the above conditons have been met, increment the P077D Fail Counter		mananenen	Conditions	Required	a.iii
			DTC P077D Sets when the Fail Counter		3			
					P077D Enable Calibration			
					Ignition Voltage Lo	>= 9 Volts		
					Ignition Voltage Hi	<= 31.99 Volts		
				Disal Cond or	iti for DTC's:			
Variable Bleed Solenoid (VBS)	P0796	Pressure Control (PC) Solenoid C Stuck Off [C456] (Steady State)	Fail Cas Case: Steady e 1 State 4th Gear					One Trip
			Gear slip	>= 400 RPM			Please See Table 5 For Neutral Timer Time Cal  Neutral (Sec)	
			Intrusive test: commanded 5th gear					
			If attained Gear ≠5th for time	Please refer to Table 3 in Time Support ing Docum ents				

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
			if the above conditions have been met					
			Increment 4th Gear Fail Counter				4th Gear >= 2 Fail Count	
			and C456 Fail Counters				OR C456 >= 14 Fail Counts	
			Fail Cas Case: Steady e 2 State 5th Gear					
			Gear slip	>= 400 RPM			>= Please See Table 5 For Neutral Time Cal  Neutral (Sec)	
			Intrusive test: commanded 6th gear					
			If attained Gear ≠ 6th for time					
			if the above conditions have been met					
			Increment 5th Gear Fail Counter				5th Gear >= 2 Fail Count	
							OR	

Component/	Fault	Monitor Strategy	Malfunction	Threshold Value	Secondary Malfunction	Enable Conditions		Time quired	Mil Illum.
System	Code	Description	Criteria	value	Manufiction	Conditions	Re		mum.
			and C456 Fail Counters				>= 14	C456 Fail Counts	
			Fail Cas Case: Steady e 3 State 6th Gear						
			Gear slip	>= 400 RPM			Please Table : >= Neu Time	5 For Timer	
			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				>= 2	6th Gear Fail Count	-
			and C456 Fail Counter				>= 14	OR C456 Fail Counts	
					PRNDL State defaulted	= FALSE Boo	olean		
					inhibit RVT	= FALSE Boo	olean		

Code	Description	Criteria	Value	Malfunction  IMS fault pending		Condition	0115	Required	Illum.
				indication	=	FALSE	Boolean		
				TPS validity flag	=	TRUE	Boolean		
				Hydraulic System Pressurized	=	TRUE	Boolean		
				Minimum output speed for RVT	>=	100	RPM		
				A OR B					
				(A) Output speed enable	>=	100	RPM		
				(B) Accelerator Pedal enable	>=	0.5	Pct		
				Common Enable Criteria					
				Ignition Voltage Lo	>=	9	Volts		
				Ignition Voltage Hi	<=	31.99	Volts		
				Engine Speed Lo	>=	400	RPM		
				Engine Speed Hi	<=	7500	RPM		
				Engine Speed is within the allowable limits for	>=	5	Sec		
				Throttle Position Signal valid	=	TRUE	Boolean		
				HSD Enabled	=	TRUE	Boolean		
				Transmission Fluid Temperature	>=	-6.656	°C		
				Input Speed Sensor fault	=	FALSE	Boolean		
				OutputSpeed Sensor fault	=	FALSE	Boolean		
				Default Gear Option is not present	=	TRUE			
					(A) Output speed enable  (B) Accelerator Pedal enable  Common Enable  Common Enable  Criteria  Ignition Voltage Lo  Ignition Voltage Hi  Engine Speed Lo  Engine Speed is within the allowable limits for  Throttle Position Signal valid  HSD Enabled  Transmission Fluid  Temperature  Input Speed Sensor fault  OutputSpeed Sensor fault  Default Gear Option is	(A) Output speed enable  (B) Accelerator Pedal enable Common Enable Criteria  Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Is within the allowable limits for Throttle Position Signal valid  HSD Enabled  Transmission Fluid Temperature  Input Speed Sensor fault  OutputSpeed Sensor fault  Default Gear Option is	(A) Output speed enable  (B) Accelerator Pedal enable  Common Enable Criteria  Ignition Voltage Lo >= 9 Ignition Voltage Hi <= 31.99 Engine Speed Lo >= 400 Engine Speed Hi <= 7500 Engine Speed is within the allowable limits for Throttle Position Signal valid  HSD Enabled = TRUE  Transmission Fluid Temperature  Input Speed Sensor fault OutputSpeed Sensor fault  OutputSpeed Sensor fault Default Gear Option is	(A) Output speed enable  (B) Accelerator Pedal enable  Common Enable Criteria  Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Is within the allowable limits for Throttle Position Signal valid  HSD Enabled Transmission Fluid Temperature  Input Speed Sensor fault  OutputSpeed Sensor fault  Default Gear Option is  TRUE  Solean  RPM  >= 0.5 Pct  Pot Pot Pot Pot Pot Pot Pot Pot Pot P	(A) Output speed enable  (B) Accelerator Pedal enable  Common Enable  Criteria  Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed Hi Engine Speed Hi Engine Speed is within the allowable limits for Throttle Position Signal valid  HSD Enabled  Transmission Fluid Temperature  Input Speed Sensor fault Output Speed Sensor fault Default Gear Option is  - TRUE  - 100 RPM  - 20.5 Pct  RPM - 31.99 Volts - 7500 RPM - 7500 RPM - 7500 -

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
				Disable Conditi	MIL not illuminated for DTC's:	TCM: P0716, P0717, P0722, P0723, P182E		
				ons:	10. 2. 0 0.			
						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		
		Pressure Control	<u>Fail</u>					One
Variable Bleed	P0797	(PC) Solenoid C	Cas Case: Steady e 1 State 1st					Trip
Solenoid (VBS)		Stuck On [C456] (Steady State)	E1 State 1st					
		(Gleady Glale)						
			Attained Gear slip	>= 400 RPM				
				Table				
				Based				
				Time				
				Please Refer to Enable				
			If the Above is	- Toble 4 Time				
			True for Time	in (Sec)				
				supporti				
				ng docume				
				nts				
			ljakovani sa k ko					
			Intrusive test: (CBR1 clutch					
			exhausted)					
			Gear Ratio	<- 1 5291				
			Geal Mallo	- 1.0201				
			Gear Ratio	>= 1.329				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			If the above parameters are true					
							Fail >= 1.1 Timer (Sec)	
							Fail >= 2 Count in 1st Gear	
							or Total >= 3 Fail Counts	
			Fail Cas Case Steady State e 2 2nd					
			Max Delta Output Speed Hysteresis	Table Based value Please Refer to 3D Table 1 in supporti ng docume nts				

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
			Min Delta Output Speed Hysteresis	Table Based value Please Refer to 3D rpm/sec Table 2 in supporti ng docume nts				
			If the Above is True for Time	Table Based Time Please Refer to >= Table Sec 17 in supporti ng docume nts				
			Intrusive test: (CB26 clutch exhausted)					
			Gear Ratio	<= 1.5291				
			Gear Ratio	>= 1.329				
			If the above parameters are true					
							Fail >= 1.1 Time (Sec	er :)
							Fail >= 3 Count Sea Count Count Count Count	in

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Fail Cas Case Steady State e 3 3rd  Max Delta Output Speed Hysteresis	Table Based value Please Refer to 3D rpm/sec in		Osmanionio	or >= 3 Total fa counts	ı
			Min Delta Output Speed Hysteresis	supporti ng docume nts  Table Based value Please Refer to 3D Table 2 in supporti ng docume nts				

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary		Enab			Tim		Mil
System	Code	Description	Criteria	Value	Malfunction		Conditi	ons		Requi	red	Illum.
			If the Above is True for Time									
			Intrusive test: (C35R clutch exhausted)									
			Gear Ratio	<= 1.5291								
			Gear Ratio	>= 1.329								
			If the above parameters are true									
									>=	1.1	Fail Timer (Sec)	
									>=	3	Fail Count in 3rd Gear	
										OR	Total	
									>=	3	Fail Counts	
					PRNDL State defaulted	=	FALSE	Boolean				
					inhibit RVT		FALSE	Boolean				
					IMS fault pending indication	=	FALSE	Boolean				
					output speed		0	RPM				
	I				TPS validity flag	=	TRUE	Boolean				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enab Conditi		Time Required	Mil Illum
System	Code	Description	Ontena	74.40	HSD Enabled	=	TRUE	Boolean	roquiou	1
					Hydraulic_System_Pre ssurized	=	TRUE	Boolean		
					A OR B					
					(A) Output speed enable	>=	100	Nm		
					(B) Accelerator Pedal enable	>=	0.5	Nm		
					Ignition Voltage Lo	>=	9	Volts		
					Ignition Voltage Hi	<=	31.99	Volts		
					Engine Speed Lo	>=	400	RPM		
					Engine Speed Hi	<=	7500	RPM		
					Engine Speed is within the allowable limits for	>=	5	Sec		
					if Attained Gear=1st FW Accelerator Pedal enable	>=	10	Pct		
					if Attained Gear=1st FW Engine Torque Enable	>=	45	Nm		
					if Attained Gear=1st FW Engine Torque Enable	<=	8192	Nm		
					Transmission Fluid Temperature	>=	-6.656	°C		
					Input Speed Sensor fault	=	FALSE	Boolean		
					Output Speed Sensor fault	=	FALSE	Boolean		
					Default Gear Option is not present	=	TRUE			
					not present					

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
				Disable Conditi ons:	for DTC's:	TCM: P0716, P0717, P0722, P0723, P182E  ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Variable Bleed Solenoid (VBS)	P0797	Pressure Control (PC) Solenoid C Stuck On [C456] (Dynamic)	Primary Offgoing Clutch is exhausted (See Table 11 in Supporting Documents for Exhaust Delay Timers) Primary Oncoming	= TRUE Boolean				One Trip
			Clutch Pressure Command Status	= pressuri zed				
			Primary Offgoing Clutch Pressure Command Status	= comma comma nd				
			Range Shift Status	Initial ≠ Clutch Control				
			Attained Gear Slip	<= 40 RPM				

Component/	Fault	Monitor Strategy	Malfunction	Thres		Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Valu	ıe	Malfunction	Conditions	Required	Illum.
			If the above conditions are true increment appropriate Fail 1 Timers Below:						
			fail timer 1 (4-1 shifting with throttle)	>= 0.4004	Fail Time (Sec)				
			fail timer 1 (4-1 shifting without throttle)	>= 0.5	Fail Time (Sec)				
			fail timer 1 (4-2 shifting with throttle)	>= 0.4004	Fail Time (Sec)				
			fail timer 1 (4-2 shifting without throttle)	>= 0.5	Fail Time (Sec)				
			fail timer 1 (4-3 shifting with throttle)	>= 0.7002	Fail Time (Sec)				
			fail timer 1 (4-3 shifting without throttle)	>= 0.5	Fail Time (Sec)				
			fail timer 1 (5-3 shifting with throttle)	>= 0.4004	Fail Time (Sec)				
			fail timer 1 (5-3 shifting without throttle)	>= 0.5	Fail Time (Sec)				
			fail timer 1 (6-2 shifting with throttle)	>= 0.4004	Fail Time (Sec)				
			fail timer 1 (6-2 shifting without throttle)	>= 0.5	Fail Time (Sec)				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
		·	If Attained Gear Slip is Less than Above Cal Increment Fail Timers				Total Fail Time = (Fail 1 + Fail 2) See Enable Timers for >= Fail Timer sec 1, and Reference Supporting Table 15 for Fail Timer 2	
			If fail timer is greater than threshold increment corresponding gear fail counter and total fail counter					
			4th gear fail counter				Fail Counter >= 3 From 4th Gear OR	
			5th gear fail counter				Fail >= 3 Counter From 5th Gear	
			6th gear fail counter				OR Fail Counter From 6th Gear OR	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enab Conditi			Tim Requ		Mil Illum.
			Total fail counter						>=	3	Total Fail Counter	
					TUT Enable temperature		-6.656	°C				
					Input Speed Sensor fault	=	FALSE	Boolean				
					Output Speed Sensor fault	=	FALSE	Boolean				
					Command / Attained Gear		1st	Boolean				
					High Side Driver ON	=	TRUE	Boolean				
					output speed limit for TUT	>=	200	RPM				
					input speed limit for TUT	>=	200	RPM				
					PRNDL state defaulted	=	FALSE	Boolean				
					IMS Fault Pending	=	FALSE	Boolean				
					Service Fast Learn Mode	=	FALSE	Boolean				
					HSD Enabled	=	TRUE	Boolean				

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
				Disable Condit ons	for DTC's:	TCM: P0716, P0717, P0722, P0723, P182E		
						ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Transmission Input Speed Sensor (TISS)	P07BF	Input/Turbine Speed Sensor A Circuit Low	TISS Analog Signal Voltage	<= 0.25 Volts			>= 5.00E-02 sec	One Trip
			P07BF Status is not	l =				
			If the above conditons have been met, increment the P07BF Fail Counter					
			DTC P07BF Sets when the Fail Counter					
					P07BF Enable Calibration	= 1 Boolean		
					Ignition Voltage Lo	>= 9 Volts		
					Ignition Voltage Hi	<= 31.99 Volts		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Т	Thresl Valu	ie	Secondary Malfunction		Enab Condit				ime quired	I	Mil Illum.
						Disable Conditi ons:	MIL not Illuminated for DTC's:								
Transmission Input Speed Sensor (TISS)	P07C0	Input/Turbine Speed Sensor A Circuit High	TISS Analog Signal Voltage	>= 4	1.75	Volts					>=	5.00E	-02	sec	One Trip
			P07C0 Status is not	= Fa Ke or	Test ailed This ey On Fault ctive										
			If the above conditons have been met, increment the P07C0 Fail Counter												
			DTC P07C0 Sets when the Fail Counter	>=	75	Counts									
							P07C0 Enable Calibration	=	1	Boolean					
							Ignition Voltage Lo	>=	9	Volts					
							Ignition Voltage Hi	<=	31.99	Volts					
						Disable Conditi ons:	MIL not Illuminated for DTC's:								
Tap Up Tap Down Switch (TUTD)	P0815	Upshift Switch Circuit	Fail Tap Up Switch Cas Stuck in the Up e 1 Position in Range 1 Enabled	=	0	Boolean									Special No MIL

Component/	Fault	Monitor Strategy	Malfunction		reshold /alue	Secondary Malfunction	Enable Conditions	Time	Mil Illum.
System	Code	Description	Criteria  Tap Up Switch Stuck in the Up Position in Range 2 Enabled	= 0		Wallulicuoii	Conditions	Required	
			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	= TRU	JE Boolean			Fail >= 1 Time (Sec	Э

Component/	Fault Code	Monitor Strategy Description	Malfunction Criteria		shold lue	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Fail Tap Up Switch Cas Stuck in the Up e 2 Position in Range 1 Enabled		Boolean		Conditions	Roquilou	
			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		eshold alue	Secondary Malfunction		Enab Condit			Time Require		Mil Illum.
System	Code	Description	NOTE: Both Failcase1 and Failcase 2 Must Be Met		uiuc			Contain		>=	600	Fail Time (Sec)	
						Time Since Last Range Change	>=	1	Enable Time (Sec)				
						Ignition Voltage Lo	>=	9	Volts				
						Ignition Voltage Hi	<=	31.99	Volts				
						Engine Speed Lo	>=	400	RPM				
						Engine Speed Hi	<=	7500	RPM				
						Engine Speed is within the allowable limits for	>=	5	Sec				
						P0815 Status is	≠	Test Failed This Key On or Fault Active					
					Disable Conditi ons:	for DTC's:	P182	P0816, F E, P1876 5, P1761	, P1877,				
							ECM	None					
Tap Up Tap Down Switch (TUTD)	P0816	Downshift Switch Circuit	Fail Tap Down Switch Cas Stuck in the Down e 1 Position in Range 1 Enabled	= 0	Boolean								Specia No MIL
			Tap Down Switch Stuck in the Down Position in Range 2 Enabled	= 0	Boolean								

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Thres Va		Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			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 Tap Down Switch Cas Stuck in the Down e 2 Position in Range 1 Enabled	= 1	Boolean				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		eshold alue	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			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	= TRU	E Boolean				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions		Time Require		Mil Illum.
			NOTE: Both Failcase1 and Failcase 2 Must Be Met				>=	600	sec	
					Time Since Last Range Change					
					Ignition Voltage Lo	>= 9 Volts				
					Ignition Voltage Hi	<= 31.99 Volts				
					Engine Speed Lo	>= 400 RPM				
					Engine Speed Hi	<= 7500 RPM				
					Engine Speed is within the allowable limits for	>= 5 Sec				
					P0816 Status is	Test Failed This ≠ Key On or Fault Active				
				Disable Conditi ons:	for DTC's:	TCM: P0815, P0826, P182E, P1876, P1877, P1915, P1761 ECM: None				
Tap Up Tap Down Switch (TUTD)	P0826	Up and Down Shift Switch Circuit	TUTD Circuit Reads Invalid Voltage	= TRUE Boolean			>=	60	Fail Time (Sec)	Special No MIL
					Ignition Voltage Lo	>= 9 Volts				1
					Ignition Voltage Hi	<= 31.99 Volts				
					Engine Speed Lo	>= 400 RPM				
					Engine Speed Hi	<= 7500 RPM				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
2,555		2000,			Engine Speed is within the allowable limits for	>= 5 Sec	·	
					P0826 Status is	Test Failed This ≠ Key On or Fault Active		
				Disable Conditi ons:	for DTC's:			
Variable Bleed Solenoid (VBS)		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			Fail >= 4.4 Time (Sec)	Two Trips
							out Sample of Time (Sec)	
					Ignition Voltage	>= 9 Volts		
					Ignition Voltage	<= 31.99 Volts		
					Engine Speed	>= 400 RPM		
					Engine Speed	<= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		
				Disable Conditi ons:	for DTC's:			

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		able ditions		Time Requir		Mil Illum.
Variable Bleed Solenoid (VBS)		Pressure Control (PC) Solenoid A Control Circuit Low Voltage (Line Pressure VBS)	The HWIO reports a low voltage (ground short) error flag	= TRUE Boole	an			>=	1.5	Fail Time (Sec)	One Trip
								out of	1.875	Sample Time (Sec)	
					Ignition Voltage	>= 9	Volts				
					Ignition Voltage	<= 31.9	9 Volts				
					Engine Speed	>= 400	RPM				
					Engine Speed	d <= 7500	) RPM				
					Engine Speed is within the allowable limits fo		Sec				
				Disa Cor C							
Variable Bleed Solenoid (VBS)		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 Boole	an			>=	4.4	Fail Time (Sec)	Two Trips
								out of	5	Sample Time (Sec)	
					Ignition Voltage	>= 9	Volts				
					Ignition Voltage	<= 31.9	9 Volts				
				_	Engine Speed	d >= 400	RPM				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
.,		,			Engine Speed	<= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		
				Disab Cond on	ti for DTC's:			
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 Boolea	n		>= 0.3 Time (Sec)	One Trip
							out Sample of 0.375 Time (Sec)	
					Ignition Voltage	>= 9 Volts		
					Ignition Voltage	<= 31.99 Volts		
					Engine Speed	>= 400 RPM		
					Engine Speed	<= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		
					P0966 Status is not	Test Failed This = Key On or Fault Active		
				Disab Cond on	ti for DTC's:			

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions		Time Requir		Mil Illum.
Variable Bleed Solenoid (VBS)	P0967	Pressure Control (PC) Solenoid B Control Circuit High Voltage (C35R VBS)	The HWIO reports a high voltage (open or power short) error flag	= TRUE Boolean			>=	0.3	Fail Time (Sec)	One Trip
							out of	0.375	Sample Time (Sec)	
					Ignition Voltage	>= 9 Volts				
					Ignition Voltage	<= 31.99 Volts				
					Engine Speed	>= 400 RPM				
					Engine Speed	<= 7500 RPM				
					Engine Speed is within the allowable limits for	>= 5 Sec				
					P0967 Status is not	Test Failed This = Key On or Fault Active				
				Disable Condit ons	for DTC's:	TCM: None ECM: None				
Variable Bleed Solenoid (VBS)	P0970	Pressure Control (PC) Solenoid C Control Circuit Low Voltage (C456/CBR1 VBS)	The HWIO reports a low voltage (ground short) error flag	= TRUE Boolean			>=	0.3	Fail Time (Sec)	One Trip
							out of	0.375	Sample Time (Sec)	

Component/	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Citteria	Value	P0970 Status is not	Test Failed This	Required	
					Ignition Voltage			
					Ignition Voltage	<= 31.99 Volts		
					Engine Speed	>= 400 RPM		
					Engine Speed	<= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		
				Disable Conditi ons:	for DTC's:			
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			Fail >= 0.3 Time (Sec)	One Trip
							out Sample of 0.375 Time (Sec)	
					P0971 Status is not	Test Failed This = Key On or Fault Active		
					Ignition Voltage	>= 9 Volts		
					Ignition Voltage	<= 31.99 Volts		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Citteria	Value	Engine Speed		Required	
					Engine Speed			
					Engine Speed is within			
					the allowable limits for	>= 5 Sec		
				Disable				
				Condit ons		ECM: None		
								022
		Shift Solenoid A	The HWIO reports a low voltage				Fail	One Trip
Shift Solinoid		Control Circuit Low (Mode 2 Solenoid)	(ground short)	= TRUE Boolean			>= 1.2 Time (Sec)	
			error flag					
							out Sample of 1.5 Time	
							(Sec)	
						Test Failed		
					D0072 Ctatus is not	This		
					P0973 Status is not	or		
						Fault Active		
					Ignition Voltage			
					Ignition Voltage			
					Engine Speed	>= 400 RPM		
					Engine Speed			
					Engine Speed is within the allowable limits for			
				Disable	MIL not Illuminated	TCM: None		
				Condit	i for DTC's:			
				ons	1	ECM: None		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Threshold Value	Secondary Malfunction		Enable Condition			Tim Requi		Mil Illum.
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)	
						P0974 Status is not	=	Test Failed This Key On or Fault Active					
						Ignition Voltage	>=	9	Volts				
						Ignition Voltage	<=	31.99	Volts				
						Engine Speed	>=	400	RPM				
						Engine Speed	<=	7500	RPM				
						Engine Speed is within the allowable limits for	>=	5	Sec				
					Disable Conditi ons:	for DTC's:	TCM: ECM:						
Tap Up Tap Down Switch (TUTD)	P1761	Tap Up and Down switch signal circuit (rolling count)	Rolling count value received from BCM does not match expected value	=	TRUE Boolean					>=	3	Fail Counter	Special No MIL
										>	10	Sample Timer (Sec)	

Component/	Fault	Monitor Strategy	Malfunction	Thresho Value		Secondary Malfunction		Enab Condit		Time Required	Mil Illum.
System	Code	Description	Criteria	Value	;	Tap Up Tap Down Message Health	=	TRUE	Boolean	Required	mum.
						Engine Speed Lo	>=	400	RPM		
						Engine Speed Hi		7500	RPM		
						Engine Speed is within the allowable limits for	>=	5	Sec		
					Disable Conditi ons:	MIL not Illuminated for DTC's:	TCM: ECM:				
Internal Mode Switch (IMS)	P182E	Internal Mode Switch - Invalid Range	Fail Cas e 1 Current range	Transiti on 1 = (bit state 1110)	Range						One Trip
			Previous range	CeTRG  ≠ R_e_P RNDL_ F Drive6	Range						
			Previous range	CeTRG  ≠ R_e_P RNDL_ Drive4	Range						
			Range Shift State	Range Shift Comple ted	ENUM						
			Absolute Attained Gear Slip	<= 50 r	·pm						
			Attained Gear	<= Sixth							
			Attained Gear	>= First							
			Throttle Position Available	= TRUE							

Component/	Fault	Monitor Strategy	Malfunction	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Criteria	value	Walluffction	Conditions	Required	mum.
			Throttle Position	>= 8.0002 pct				
			Output Speed	>= 200 rpm				
			Engine Torque	>= 50 Nm				
			Engine Torque	<= 8191.8 Nm				
			If the above conditions are met then Increment Fail Timer				>= 1 Fail Seconds	
			If Fail Timer has Expired then Increment Fail Counter				>= 5 Fail Counts	
			Fail Cas e 2 Output Speed	<= 70 rpm				
			The following PRNDL sequence events occur in this exact order:					
			PRNDL state	Drive 6 = (bit Range on the state on the state)				
			PRNDL state = Drive 6 for					
			PRNDL state	Transiti on 8 = (bit Range state 0111)				

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
			PRNDL state	Drive 6 = (bit Range state 0110)				
			PRNDL state	Transiti on 1 = (bit Range state 1110)				
			Above sequencing occurs in	<= 1 Sec				
			Neutral Idle Mode	= Inactive				
			If all conditions above are met Increment delay Timer					
			If the below two conditions are met Increment Fail Timer				>= 3 Fail Seconds	
			delay timer	>= 1 Sec				
			Input Speed	>= 400 Sec				
			If Fail Timer has Expired then Increment Fail Counter				>= 2 Fail Counts	
			Fail Cas e 3 Current range	Transiti on 13 = (bit Range state 0010)	Previous range	CeTR GR_e_ ≠ PRND L_Driv e3		
			Engine Torque	>= -8192 Nm	Previous range	CeTR GR_e_ ≠ PRND L_Driv e2		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			Engine Torque	<= 8191.8 Nm	IMS is 7 position configuration	= 0 Boolean		
			If the above conditions are met then, Increment Fail Timer		If the "IMS 7 Position config" = 1 then the "previous range" criteria above must also be satsified when the "current range" = "Transition 13"		>= 0.225 Seconds	
			If Fail Timer has Expired then Increment Fail Counter				>= 15 Fail Counts	
			Fail Cas e 4 Current range	Transiti on 8 (bit state 0111)	Disable Fail Case 4 if last positive range was Drive 6 and current range is transition 8			
			Inhibit bit (see definition)	= FALSE	Set inhibit bit true if PRNDL = 1100 (rev) or 0100 (Rev-Neu transition 11) Set inhibit bit false if PRNDL = 1001 (park)			
			Steady State Engine Torque					
			Steady State Engine Torque	<= 8191.8 Nm				
			If the above conditions are met then Increment Fail Timer				>= 0.225 Seconds	

Component/	Fault	Monitor Strategy	Malfunction		Threshold Value	Secondary Malfunction	Enable	Time	Mil Illum.
System	Code	Description	Criteria  If the above Condtions have been met, Increment Fail		Value	Manunction	Conditions	Required  >= 15 Fail Counts	
			Counter Fail Cas Throttle Position e 5 Available	=	TRUE Boolea	n			
			The following PRNDL sequence events occur in this exact order:						
			PRNDL State		Revers e (bit state 1100)				
			PRNDL State		Transiti on 11 (bit Range state 0100)				
			PRNDL State		Neutral (bit state 0101)				
			PRNDL State		Transiti on 11 (bit Range state 0100)				
			Above sequencing occurs in	<=	1 Sec				
			Then delay timer increments						
			Delay timer	>=	5 sec				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Range Shift State	Range		Conditions	rtoquilou	
			Absolute Attained Gear Slip	<= 50 rpm				
			Attained Gear	<= Sixth				
			Attained Gear	>= First				
			Throttle Position	>= 8.0002 pct				
			Output Speed	>= 200 rpm				
			If the above conditions are met Increment Fail Timer				>= 20 Seconds	
			Fail Cas e 6 Current range	Illegal   (bit   state   0000 or   1000 or   0001)	A Open Circuit Definition (flag set false if the following conditions are met):			
			and		Current Range	Transiti on 11 ≠ (bit state 0100)		
			A Open Circuit (See Definition)	= FALSE Boolean	or			
					Last positive state	Neutral ≠ (bit state 0101)		

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
					Previous transition state	Transiti  ≠ on 8  (bit  state  0111)		
					Fail case 5 delay timer	= 0 sec		
			If the above Condtions are met then, Increment Fail timer				>= 6.25 Seconds	
			Fail Cas Current PRNDL e 7 State	PRNDL circuit ABCP = Range 1101				
			and					
			Previous PRNDL state	PRNDL circuit ABCP =1111				
			Input Speed	>= 150 RPM				
			Reverse Trans Ratio	<= 2.7369 ratio				
			Reverse Trans Ratio	>= 3.149 ratio				
			If the above Condtions are met then, Increment Fail timer				>= 6.25 Seconds	
			P182E will report test fail when any of the above 7 fail cases are met					

Ignition Voltage Lo   >= 9	Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value		Secondary Malfunction		Enab Condit			Time Requir		Mil Illum.
Internal Mode Switch (IMS)  Internal Mode Switch Does Not Indicate Park/Neutral (P/N) During Start  P1915  Internal Mode Switch Does Not Indicate Park/Neutral (P/N) During Start  PRNDL State is Park or Enumer Neutral ation  The following events must occur Sequentially	System	Code	Description	Criteria	Di	sable onditi	Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for Engine Torque Signal Valid  MIL not Illuminated for DTC's:	<= >= <= >= TCM: I P0722 P07BF ECM: P0103 P0108 P0174 P0202 P0205 P0208 P0302	9 31.99 400 7500 5 TRUE P0716, F, P0723, F, P077C P0101, I, P0106, P0171, P0175, P0203, P0206, P0300, P0303,	Volts Volts RPM RPM Sec  Boolean  20717, P07C0, P077D  P0102, P0107, P0107, P0107, P0201, P0204, P0207, P0301, P0304,		Requir	ed	Illum.
Initial Engine speed <= 50 RPM >= 0.1 Time (Sec)			Does Not Indicate Park/Neutral (P/N)	The following events must occur Sequentially Initial Engine	<sup>≠</sup> Neutral atio	on		P0308	, P0401,	P042E	>=	0.1	Enable Time (Sec)	One Trip

Component/	Fault	Monitor Strategy	Malfunction Criteria		Thres Val		Secondary Malfunction		Enabl Conditi			Time Require		Mil Illum
System	Code	Description	Engine Speed Between Following Cals		Val	ue	Wallunction		Conditi	OIIS		Kequii	eu	illulli
			Engine Speed Lo Hist	>=	50	RPM								
			Engine Speed Hi Hist	<=	480	RPM					>=	0.06875	Enable Time (Sec)	
			Then											
			Final Engine Speed	>=	500	RPM								
			Final Transmission Input Speed	>=	100	RPM					>=	1.25	Fail Time (Sec)	
							DTC has Ran this Key Cycle?	=	FALSE	Boolean				
							Ignition Voltage Lo	>=	6	V				
							Ignition Voltage Hi	<=	31.99	V				
							lgnition Voltage Hyst High (enables above this value)		5	V				
							Ignition Voltage Hyst Low (disabled below this value)		2	V				
							Transmission Output Speed	<=	90	rpm				
							P1915 Status is	<b>≠</b>	Test Failed This Key On or Fault Active					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		shold alue	Secondary Malfunction	Enable Conditions		Time Require	d	Mil Illum.
					Disable Conditi ons:	for DTC's:	TCM: P0722, P0723 ECM: None				
Transmission Control Module (TCM)	P2534	Ignition Switch Run/Start Position Circuit Low	TCM Run crank active (based on voltage thresholds below)	= FALS	E Boolean						One Trip
			Ignition Voltage High Hyst (run crank goes true when above this value)	5	Volts			>=	280	Fail Counts (25ms loop)	
			Ignition Voltage Low Hyst (run crank goes false when below this value)	2	Volts			Out of	280	Sample Counts (25ms loop)	
						ECM run/crank active status available	= TRUE Boolean				
						ECM run/crank active status	= TRUE Boolean				
					Disable Conditi ons:	for DTC's:	TCM: None ECM: None				
Variable Bleed Solenoid (VBS)	P2714	Pressure Control (PC) Solenoid D Stuck Off [CB26]	Fail Cas Case: Steady e 1 State 2nd Gear								One Trip
			Gear slip	>= 400	RPM			>= Ta	lease See able 5 For Neutral Time Cal	Neutral Timer (Sec)	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
Cyclem.		2000	Intrusive test: commanded 3rd gear					
			If attained Gear = 3rd for Time	Table Based Time Please see Enable >= Table 2 Time in (Sec) Support ing Docum ents				
			If Above Conditions have been met Increment 2nd gear fail count				2nd Gear >= 3 Fail	
			and CB26 Fail Count				Count or CB26 >= 14 Fail Count	
			Fail Cas Case: Steady e 2 State 6th Gear					
			Gear slip				Please See Table 5 For Neutral Time Cal  Neutral (Sec)	
			Intrusive test: commanded 5th gear					

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary		Enab			Tim		Mil
System	Code	Description	Criteria	Value	Malfunction		Conditi	ons		Requi	red	Illum.
			If attained Gear = 5th For Time	Support ing Docum								
			If Above Conditions have been met, Increment 5th gear fail counter						>=	3	5th Gear Fail Count or	
			and CB26 Fail Count						>=	14	CB26 Fail Count	
					PRNDL State defaulted	=	FALSE	Boolean				
					inhibit RVT	=	FALSE	Boolean				
					IMS fault pending indication	=	FALSE	Boolean				
					TPS validity flag	=	TRUE	Boolean				
					Hydraulic System Pressurized	=	TRUE	Boolean				
					Minimum output speed for RVT	>=	0	RPM				
					A OR B							
					(A) Output speed enable		100	RPM				
					(B) Accelerator Pedal enable	>=	0.5	Pct				
					Common Enable Criteria							
					Ignition Voltage Lo	>=	9	Volts				

Component/	Fault	Monitor Strategy	Malfunction	Threshold Value	Secondary Malfunction		Enabl Conditi		Time	Mil Illum.
System	Code	Description	Criteria	value		_			Required	mum.
					Ignition Voltage Hi		31.99	Volts		
					Engine Speed Lo	>=	400	RPM		
					Engine Speed Hi	<=	7500	RPM		
					Engine Speed is within the allowable limits for	>=	5	Sec		
					Throttle Position Signal valid		TRUE	Boolean		
					HSD Enabled	=	TRUE	Boolean		
					Transmission Fluid Temperature	>=	-6.656	°C		
					Input Speed Sensor fault	=	FALSE	Boolean		
					Output Speed Sensor fault		FALSE	Boolean		
					Default Gear Option is not present	=	TRUE			
				Disable Conditi ons:		TCM: P072	P0716, P 2, P0723,	0717, P182E		
						P010 P017 P017 P020 P020 P020 P030 P030	P0101, P 3, P0106, 8, P0171, 4, P0175, 2, P0203, 5, P0206, 8, P0300, 2, P0303, 5, P0306, 8, P0401,	P0107, P0172, P0201, P0204, P0207, P0301, P0304, P0307,		

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
Variable Bleed Solenoid (VBS)	P2715	Pressure Control (PC) Solenoid D Stuck On [CB26] (Dynamic)	Primary Offgoing Clutch is exhausted (See Table 13 in Supporting Documents for Exhaust Delay Timers)	= TRUE Boolean				One Trip
			Primary Oncoming Clutch Pressure Command Status	Maximu = m pressuri zed				
			Primary Offgoing Clutch Pressure Command Status	Clutch exhaust comma nd				
			Range Shift Status	Control				
			Attained Gear Slip	<= 40 RPM				
			If above coditons are true, increment appropriate Fail 1 Timers Below:					
			fail timer 1 (2-1 shifting with throttle)	Fail >= 0.4004 Time (Sec)				
			fail timer 1 (2-1 shifting without throttle)	Fail >= 0.5 Time (Sec)				
			fail timer 1 (2-3 shifting with throttle)	Fail >= 0.4004 Time (Sec)				
			fail timer 1 (2-3 shifting without throttle)	Fail >= 0.5 Time (Sec)				

Component/	Fault	Monitor Strategy	Malfunction	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Criteria fail timer 1 (2-4 shifting with throttle)	Fail >= 0.4004 Time	Manufetton	Conditions	Required	mum.
			fail timer 1 (2-4 shifting without throttle)	Fail				
			fail timer 1 (6-4 shifting with throttle)	>= 0.4004 Time				
			fail timer 1 (6-4 shifting without throttle)	>= 0.5 Time				
			fail timer 1 (6-5 shifting with throttle)	>= 0.7002 Time				
			fail timer 1 (6-5 shifting without throttle)	>= 0.5 Time				
			If Attained Gear Slip is Less than Above Cal Increment Fail Timers				Total Fail Time = (Fail 1 + Fail 2) See Enable Timers for >= Fail Timer sec 1, and Reference Supporting Table 15 for Fail Timer 2	
			If fail timer is greater than threshold increment corresponding gear fail counter and total fail counter					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enab Conditi			Tim Requi		Mil Illum.
			2nd gear fail counter						>=	3	Fail Counter From 2nd Gear	
											OR Fail	
			6th gear fail counter						>=	3	Counter From 6th Gear	
			total fail counter						>=	3	OR Total Fail Counter	
					TUT Enable temperature	>=	-6.656	°C				
					Input Speed Sensor fault	=	FALSE	Boolean				
					Output Speed Sensor fault	=	FALSE	Boolean				
					Command / Attained Gear	<b>≠</b>	1st	Boolean				
					High Side Driver ON output speed limit for		TRUE	Boolean				
					TUT input speed limit for TUT	>=	200	RPM RPM				
					PRNDL state defaulted	=	FALSE	Boolean				
					IMS Fault Pending	=	FALSE	Boolean				
					Service Fast Learn Mode	=	FALSE	Boolean				
					HSD Enabled	=	TRUE	Boolean				

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
				Disable Conditi ons:	for DTC's:	TCM: P0716, P0717, P0722, P0723, P182E  ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Variable Bleed Solenoid (VBS)	P2715	Pressure Control (PC) Solenoid D Stuck On [CB26] (Steady State)	Fail Cas Case: Steady e 1 State 1st					One Trip
			Attained Gear slip  If the Above is  True for Time	Table Based Time Please				
			Intrusive test: (CBR1 clutch exhausted)	0.4407				
			Gear Ratio Gear Ratio					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	If the above parameters are true			Consistence	Fail >= 1.1 Timer (Sec) Fail	
							>= 8 Count in 1st Gear or Total >= 8 Fail	
			Fail Cas Case: Steady e 2 State 3rd Gear				Counts	
			Max Delta Output Speed Hysteresis	Table Based value Please Refer to 3D Table 1 in supporti ng docume nts				

Component/	Fault	Monitor Strategy	Malfunction	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Criteria	Table Based value Please	Mananetion	Conditions	Required	
			Min Delta Output Speed Hysteresis	Refer to 3D rpm/sec Table 2 rpm/sec in supporti ng docume nts				
			If the Above is True for Time	Table Based Time Please Refer to >= Table Sec 17 in supporti ng docume nts				
			Intrusive test: (C35R clutch exhausted)					
			Gear Ratio					
			Gear Ratio If the above parameters are true	n>= 2.1003				
							Fail >= 1.1 Timel (Sec)	
							Fail >= 3 Count 3rd Ge	in

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Require		Mil Illum.
							>= 8	or Total Fail Counts	
			Fail Cas Case: Steady e 3 State 4rd Gear						
			Max Delta Output Speed Hysteresis	Table Based value Please Refer to 3D Table 1 in supporti ng docume nts					
			Min Delta Output Speed Hysteresis	Table Based value Please Refer to 3D rpm/sec in supporti ng docume nts					

Component/	Fault	Monitor Strategy	Malfunction	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Criteria	value	Walturiction	Conditions	Required	mum.
			If the Above is True for Time	Table Based Time Please Refer to >= Table Sec 17 in supporti ng docume nts				
			Intrusive test: (C1234 clutch exhausted)					
			Gear Ratio	<= 0.7982				
			Gear Ratio	>= 0.6937				
			If the above parameters are true					
							Fail >= 1.1 Timer (Sec)	
							Fail >= 3 Count in 4th Gear	
							or Total >= 8 Fail Counts	
			Fail Cas Case: Steady e 4 State 5th Gear					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Max Delta Output Speed Hysteresis	Table Based value Please Refer to 3D				
			Min Delta Output Speed Hysteresis	Table Based value Please Refer to 3D Table 2 rpm/sec in supporti ng docume nts				
			If the Above is True for Time	Table Based Time Please Refer to >= Table Sec 17 in supporti ng docume nts				
			Intrusive test: (C35R clutch exhausted) Gear Ratio	<= 0.7982				

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary Malfunction		Enab			Tim		Mil
System	Code	Description	Criteria	Value	Maitunction		Conditi	ions		Requi	irea	Illum.
			Gear Ratio	>= 0.6937								
			If the above									
			parameters are true									
			liue								Fail	
									>=	1.1	Timer	
											(Sec)	
										3	Fail Count in	
									>=	3	5th Gear	
											or	
											Total	
									>=	8	Fail Counts	
					PRNDL State defaulted	=	FALSE	Boolean				
					inhibit RVT	=	FALSE	Boolean				
					IMS fault pending indication	=	FALSE	Boolean				
					output speed	>=	0	RPM				
					TPS validity flag	=	TRUE	Boolean				
					HSD Enabled	=	TRUE	Boolean				
					Hydraulic_System_Pre ssurized	=	TRUE	Boolean				
					A OR B							
					(A) Output speed enable	>=	100	Nm				
					(B) Accelerator Pedal enable	>=	0.5	Nm				
					Ignition Voltage Lo	>=	9	Volts				
					Ignition Voltage Hi		31.99	Volts				
					Engine Speed Lo		400	RPM				
					Engine Speed Hi		7500	RPM				

Component/ System	Fault Code	Monitor Strategy  Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
		·			Engine Speed is within the allowable limits for	>= 5 Sec		
					if Attained Gear=1st FW Accelerator Pedal enable	>= 10 Pct		
					if Attained Gear=1st FW Engine Torque Enable			
					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		
					Default Gear Option is not present	= TRUE		
				Disable Conditi ons:	for DTC's:	TCM: P0716, P0717, P0722, P0723, P182E		
						ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions		Time Requir		Mil Illum.
Variable Bleed Solenoid (VBS)	D2720	Pressure Control (PC) Solenoid D Control Circuit Low (CB26 VBS)	The HWIO reports a low voltage (ground short) error flag	= TRUE Boolean			>=	0.3	Fail Time (Sec)	One Trip
							out of	0.375	Sample Time (Sec)	
					P2770 Status is not	Test Failed This = Key On or Fault Active				
					Ignition Voltage	>= 9 Volts				
					Ignition Voltage	<= 31.99 Volts				
					Engine Speed	>= 400 RPM				
					Engine Speed	<= 7500 RPM				
					Engine Speed is within the allowable limits for	>= 5 Sec				
				Disable Conditi ons:	for DTC's:					
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)	

Component/	Fault	Monitor Strategy	Malfunction	Thresh		Secondary		Enable		Time	_	Mil
System	Code	Description	Criteria	Valu	е	Malfunction		Condition	ons	Require	d	Illum.
						P2721 Status is not	=	Test Failed This Key On or Fault Active				
						Ignition Voltage	>=	9	Volts			
						Ignition Voltage	<=	31.99	Volts			
						Engine Speed	>=	400	RPM			
						Engine Speed	<=	7500	RPM			
						Engine Speed is within the allowable limits for	>=	5	Sec			
					Disable Conditi ons:	MIL not Illuminated for DTC's:		None None				
Variable Bleed Solenoid (VBS)		Pressure Control (PC) Solenoid E Stuck Off	Fail Cas Case: Steady e 1 State 1st Gear									One Trip
			Gear slip	>= 400	RPM					Please See Table 5 For >= Neutral Time Cal	Neutral Timer (Sec)	
			Intrusive test: commanded 2nd gear									

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
			If attained Gear ≠ 2nd for Time	Support (Sec) ing Docum				
			If Above Conditions have been met, Increment 1st gear fail counter				1st Gear >= 2 Fail Count	
			and C1234 fail counter				or C1234 >= 14 Clutch Fail Count	
			Fail Cas Case: Steady e 2 State 2nd Gear					
			Gear slip	>= 400 RPM			>= Please See Table 5 For Neutral Time Cal  Neutral (Sec)	
			Intrusive test: commanded 3rd gear					
			If attained Gear ≠ 3rd for Time	Please refer to Table 3 in Shift Support ing Docum ents				

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
			If Above Conditions have been met, Increment 2nd gear fail counter				>= 2 2nd Gear Fail Count	
			and C1234 fail counter				or C1234 Clutch Fail Count	
			Fail Cas Case: Steady e 3 State 3rd Gear					
			Gear slip	>= 400 RPM			>= Please See Table 5 For Neutral Time Cal  Neutral (Sec)	
			Intrusive test: commanded 4th gear					
			If attained Gear ≠ 4th for time					
			If Above Conditions have been met, Increment 3rd gear fail counter				3rd Gear >= 2 Fail Count	
			and C1234 fail counter				or C1234 Clutch Fail Count	

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enab		Tim		Mil
System	Code	Description	Criteria	Value	Malfunction	Condit	ions	Requi	red	Illum.
			Fail Cas Case: Steady e 4 State 4th Gear							
			Gear slip	>= 400 RPM				Please Se  Table 5 Fo  Neutral  Time Cal	Timer	
			Intrusive test: commanded 5th gear							
			If attained Gear = 5th For Time							
			If Above Conditions have been met, Increment 4th gear fail counter					>= 3	4th Gear Fail Count	
			and C1234 fail counter					>= 14	or C1234 Clutch Fail Count	
					PRNDL State defaulted	= FALSE	Boolean			
					inhibit RVT	= FALSE	Boolean			
					IMS fault pending indication	= FALSE	Boolean			
					TPS validity flag	= TRUE	Boolean			
					Hydraulic System Pressurized	= TRUE	Boolean			

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enab Conditi		Time Required	Mil Illum.
- Cyclem	0000	2 coonpact	51.161.16		Minimum output speed for RVT	>=	0	RPM	·	
					A OR B					
					(A) Output speed enable	>=	100	RPM		
					(B) Accelerator Pedal enable	>=	0.5	Pct		
					Common Enable Criteria					
					Ignition Voltage Lo	>=	9	Volts		
					Ignition Voltage Hi	<=	31.99	Volts		
					Engine Speed Lo	>=	400	RPM		
					Engine Speed Hi	<=	7500	RPM		
					Engine Speed is within the allowable limits for	>=	5	Sec		
					Throttle Position Signal valid		TRUE	Boolean		
					HSD Enabled	=	TRUE	Boolean		
					Transmission Fluid Temperature	>=	-6.656	°C		
					Input Speed Sensor fault	=	FALSE	Boolean		
					Output Speed Sensor fault	=	FALSE	Boolean		
					Default Gear Option is not present	=	TRUE			
								_		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
				Disable Conditi ons:	for DTC's:	TCM: P0716, P0717, P0722, P0723, P182E  ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Variable Bleed Solenoid (VBS)	P2724	Pressure Control (PC) Solenoid E Stuck On (Dynamic)	Primary Offgoing Clutch is exhausted (See Table 10 in Supporting Documents for Exhaust Delay Timers) Primary Oncoming	= TRUE Boolean				One Trip
			Clutch Pressure Command Status  Primary Offgoing Clutch Pressure Command Status	= pressuri zed  Clutch exhaust = comma				
			Range Shift Status Attained Gear Slip	Initial ≠ Clutch Control				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
.,			If the above conditions are true increment appropriate Fail 1 Timers Below:					
			fail timer 1 (2-6 shifting with throttle)	>= 0.4004 sec				
			fail timer 1 (2-6 shifting without throttle)	>= 0.5 sec				
			fail timer 1 (3-5 shifting with throttle)	>= 0.4004 sec				
			fail timer 1 (3-5 shifting without throttle)	>= 0.5 sec				
			fail timer 1 (4-5 shifting with throttle)	>= 0.4004 sec				
			fail timer 1 (4-5 shifting without throttle)	>= 0.5 sec				
			fail timer 1 (4-6 shifting with throttle)	>= 0.4004 sec				
			fail timer 1 (4-6 shifting without throttle)	>= 0.5 sec				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
		·	If Attained Gear Slip is Less than Above Cal Increment Fail Timers				Total Fail Time = (Fail 1 + Fail 2) See Enable Timers for >= Fail Timer sec 1, and Reference Supporting Table 15 for Fail Timer 2	
			If fail timer is greater than threshold increment corresponding gear fail counter and total fail counter					
			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 >= 3 Counter From 4th Gear	
			total fail counter				Total >= 3 Fail Counter	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enab Condit		Time Required	Mil Illum.
		·			TUT Enable temperature	>= -6.656	°C		
					Input Speed Sensor fault	= FALSE	Boolean		
					Output Speed Sensor fault	= FALSE	Boolean		
					Command / Attained Gear	≠ 1st	Boolean		
					High Side Driver ON	= TRUE	Boolean		
					output speed limit for TUT	>= 200	RPM		
					input speed limit for TUT	>= 200	RPM		
					PRNDL state defaulted	= FALSE	Boolean		
					IMS Fault Pending	= FALSE	Boolean		
					Service Fast Learn Mode	= FALSE	Boolean		
					HSD Enabled	= TRUE	Boolean		
				Disable Conditi ons:	for DTC's:	TCM: P0716, P P0722, P0723,  ECM: P0101, F P0103, P0106, P0108, P0171, P0174, P0175, P0202, P0203, P0205, P0206, P0208, P0300, P0302, P0303, P0305, P0306, P0308, P0401,	P182E P0102, P0107, P0172, P0201, P0204, P0207, P0301, P0304, P0307,		

Component/	Fault	Monitor Strategy		Malfunction	Threshold Value	Secondary Malfunction	Enable Conditions	Time	Mil Illum.
System	Code	Description		Criteria	value	Manufiction	Conditions	Required	
Variable Bleed Solenoid (VBS)	P2724	Pressure Control (PC) Solenoid E Stuck On (Steady State)	Fail Cas e 1	Case: 5th Gear					One Trip
				Max Delta Output Speed Hysteresis	Table Based value Please Refer to 3D rpm/sec Table 1 in supporti ng docume nts				
				Min Delta Output Speed Hysteresis	Table Based value Please Refer to 3D rpm/sec in supporti ng docume nts				
				If the Above is True for Time	Table Based Time Please Refer to >= Table Sec 17 in supporti ng docume nts				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
Jystelli	Code	Description	Intrusive test: (C35R clutch exhausted)	<= 1.5291 >= 1.329			>= 1.1 Fail Timer (Sec) Fail >= 3 Count in 5th Gear OR Total >= 3 Fail Counts	
			Fail Cas e 2  Case: 6th Gear Max Delta Output Speed Hysteresis	Table Based value Please Refer to 3D			Counts	

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary Malfunction	Enable Conditions	Time	Mil d Illum
System	Code	Description	Criteria	<b>Value</b> Table	iviairunction	Conditions	Require	d Illum.
			Min Delta Output Speed Hysteresis	Based value Please Refer to 3D				
			If the Above is True for Time	Table Based Time Please Refer to >= Table Sec 17 in supporti ng docume nts				
			Intrusive test: (CB26 clutch exhausted)					
			Gear Ratio	<= 1.5291				
				>= 1.329				
			If the above parameters are true					
							>= 1.1	Fail Timer (Sec)
								Fail Count in 6th Gear

Component/	Fault	Monitor Strategy	Malfunction	Threshold Value	Secondary Malfunction		Enab Conditi			Time		Mil Illum.
System	Code	Description	Criteria	value	Walluffction		Conditi	ions		Requi	OR	mum.
									>=	3	Total Fail Counts	
					PRNDL State defaulted	=	FALSE	Boolean				
					inhibit RVT	=	FALSE	Boolean				
					IMS fault pending indication	=	FALSE	Boolean				
					output speed	>=	0	RPM				
					TPS validity flag	=	TRUE	Boolean				
					HSD Enabled	=	TRUE	Boolean				
					Hydraulic_System_Pre ssurized	=	TRUE	Boolean				
					A OR B							
					(A) Output speed enable	>=	100	Nm				
					(B) Accelerator Pedal enable	>=	0.5	Nm				
					Ignition Voltage Lo	>=	9	Volts				
					Ignition Voltage Hi	<=	31.99	Volts				
					Engine Speed Lo	>=	400	RPM				
					Engine Speed Hi	<=	7500	RPM				
					Engine Speed is within the allowable limits for	>=	5	Sec				
					if Attained Gear=1st FW Accelerator Pedal enable		10	Pct				
					if Attained Gear=1st FW Engine Torque Enable	>=	45	Nm				
					if Attained Gear=1st FW Engine Torque Enable		8192	Nm				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					Transmission Fluid Temperature	>= -6.656 °C		
					Input Speed Sensor fault	= FALSE Boolean		
					Output Speed Sensor fault	= FALSE Boolean		
					Default Gear Option is not present	= TRUE		
				Disable Conditi ons:	for DTC's:	TCM: P0716, P0717, P0722, P0723, P182E		
						ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Variable Bleed Solenoid (VBS)	P2729	Pressure Control (PC) Solenoid E Control Circuit Low (C1234 VBS)	The HWIO reports a low voltage (ground short) error flag	= TRUE Boolean			Fail >= 0.3 Time (Sec)	One Trip
		· · · · · · · · · · · · · · · · · · ·					out Sample of 0.375 Time (Sec)	
					P2729 Status is not	Test Failed This = Key On or Fault Active		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Condition			Time Requir		Mil Illum.
					Ignition Voltage	>= 9	Volt				
					Ignition Voltage	<= 31.99	Volt				
					Engine Speed	>= 400	RPM				
					Engine Speed	<= 7500	RPM				
					Engine Speed is within the allowable limits for	>= 5	Sec				
				Disable Conditi ons:	for DTC's:						
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) Sample	One Trip
								out of	0.375	Time (Sec)	
					P2730 Status is not	Test Failed This = Key On or Fault Active					
					Ignition Voltage	>= 9	Volt				
					Ignition Voltage		Volt				
					Engine Speed		RPM				
					Engine Speed	<= 7500	RPM				
					Engine Speed is within the allowable limits for	>= 5	Sec				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
				Disable Conditi ons:	for DTC's:			
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			Fail >= 4.4 Time (Sec)	Two Trips
							out Sample out 5 Time of (Sec)	9
					P2763 Status is not	Test Failed This = Key On or Fault Active		
					Ignition Voltage	>= 9 Volt		
					Ignition Voltage	<= 31.99 Volt		
					Engine Speed	>= 400 RPM		
					Engine Speed	<= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		
					High Side Driver Enabled	= TRUE Boolean		
				Disable Conditi ons:	for DTC's:	TCM: P0658, P0659 ECM: None		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions		Tim Requi		Mil Illum.
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
							out of	5	MPH	
					P2764 Status is not	Test Failed This = Key On or Fault Active				
					Ignition Voltage	>= 9 Volt				
					Ignition Voltage	<= 31.99 Volt	l			
					Engine Speed	>= 400 RPM	1			
					Engine Speed	<= 7500 RPM	l			
					Engine Speed is within the allowable limits for	>= 5 Sec				
					High Side Driver Enabled	= TRUE Boolean				
				Disable Condit ons	for DTC's:	TCM: P0658, P0659 ECM: None				
Communication	U0073	Controller Area Network Bus Communication Error		= TRUE Boolean			>=	62	Fail counts (≈ 10 seconds)	One Trip

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Thresho Value		Secondary Malfunction		Enab Conditi			Tim Requi		Mil Illum.
Oystem	Jour	Bescription		>= 0.1125 s						Out of	70	Sample Counts (≈ 11 seconds)	
						Stabilization delay  Ignition Voltage	>=	3 9	sec Volt				
						Ignition Voltage		31.99	Volt				
						Power Mode		Run					
					Disable Conditi ons:	MIL not Illuminated for DTC's:							
Communication	U0100	Lost Communications with ECM (Engine Control Module)	CAN messages from ECM are not received by the TCM	= TRUE E	Boolean					>=	12	sec	One Trip
						Stabilization delay	>=	3	sec				
						Ignition Voltage		9	Volt				
						Ignition Voltage Power Mode		31.99 Run	Volt				
						Power Mode	=	Kuli					
					Disable Conditi ons:	MIL not Illuminated for DTC's:							
Communication	U0293	Loss Communications with HPCM (Hybrid Powertrain Control Module)	CAN messages from HPCM are not received by the TCM	= TRUE E	Boolean					>=	12	sec	Two Trips
						Stabilization delay Ignition Voltage Ignition Voltage Power Mode	<=	3 9 31.99 Run	sec Volt Volt				

# **Supporting Documents - 2D**

# Table 1

Axis	0.00	64.00	128.00	192.00	256.00	320.00	384.00	448.00	512.00	N*m
Curve	100.00	120.00	150.00	150.00	150.00	150.00	150.00	150.00	150.00	RPM

# Table 2

Axis	-6.67	-6.66	40.00	٥С
Curve	409.59	2.00	2.00	Sec

# Table 3

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

# Table 4

Axis	-6.67	-6.66	40.00	٥С
Curve	409.59	2.99	2.00	Sed

# Table 5

Axis	-6.67	-6.66	40.00	٥С
Curve	409.59	3.00	3.00	Sec

# Table 6

Axis	-6.67	-6.66	40.00	80.00	120.00	°C
Curve	409.00	3.60	1.60	1.40	1.40	Sec

# Table 7

Axis	-6.67	-6.66	40.00	80.00	120.00	٥С
Curve	409.00	3.40	1.40	1.30	1.20	Sec

# **Supporting Documents - 2D**

### Table 8

Axis	-6.67	-6.66	40.00	80.00	120.00	٥С
Curve	409.00	3.60	1.60	1.50	1.40	Sec

# Table 9

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

### Table 10

Axis	-6.67	-6.66	40.00	80.00	120.00	٥С
Curve	8.85	3.75	1.31	0.28	0.28	Sed

# **Table 11**

Axis	-6.67	-6.66	40.00	80.00	120.00	°С
Curve	5.00	1.70	0.40	0.25	0.25	Sec

Α	xis	-6.67	-6.66	40.00	80.00	120.00	°С
Cui	rve	8.00	2.20	0.70	0.25	0.25	Sec

### Table 13

Axis	-6.67	-6.66	40.00	80.00	120.00°	C
Curve	5.20	1.60	0.50	0.27	0.16	Sec

Table 14							
	Axis	-6.67	-6.66	40.00	80.00	120.00°	C,
	Curve	5.00	1.50	0.70	0.25	0.25	Sec

# **Supporting Documents - 2D**

# Table 15

Axis	-40.00	-30.00	-20.00	-10.00	0.00	10.00	20.00	30.00	40.00	٥С
Curve	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Sec

# **Table 16**

Axis	-6.67	-6.66	40.00	٥С
Curve	409.59	2.50	2.50	Sec

# **Table 17**

Axis	-6.67	-6.66	40.00	٥С
Curve	0.40	0.35	0.30	Sec

# Table 18

Axis	-40.10	-40.00	-20.00	0.00	30.00	60.00	100.00	149.00	149.10	٥С
Curve	256.00	50.00	45.00	40.00	34.00	25.00	20.00	20.00	256.00	٥С

# Table 19

Axis	-40.10	-40.00	-20.00	0.00	30.00	60.00	100.00	149.00	149.10	٥С
Curve	256.00	50.00	45.00	40.00	34.00	25.00	20.00	20.00	256.00	°C

### Table 20

Axis	-40.10	-40.00	-20.00	0.00	30.00	60.00	100.00	149.00	149.10	٥С
Curve	256.00	10.00	8.00	8.00	8.00	8.00	8.00	8.00	256.00	°C

# Table 21

Axis	-40.00	-20.00	40.00	°C
Curve	5.00	3.00	1.00	Sec

# **Supporting Documents - 3D**

# 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
ı	-6.66	8191.75	8191.75	8191.75	8191.75	8191.75
ı	40.00	8191.75	8191.75	8191.75	8191.75	8191.75

# 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