COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	тн	RESHOLI	VALUE	SECONDARY PARAMETERS	ENABLE CONDITION	S TIME REQUIRED	MIL ILLUM
Transmission Control Module (TCM)	P0601	Transmission Electro-Hydraulic Control Module Read Only Memory	Incorrect program/calibrations checksum	=	TRUE	Boolean			>= 5 Fail Counts	One Trip
							Ignition Voltage Lo Ignition Voltage Hi	>= 8.59961 Volt <= 18 Volt		
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0601 ECM: None		
Transmission Control Module (TCM)	P0603	Transmission Electro-Hydraulic Control Module Long-Term Memory Reset	Non-volatile memory (static or dynamic) checksum failure at Powerup	=	TRUE	Boolean			Runs Contin ously	One Trip
							Ignition Voltage Lo Ignition Voltage Hi			
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0603 ECM: None		
Transmission Control Module (TCM)	P0604	Transmission Electro-Hydraulic Control Module Random Access Memory	RAM Read/Write Failure (Single Word)	=	TRUE	Boolean			>= 5 Fail Counts	One Trip
									= 16 Sample Counts	
							Ignition Voltage Lo Ignition Voltage Hi	>= 8.59961 Vol:		
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0604 ECM: None		
Transmission Control Module (TCM)	P062F	Transmission Electro-Hydraulic Control Module Long Term Memory Performance	TCM Non-Volatile Memory bit Incorrect flag at Powerdown	=	TRUE	Boolean			Runs Contin ously	One Trip
							Ignition Voltage Lo Ignition Voltage Hi			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	TI	HRESHOLD	VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P062F ECM: None		
Transmission Control Module (TCM)	P0634	Transmission Electro-Hydraulic Control Module Internal Temperature Too High	Fail Case Substrate Temperature	>= 1	42.1015625	°C			Fail >= 5 Time (Sec)	One Trip
			Fail Case 2 Substrate Temperature Ignition Voltage		50 18	°C Volts			Fail >= 2 Time (Sec)	
			Note: either fail case can set the DTC				Ignition Voltage Lo Ignition Voltage Hi Substrate Temp Lo Substrate Temp Hi Substrate Temp Between Temp Range for Time P0634 Status is	<= 31.999 Volts >= 0 °C <= 170 °C >= 0.25 Sec Test Failed This Koy		
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None		
High Side Driver 1	P0658	Actuator Supply Voltage Circuit Low	The HWIO reports a low voltage (open or ground short) error flag	=	TRUE	Boolean			>= 3 Fail Counts out of 5 Sample Counts	One Trip
							P0658 Status is not	Test Failed This Key On or Fault Active		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					High Side Driver 1 On	= True Boolean		
				Disable Conditions:				
Transmission Control Module (TCM)	P0667	TCM Internal Temp (substrate) Sensor Circuit Range/Performance	If transmission oil temp to substrate temp Δ					Two Trips
			If TCM substrate temp to power up temp Δ					
			Both conditions above required to increment fail counter Note: table reference				>= 3000 Fail Counts (100ms loop)	
			temp = to the median temp of trans oil temp, substrate temp and power up temp.				Out 3750 Counts (100ms loop)	
			Non-continuous (intermittent) fail conditions will delay resetting fail counter until				>= 700 Pass Counts (100ms loop)	
							Out 875 Counts of 100ms	
					Engine Torque Signal Valid Accelerator Position Signal Valid Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo	= TRUE Boolean >= 8.59961 Volts <= 31.999 Volts		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENA	BLE COND	DITIONS	TIME REQUIRED	MIL ILLUM.
					Engine Speed Hi	<=	7500	RPM		
					Engine Speed is within the allowable limits for	>=	5	Sec		
					Brake torque active	=	FALSE			
					Below describes the brake torque entry criteria					
					Engine Torque	>=	90	N*m		
					Throttle		30.0003	Pct		
					Transmission Input Speed		200	RPM		
					Vehicle Speed		8	Kph		
					Transmission Range Transmission Range		Park Neutral			
							Not			
					PTO	=	Active			
					Set Brake Torque Active TRUE if above conditions are	>=	7	sec		
					met for:					
					Below describes the brake torque exit criteria					
					Brake torque entry criteria	=	Not Met			
					Clutch hydraulic pressure	≠	Clutch Hydraulic Air Purge Event			
					Clutch used to exit brake torque active	=	CeTFTD _e_C3_R atlEnbl			
					The above clutch pressure is greater than this value for one loop	>=	600	kpa		
					Set Brake Torque Active FALSE if above conditions are met for:	>=	20	Sec		
					P0667 Status is	≠	Test Failed This Key On or Fault Active			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
				Disable Conditions:		TCM: P0658, P0668, P0669, P06AD, P06AE, P0716, P0712, P0713, P0717, P0722, P0723, P0962, P0963, P0966, P0967, P0970, P0971, P215C, P2720, P2721, P2729, P2730 ECM: P0101, P0102,		
						P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Transmission Control Module (TCM)	P0668	TCM internal temperature (substrate) thermistor failed at a low voltge	Type of Sensor Used	= CeTFTI_e_Volt ageDirectProp				Two Trips
			If TCM Substrate Temperature Sensor = Direct Proportional and Temp	<= -249 °C				
			If TCM Substrate Temperature Sensor = Indirect Proportional and Temp	>= -249 °C				
			Either condition above will satisfy the fail conditions				Fail >= 60 Timer (Sec)	
					Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo	<= 31.999 Volts		
					Engine Speed Hi Engine Speed is within the allowable limits for	>= 5 Sec		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD) VALUE	SECONDARY PARAMETERS	ENA	ABLE COND	DITIONS	TIME	REQUIRED	MIL ILLUM.
							P0668 Status is	≠	Test Failed This Key On or Fault Active				
						Disable Conditions:	DTC's:		None None				
Transmission Control Module (TCM)	P0669	TCM internal temperature (substrate) thermistor failed at a high voltage	Type of Sensor Used	=	CeTFTI_e_Vo	olt p							Two Trips
			If TCM Substrate Temperature Sensor = Direct Proportional and Temp	>=	249	°C							
			If TCM Substrate Temperature Sensor = Indirect Proportional and Temp	<=	249	°C						Fail	
			Either condition above will satisfy the fail conditions								>=		
							Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo	>=	8.59961 31.999 400	Volts Volts RPM			
							Engine Speed Hi Engine Speed is within the allowable limits for		7500 5	RPM Sec			
							P0669 Status is	≠	Test Failed This Key On or Fault Active				
							For Hybrids, below conditions must also be met						
							Estimated Motor Power Loss	>=	0	kW			
							Estimated Motor Power Loss greater than limit for time	>=	0	Sec			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Lost Communication with Hybrid Processor Control Module Estimated Motor Power Loss Fault	= FALSE = FALSE		
				Disable Conditions:		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					Two Trips
			If transmission oil temp to power up temp Δ					
			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 3750 Counts (100ms loop)	
			Non-continuous (intermittent) fail conditions will delay resetting fail counter unti				>= 700 Pass Counts (100ms loop)	
							Out 875 Counts of 100ms loop)	
					Engine Torque Signal Valid Accelerator Position Signal Valid Ignition Voltage Lo Ignition Voltage Hi	= TRUE Boolean >= 8.59961 Volts		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENA	BLE CONE	DITIONS	TIME REQUIRED	MIL ILLUM
					Engine Speed Lo	>=	400	RPM		
					Engine Speed Hi	<=	7500	RPM		
					Engine Speed is within the	>=	5	Sec		
					allowable limits for Brake torque active	=	FALSE			
					Below describes the brake		TALOL			
					torque entry criteria					
					Engine Torque	>=	90	N*m		
					Throttle		30.0003	Pct		
					Transmission Input Speed	<=	200	RPM		
					Vehicle Speed		8	Kph		
					Transmission Range		Park			
					Transmission Range	≠	Neutral			
					PTO	=	Not Active			
					Set Brake Torque Active		Active			
					TRUE if above conditions are	>=	7	sec		
					met for: Below describes the brake					
					torque exit criteria					
					Brake torque entry criteria	=	Not Met			
					Clutch hydraulic pressure	≠	Clutch Hydraulic			
					, ,		Air Purge Event			
					Clutch used to exit brake		CeTFTD			
					torque active	=	_e_C3_R atlEnbl			
					The above clutch pressure is		auLiibi			
					greater than this value for one loop	>=	600	kpa		
					Set Brake Torque Active					
					FALSE if above conditions are met for:	>=	20	Sec		
							Test			
							Failed This Key			
					P06AC Status is	≠	On or			
							Fault			
							Active			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
				Disable Conditions:		TCM: P0658, P0668, P0669, P06AD, P06AE, P0716, P0712, P0713, P0717, P0722, P0723, P0962, P0963, P0966, P0967, P0970, P0971, P215C, P2720, P2721, P2729, P2730 ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Transmission Control Module (TCM)	P06AD	TCM power-up thermistor circuit voltage low	Power Up Temp	<= -59 °C			>= 60 Time (Sec)	Two Trips
					Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for P06AD Status is For Hybrids, below conditions must also be met Estimated Motor Power Loss greater than limit for time Lost Communication with	>= 400 RPM <= 7500 RPM >= 5 Sec Test Failed This Key On or Fault Active >= 0 kW		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
				Disab Condition	Estimated Motor Power Loss Fault MIL not Illuminated for	= FALSE TCM: P0716, P0717, P0722, P0723		
						ECM: None		
Transmission Control Module (TCM)	P06AE	TCM power-up thermistor circuit voltage high	Power Up Temp	>= 164 °C			>= 60 Time (Sec)	Two Trips
					Ignition Voltage Lo Ignition Voltage H Engine Speed Lo Engine Speed H Engine Speed is within the allowable limits for	<= 31.999 Volts >= 400 RPM <= 7500 RPM >= 5 Sec Test		
					P06AE Status is	On or Fault Active		
				Disab Condition		TCM: None ECM: None		
Mode Switch	P071A	Transmission Mode Switch A Circuit	If Tow Haul / Winter Switch Active	= IPIIE Roolean			>= 600 Time (Sec)	Special No Trip
					Ignition Voltage Lo Ignition Voltage H Engine Speed Lo Engine Speed H Engine Speed is within the allowable limits for	<= 31.999 Volts >= 400 RPM <= 7500 RPM		
				Disab Condition				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
Fransmission Fluid Femperature Sensor TFT)	P0711	Trans Fluid Temp Sensor Circuit Range/Performance	If transmission oil temp to substrate temp Δ	Refer to Table 19 in °C supporting documents				Two Trips
			If transmission oil temp to power up temp Δ	Refer to Table 18 in C supporting documents				
			Both conditions above required to increment fail counter				>= 3000 Fail Counts (100ms loop)	
			Note: table reference temp = to the median temp of trans oil temp, substrate temp and power up temp.				Out 3750 of Sample Counts (100ms loop)	
			Non-continuous (intermittent) fail conditions will delay resetting fail counter until				>= 700 Pass Counts (100ms loop)	
							Out 875 Sample Counts (100ms loop)	
					Engine Torque Signal Valid	= TRUE Boolean		
					Accelerator Position Signal Valid	= TRUE Boolean		
					Ignition Voltage Lo Ignition Voltage Hi	>= 8.59961 Volts <= 31.999 Volts		
					Engine Speed Lo Engine Speed Hi			
					Englife Speed File Engine Speed File Engine Speed is within the allowable limits for Brake torque active	>= 5 Sec		
					Below describes the brake torque entry criteria			
					Engine Torque Throttle			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENA	ABLE COND	ITIONS	TIME REQUIRED	MIL ILLUM.
					Transmission Input Speed	<=	200	RPM		
					Vehicle Speed	<=	8	Kph		
					Transmission Range	≠	Park			
					Transmission Range	≠	Neutral			
					PTO		Not Active			
					Set Brake Torque Active		7			
					TRUE if above conditions are met for:	>=	7	sec		
					Below describes the brake					
					torque exit criteria					
					Brake torque entry criteria	=	Not Met			
					Clutch hydraulic pressure	≠	Clutch Hydraulic Air Purge Event			
					Clutch used to exit brake torque active		CeTFTD _e_C3_R atlEnbl			
					The above clutch pressure is greater than this value for one loop	>=	600	kpa		
					Set Brake Torque Active FALSE if above conditions are met for:		20	Sec		
					P0711 Status is	≠	Test Failed This Key On or Fault Active			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
				Disable Conditions:		TCM: P0658, P0668, P0669, P06AD, P06AE, P0716, P0712, P0713, P0717, P0722, P0723, P0962, P0963, P0966, P0967, P0970, P0971, P215C, P2720, P2721, P2729, P2730 ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Transmission Fluid Temperature Sensor (TFT)	P0712	Transmission fluid temperature thermistor failed at a low voltage	Type of Sensor Used If Transmission Fluid Temperature Sensor = Direct Proportional and Temp If Transmission Fluid Temperature Sensor = Indirect Proportional and Temp	agebirectProp				Two Trips
			Either condition above will satisfy the fail conditions		Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for	<= 31.999 Volts >= 400 RPM <= 7500 RPM	Fail >= 60 Time (Sec)	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD	VALUE	SECONDARY PARAMETERS	ENA	ABLE CONI	DITIONS	TIME	REQUIRED	MIL ILLUM.
							P0712 Status is	≠	Test Failed This Key On or Fault Active				
							For Hybrids, below conditions must also be met						
							Estimated Motor Power Loss		0	kW			
							Estimated Motor Power Loss greater than limit for time	>=	0	Sec			
							Lost Communication with Hybrid Processor Control Module	=	FALSE				
							Estimated Motor Power Loss Fault	=	FALSE				
						Disable Conditions:	DTC's:	P072	2, P0723	717,			
Transmission Fluid Temperature Sensor (TFT)	P0713	Transmission fluid temperature thermistor failed at a high voltage	Type of Sensor Used	=	CeTFTI_e_Volt ageDirectProp			ECM	None				Two Trips
(11-1)			If Transmission Fluid Temperature Sensor = Direct Proportional and Temp	>=	174	°C							
			If Transmission Fluid Temperature Sensor = Indirect Proportional and Temp	<=	174	°C							
			Either condition above will satisfy the fail conditions								>=	Fail 60 Time (Sec)	
							Ignition Voltage Lo		8.59961	Volts			
							Ignition Voltage Hi Engine Speed Lo		31.999 400	Volts RPM			
							Engine Speed Hi	<=	7500	RPM			
							Engine Speed is within the allowable limits for	>=	5	Sec			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD	VALUE	SECONDARY PARAMETERS	ENABLE	E CONI	DITIONS	TIME REQ	UIRED	MIL ILLUM.
						P0713 Status is	F ≠ C F	Test ailed is Key on or ault active				
					Disable Conditions:	DTC's:	TCM: P07 P0717, P0 ECM: Nor	0722, F				
Transmission Input Speed Sensor (TISS)	P0716	Input Speed Sensor Performance	Transmission Input Speed Sensor Drops	>= 881.75	RPM					>= 0.8	Fail Time (Sec)	One Trip
						Engine Torque is Engine Torque is Engine Speed Engine Speed Engine Speed is within the allowable limits for Vehicle Speed is Throttle Position is Transmission Input Speed is The previous requirement has been satisfied for The change (loop to loop) in transmission input speed is The previous requirement has been satisfied for Throttle Position Signal Valid Engine Torque Signal Valid	<= 81 >= T = T	0 91.88 400 7500 5 0 0 0 91.88 0 RUE RUE	N*m N*m RPM RPM Sec Kph Pct RPM Sec RPM/Loo p Sec Boolean Boolean Volts			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	ERIA I THRESHOLD VALUE I		SECONDARY PARAMETERS	ENABLE CONDITIONS		ENABLE CONDITIONS		UIRED	MIL ILLUM.	
							P0716 Status is not	=	Test Failed This Key On or Fault Active	,			
						Disable Conditions:		P0973 ECM:	3, P0974 P0101, P 3, P0121,	0102,			
Transmission Input Speed Sensor (TISS)	P0717	Input Speed Sensor Circuit Low Voltage	Fail Case Transmission Input Speed is	<	32.625	RPM					>= 4.5	Fail Time (Sec)	One Trip
			Fail Case When P0722 DTC Status 2 equal to Test Failed and Transmission Input Speed is	<	653.125	RPM	Controller uses a single power supply for the speed sensors		1	Boolean			
							Engine Torque is Engine Torque is Vehicle Speed	<=	50 8191.88 16	N*m N*m Kph			
							Engine Torque Signal Valid		TRUE	Boolean			
							Ignition Voltage Ignition Voltage		8.59961 31.999	Volts Volts			
							Engine Speed		400	RPM			
							Engine Speed	<=	7500	RPM			
							Engine Speed is within the allowable limits for	>=	5	Sec			
							P0717 Status is not	=	Test Failed This Key On or Fault Active	,			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	TH	IRESHOLD	VALUE	SECONDARY PARAMETERS	ENA	BLE CON	DITIONS	TIME REG	QUIRED	MIL ILLUM.
						Disable Conditions:	MIL not Illuminated for DTC's:		P0101, P0				
Transmission Output Speed Sensor (TOSS)	P0722	Output Speed Sensor Circuit Low Voltage	Transmission Output Speed Sensor Raw Speed	<=	35	RPM			<u> </u>		>= 4.5	Fail Time (Sec)	One Trip
							P0722 Status is not Transmission Input Speed Check Engine Torque Check Throttle Position Transmission Fluid Temperature Disable this DTC if the PTO is active Engine Torque Signal Valid Throttle Position Signal Valid Ignition Voltage is	= = >= = = =	Test Failed This Key On or Fault Active TRUE TRUE 8.00018 -40 1 TRUE TRUE TRUE	Boolean Boolean Pct °C Boolean Boolean Boolean			
							Ignition Voltage is Engine Speed is Engine Speed is Engine Speed is Engine Speed is within the allowable limits for	<= >= <=	31.999 400 7500 5	Volts RPM RPM Sec			
							Enable_Flags Defined Below The Engine Torque Check is TRUE, if either of the two following conditions are TRUE Engine Torque Condition 1						
							Shift Status is not OR		complete				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Transmission Range is	Neutrai		
					Engine Torque is			
					Engine Torque is	s <= 8191.75 N*m		
					Engine Torque Condition 2	2		
					Engine Torque is			
					Engine Torque is	s <= 8191.75 N*m		
					The Transmission Inpu Speed (TIS) Check is TRUE if either of the two following	,		
					conditions are TRUE			
					TIS Check Condition 1			
					Transmission Input Speed is	s >= 653.125 RPM		
					Transmission Input Speed is	s <= 5350 RPM		
					TIS Check Condition 2			
					Engine Speed without the			
					brake applied is Engine Speed with the brake	8		
					applied is Engine Speed is	>= 3200 RFM		
					Controller uses a single			
					power supply for the speed sensors	= 1 Boolean		
					Powertrain Brake Pedal is Valid	= TRUE Boolean		
				Disa Conditio		TCM: P0716, P0717, : P0723		
						ECM: P0101, P0102, P0103, P0121, P0122, P0123		
Transmission Output Speed Sensor (TOSS)	P0723	Output Speed Sensor Circuit Intermittent	Raw Output Speed	>= 105 RPM			>= 0 Enable (Sec)	One Trip

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOL	O VALUE	SECONDARY PARAMETERS	ENA	BLE CON	DITIONS	TIME REG	UIRED	MIL ILLUM.
			Output Speed Delta	<=	8192	RPM					>= 0	Enable Time (Sec) Output	
			Output Speed Drop	>	650	RPM					>= 1.5	Speed Drop Recove r Fail Time (Sec)	
							Range_Disable OR	=	FALSE	See Below			
							Neutral_Range_Enable And	=	TRUE	See Below			
							Neutral_Speed_Enable are TRUE concurrently	=	TRUE	See Below			
							Transmission_Range_Enable Transmission_Input_Speed_ Enable	=	TRUE TRUE	See Below See Below			
							No Change in Transfer Case Range (High <-> Low) for	>=	5 Test	Seconds			
							P0723 Status is not	=	Failed This Key On or Fault Active				
							Disable this DTC if the PTO is active Ignition Voltage is	_	1 8.59961	Boolean Volts			
							Ignition Voltage is Engine Speed is	<= >=	31.999 400	Volts RPM			
							Engine Speed is Engine Speed is within the allowable limits for		7500 5	RPM Sec			
							Enable_Flags Defined Below						

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Transmission_Input_Speed_ Enable is TRUE when either TIS Condition 1 or TIS Condition 2 is TRUE:			
					TIS Condition 1 is TRUE when both of the following conditions are satsified for Input Speed Delta Raw Input Speed	(Sec) <= 4095.88 RPM		
					TIS Condition 2 is TRUE when ALL of the next three conditions are satisfied Input Speed	= 0 RPM		
					A Single Power Supply is used for all speed sensors Powertrain Brake Pedal Applied is			
					Neutral_Range_Enable is TRUE when any of the next 3 conditions are TRUE Transmission Range is			
					Transmission Range is	Reverse/ = Neutral Transiton al Neutral/D		
					Transmission Range is And when a drop occurs	ris co		
					Loop to Loop Drop of Transmission Output Speed is	> 8192 RPM		
					Range_Disable is TRUE when any of the next three conditions are TRUE Transmission Range is	= Park ENUM		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Transmission Range is	Park/Rev = erse ENUM Transiton al		
					Input Clutch is not	= ON (Fully Applied) ENUM		
					Neutral_Speed_Enable is TRUE when All of the next three conditions are satsified for	> 400 E04 Seconds		
					Transmission Output Speed And the acceleration of the Transmission Output Speed is	DDM/I oo		
					And the acceleration of the Transmission Output Speed is			
					Transmission_Range_Enable is TRUE when one of the next four conditions is TRUE			
					Transmission Range is Transmission Range is	Reverse/ = Neutral ENUM Transitio nal		
					Transmission Range is	nal		
					Range Change Delay Timer	>= 5 Sec		
				Disable Conditions:		P0976, P0977		
						ECM: P0101, P0102, P0103, P0121, P0122, P0123		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD	VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS		ENABLE CONDITIONS		REQ	UIRED	MIL ILLUM.
Torque Converter Clutch (TCC)	P0741	TCC System Stuck OFF	TCC Pressure	>=	750	Кра					>=	2	Enable Time (Sec)	Two Trips
			Either Condition (A) or (B) Must be Met											
			(A) TCC Slip Error @ TCC On Mode		Refer to Table 1 in Supporting Documents	RPM					>=	6	Fail Time (Sec)	
			(B) TCC Slip @ Lock On Mode	>=	130	RPM					>=	6	Fail Time (Sec)	
			If Above Conditions Have been Met, and Fail Timer Expired, Increment Fail Counter								>=	2	TCC Stuck Off Fail Counter	
							Ignition Voltage Lo	>=	8.59961	Volts				
							Ignition Voltage Hi	<=	31.999	Volts				
							Engine Speed		400	RPM				
							Engine Speed	<=	7500	RPM				
							Engine Speed is within the	>=	5	Sec				
							allowable limits for Engine Torque Lo	>=	50	N*m				
							Engine Torque Hi		8191.88	N*m				
							Throttle Position Lo		8.00018	Pct				
							Throttle Position Hi		99.9985	Pct				
							2nd Gear Ratio Lo	>=	2.19482	Ratio				
							2nd Gear Ratio High		2.52515	Ratio				
							3rd Gear Ratio Lo		1.42285	Ratio				
							3rd Gear Ratio High		1.63708	Ratio				
							4th Gear Ratio Lo		1.06946	Ratio				
							4th Gear Ratio High		1.23047	Ratio				
							5th Gear Ratio Lo	>=	0.79053	Ratio				
							5th Gear Ratio Hi	<=	0.90955	Ratio				
							6th Gear Ratio Lo		0.62305	Ratio				
							6th Gear Ratio High	<=	0.71692	Ratio				
							Transmission Fluid Temperature Lo	>=	-6.65625	°C				
							Transmission Fluid Temperature Hi	<=	130	°C				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHO	.D VALUE	SECONDARY PARAMETERS	ENABL	E CON	DITIONS	TIME	REQUIRED	MIL	L ILLUM.
						TCC Command Lock ON or ON mode			Boolean				
						PTO Not Active			Boolean				
						Engine Torque Signal Valid			Boolean				
						Throttle Position Signal Valid			Boolean				
						Dynamic Mode P0741 Status is	l ≠ Ti	Test Failed his Key On or Fault Active	Boolean				
					Disable Conditions:		TCM: P0 P0722, F P2763, F ECM: P0	P0723, P2764	P0742,				
							P0103, F P0108, F P0174, F P0202, F P0205, F P0208, F P0302, F P0305, F P0308, F	P0106, F P0171, F P0175, F P0203, F P0206, F P0300, F P0303, F P0306, F	P0107, P0172, P0201, P0204, P0207, P0301, P0304, P0307,				
Torque Converter	P0742	TCC System Stuck ON	TCC Slip Speed	>= -50	RPM							0	One Trip
Clutch (TCC)		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	TCC Slip Speed		RPM					>=	Fail 2 Time		
			If Above Conditions Have been Met, and Fail Timer Expired, Increment Fail Counter							>=	(Sec) 6 Fail Count		
						Run TCC Stuck On Test Enable Criteria: Gear Ratio Gear Ratio Engine Speed Hi	>= 2	.52515 .19482 6500					

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS		ENABLE CONDI		DITIONS	TIME REQUIRED	MIL ILLUM
					Engine Speed Lo	>=	500	RPM				
					Vehicle Speed HI	<=	511	KPH				
					Vehicle Speed Lo	>=	16	KPH				
					Stuck On During Upshift							
					Enabled	=	1	Boolean				
					If Stuck On During Upshift is							
					enabled (See Above),	>=	55	Nm				
					Engine Torque Must be							
					Down Shift In Progress	=	FALSE					
					Current Gear	¥	1st Gear	Boolean				
					Engine Torque Hi	<=	Locked 8191.88	Nm				
					Engine Torque Lo		80	Nm				
					Current Range	≠	Neutral	Range				
					Current Range		Reverse					
					Transmission Sump							
					Temperature	<=	130	°C				
					Transmission Sump	>=	-6.65625	°C				
					Temperature							
					Throttle Position Hyst High	>=	8.00018	Pct				
					Throttle Position Hyst Low	<=	2.99988	Pct				
					PTO Active	=	FALSE	Boolean				
					Disable if in D1 and value	=	0	Boolean				
					true Disable if in D2 and value	=	0	Boolean				
					true Disable if in D3 and value	=	0	Boolean				
					true Disable if in D4 and value	=	0	Boolean				
					true Disable if in D5 and value	=	0	Boolean				
					true Disable if in MUMD and value	=	0	Boolean				
					true Disable if in TUTD and value	=	0	Boolean				
					true 4 Wheel Drive Active	=	FALSE	Boolean				
					Hydraulic Clutch Air Purge	=		Boolean				
					Active Ignore Air Purge if value =	=	0	Boolean				
					true TCC Mode	=	OFF					
					Common Enables:		011					
					Ignition Voltage	>=	8.59961	V				
					Ignition Voltage		31.999	V				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD	VALUE	SECONDARY PARAMETERS	ENA	BLE CON	IDITIONS	TIME	REQUIRED	MIL ILLUM.
						Disable Conditions:	DTC's:	>= <=	511 400 7500 5 TRUE TRUE Test Failed This Key On or Fault Active P0716, P 2, P0723, 3, P2764 P0101, F 3, P0106, 3, P0175, 2, P0203, 5, P0206, 3, P0300, 2, P0303, 5, P0306, 3, P0401,	0717, P0741, P0102, P0107, P0172, P0201, P0204, P0207, P0301, P0304, P0307,			
Mode 2 Multiplex Valve	P0751	Shift Solenoid Valve A Stuck Off	Commaned Gear Slip Commanded Gear Gear Ratio Gear Ratio If the above parameters are true	= <= >=	400 1st Lock 1.209594727 1.094360352	RPM rpm						8 Fail Count Neutra 0 Timer (Sec) Fail	1

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENA	BLE CON	DITIONS	TIME	EREC	UIRED	MIL ILLUM.
									>=	8	Counts	
					Ignition Voltage Lo	>=	8.59961	Volts				
					Ignition Voltage Hi	<=	31.999	Volts				
					Engine Speed Lo	>=	400	RPM				
					Engine Speed Hi		7500	RPM				
					Engine Speed is within the allowable limits for		5	Sec				
					Transmission Fluid	>=	-6.65625	°C				
					Temperature Shift is Complete							
					TPS	>=	0.50049	%				
					OR							
					Output Speed Throttle Position Signal Valid		0	RPM				
					from ECM	=	TRUE	Boolean				
					Engine Torque Signal Valid from ECM, High side driver is		TRUE	Boolean				
					enabled High-Side Driver is Enabled	=	TRUE	Boolean				
					Input Speed Sensor fault	=	FALSE	Boolean				
					Output Speed Sensor fault			Boolean				
					Default Gear Option is not present	=	TRUE					
				Disabl Conditions			P0716, P0 2, P0723, I					
						ECM:	P0101, P0	0102.				
						P0103	3, P0106, I	P0107,				
							3, P0171, I					
							4, P0175, I 2, P0203, I					
							5, P0206, I					
							3, P0300, I					
							2, P0303, I					
						P0308	5, P0306, I 3, P0401, I	P042E				
Mode 2 Multiplex Valve	P0752	Shift Solenoid Valve A Stuck On	Gear Box Slip	>= 400 Rpm								One Trip

FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD	VALUE	SECONDARY PARAMETERS	ENA	BLE CON	DITIONS	TIME REQUIRED	MIL ILLUM.
		Commanded Gear Commanded Gear has Achieved 1st Locked OR 1st Free-Wheel OR 2nd with Mode 2 Sol. Commanded On C456/CBR1 Pressure Switch C456/CBR1 Pressure Switch Fault If the above parameters are true	3rd TRUE Pressurized FALSE	Gear Boolean Boolean	Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed Hi Engine Speed is within the allowable limits for High-Side Driver is Enabled Throttle Position Signal Valid from ECM Output Speed OR TPS Shift is Complete Transmission Fluid Temperature Input Speed Sensor fault Output Speed Sensor fault Output Speed Sensor fault Default Gear Option is not present	\" \" \" \" \" \" \" \" \" \" \" \" \" \	TRUE 0 0.50049 -6.65625 FALSE		Pleas e Refer to Neutral 7 Table Timer 16 in (Sec) rting Docu ments >= 5 Counts	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
				Disab Condition		TCM: P0716, P0717, P0722, P0723, P182E		
						ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Mode 2 Multiplex Valve	P0756	Shift Solenoid Valve B Stuck Off	Fail Case 1 Commanded Gear	= 1st Locked				One Trip
			Gear Box Slip	>= 400 RPM			Pleas e Refer to Neutral Timer (Sec) rting Docu ments	
			Intrusive Shift to 2nd Commanded Gear Previous Gear Ratio Gear Ratio	= 1st Locked Gear <= 2.482177734				
			If the above parameters are true		lanitian Vallaga I.a	0.50004 \/-14-	>= 1 sec >= 3 counts	
					Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the	<= 31.999 Volts >= 400 RPM <= 7500 RPM		
					allowable limits for Output Speed OR TPS	>= 0 RPM		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
				Disable Conditions	: DTC's:	>= -6.65625 °C = TRUE Boolean = TRUE Boolean = FALSE Boolean = FALSE Boolean = TRUE		
Variable Bleed Solenoid (VBS)	P0776	Pressure Control (PC) Solenoid B Stuck Off [C35R]	Fail Case Case: Steady State 3rd 1 Gear Commanded Gear	п			Pleas e Refer to	One Trip
			Gearbox Slip Intrusive Test: Command 4th Gear				Table 5 in Suppo rting Docu ments	

SECTION 1 - Common 1 OF 2 SECTIONS

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

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
				Disable Conditions:		= TRUE Boolean = TRUE Boolean >= 0 RPM >= 0 RPM >= 16 RPM >= 0.50049 Pct >= 8.59961 Volts <= 31.999 Volts >= 400 RPM <= 7500 RPM >= 5 Sec = TRUE Boolean = TRUE TRUE TCM: P0716, P0717, P0722, P0723, P182E ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207,		
Variable Bleed Solenoid (VBS)	P0777	Pressure Control (PC) Solinoid B Stuck On [C35R] (Steady State)	<u>Fail Case</u> 1 Case: Steady State 1st			P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		One Trip

MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
Attained Gear slip If the Above is True for Time	>= 400 RPM Table Based Time Please >= Refer to Table 4 in supporting documents Enable Time (Sec)				
				Fail	
				>= 1.1 Timer (Sec)	
<u>Fail Case</u> Case: Steady State 2nd 2 gear	Table Based value Please			Total >= 3 Fail Counts	
Hysteresis	>= Refer to 3D Table 1 in supporting documents Table Based value Please				
Hysteresis If the Above is True for	Table 2 in supporting documents Table Based Time Please				
	Intrusive test: (CBR1 clutch exhausted) Gear Ratio Gear Ratio If the above parameters are true Fail Case 2 Case: Steady State 2nd 2 gear Max Delta Output Speed Hysteresis Min Delta Output Speed Hysteresis	Intrusive test: (CBR1 clutch exhausted) Gear Ratio Gear Ratio If the above parameters are true Fail Case Case: Steady State 2nd gear Table Based value Please Refer to 3D Table 1 in supporting documents Table Based value Please Refer to 3D Table 1 in supporting documents Table Based value Please Refer to 3D Table 1 in supporting documents Table Based value Please Refer to 3D Table 1 in supporting documents Table Based value Please Refer to 3D Table 1 in supporting documents Table Based value Please Refer to 3D Table 1 in supporting documents Table Based value Please Refer to 3D Table 1 in supporting documents Table Based value Please Refer to 3D Table 1 in supporting documents Table Based value Please Refer to 3D Table 1 in supporting documents Table Based value Please Refer to 3D Table 1 in supporting documents Table Based value Please Refer to 3D Table 1 in supporting documents Table Based value Please Refer to 3D Table 1 in supporting documents Table Based value Please Refer to 3D Table 1 in supporting documents Table Based value Please Refer to 3D Table 1 in supporting documents Table Based value Please Refer to 3D Table 1 in supporting documents Table Based value Please Refer to 3D Table 1 in supporting documents Table Based value Please Refer to 3D Table 1 in supporting documents Table Based value Please Refer to 3D Table 1 in supporting documents Table Based value Please Refer to 3D Table 1 in supporting documents Table Based value Please Refer to 3D Table 1 in supporting documents Table Based value Please	Intrusive test (CBR1 clutch exhausted) Gear Ratio Gear Ratio Gear Ratio If the above parameters are true Fall Case Gear Ratio If the above parameters are true Fall Case Case: Steady State 2nd gear Table Based value Please Hysteresis Fall Case Max Delta Output Speed Hysteresis Min Delta Output Speed Hysteresis Min Delta Output Speed Hysteresis Min Delta Output Speed Hysteresis If the Above is True for Time Time Refer to Table Table Based Table Based Table 2 in prm/sec supporting documents Table Based Table Based Table Based Table Based Sec	Intrusive test: (CBR1 clutch exhausted) Gear Ratio Gear Ratio Gear Ratio Tif the above parameters are true Eall Case Case: Steady State 2nd gear Table Based value Please Max Delta Output Speed Hysteresis Min Delta Output Speed Hysteresis Min Delta Output Speed Hysteresis If the Above is True for Time If the Above is True for Time If the Above is True for Time Refer to Table Table Based Table Based Table Based Table Based Table Based Table Based Value Please Refer to 3D Table 2 in supporting documents Table Based Table Based Table Based Table Based Table Based Value Please Refer to 3D Table 2 in supporting Sec. Sec. Table Based Time Please Refer to Table Table Based Time Please Refer to 3D Table 2 in supporting Sec. Sec. Table Based Time Please Refer to 3D Table 2 in supporting	Intrusive test. (CBR1 clutch exhausted) Gear Ratio <= 1.608642578 Gear Ratio >= 1.45544336 If the above parameters are true Fail

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			Intrusive test: (CB26 clutch exhausted) Gear Ratio Gear Ratio If the above parameters are true	<= >=	1.608642578 1.455444336			Fail >= 1.1 Timer (Sec) Fail Count in 2nd Gear or	
			Fail Case Case: Steady State 4th 3 gear Max Delta Output Speed Hysteresis	\-	Table Based value Please Refer to 3D Table 1 in supporting documents Table Based			Total >= 3 Fail Counts	
			Min Delta Output Speed Hysteresis	>=	value Please Refer to 3D Table 2 in supporting documents Table Based Time Please				
			If the Above is True for Time Intrusive test: (C1234 clutch exhausted))=	Refer to Table 17 in Supporting documents				
			Gear Ratio Gear Ratio Gear Ratio If the above parameters are true	<= >=	0.89465332 0.809448242				

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

	TIME REQUIRED	MIL ILLUM.
PRNDL State defaulted		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD	VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
						Disable Conditions:	DTC's:	TCM: P0716, P0717, P0722, P0723, P182E ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201,		
								P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Variable Bleed Solenoid (VBS)	P0777	Pressure Control (PC) Solenoid B StuckOn [C35R] (Dymanic)	Primary Offgoing Clutch is exhausted (See Table 12 in Supporting Documents for Exhaust Delay Timers)		TRUE	Boolean				One Trip
			Primary Oncoming Clutch Pressure Command Status	=	Maximum pressurized					
			Primary Offgoing Clutch Pressure Command Status	=	Clutch exhaust command					
			Range Shift Status	≠	Initial Clutch Control					
			Attained Gear Slip	<=	40	RPM				
			If the above conditions are true run appropriate Fail 1 Timers Below:							
			fail timer 1 (3-1 shifting with Closed Throttle)	>=	0.5	Fail Time (Sec)				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD V	/ALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			fail timer 1 (3-2 shifting with Throttle)	>=		Fail Time (Sec)				
			fail timer 1 (3-2 shifting with Closed Throttle)	>=	115	Fail Time (Sec)				
			fail timer 1 (3-4 shifting with Throttle)	>=	0.299804688	Fail Time (Sec)				
			fail timer 1 (3-4shifting with Closed Throttle)	>=	0.5	Fail Time (Sec)				
			fail timer 1 (3-5 shifting with Throttle)	>=	0.299804688	Fail Time (Sec)				
			fail timer 1 (3-5 shifting with Closed Throttle)	>=		Fail Time (Sec)				
			fail timer 1 (5-3 shifting with Throttle)	>=		Fail Time (Sec)				
			fail timer 1 (5-3 shifting with Closed Throttle)	>=		Fail Time (Sec)				
			fail timer 1 (5-4 shifting with Throttle)	>=	0.299804688	Fail Time (Sec)				
			fail timer 1 (5-4 shifting with Closed Throttle)	>=		Fail Time (Sec)				
			fail timer 1 (5-6 shifting with Throttle)	>=	0.299804688	Fail Time (Sec)				
			fail timer 1 (5-6 shifting with Closed Throttle)	>=		Fail Time (Sec)				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			If Attained Gear Slip is Less than Above Cal Increment Fail Timers				Total Fail Fail Time = (Fail 1 + Fail 2) See Enabl e Timer s for >= Fail sec Timer 1, and Refer ence Suppo rting Table 15 for Fail Timer	
			If fail timer is greater than threshold increment corresponding gear fail counter and total fail counter				2	
			3rd gear fail counter				3rd >= 3 gear fail counts OR	
			5th gear fail counter				5th >= 3 gear fail counts	
			Total fail counter				OR >= 5 total fail counts	
					TUT Enable temperature Input Speed Sensor fault Output Speed Sensor fault Command / Attained Gear High Side Driver ON	= FALSE Boolean = FALSE Boolean ≠ 1st Boolean		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					output speed limit for TUT input speed limit for TUT PRNDL state defaulted IMS Fault Pending Service Fast Learn Mode HSD Enabled Default Gear Option is not present	>= 150 RPM = FALSE Boolean = FALSE Boolean = FALSE Boolean = TRUE Boolean = TRUE		
				Disable Conditions:		TCM: P0716, P0717, P0722, P0723, P182E		
						ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Variable Bleed Solenoid (VBS)	P0796	Pressure Control (PC) Solenoid C Stuck Off [C456] (Steady State)	Fail Case Case: Steady State 4th 1 Gear Gear Slip				Pleas e See Table Neutral >= 5 For Neutr Al (Sec)	One Trip
			Intrusive test: commanded 5th qear If attained Gear ≠5th for time if the above conditions have been met	Table Based Time Please >= Refer to Table 3 in supporting documents Table Based Enable Time (Sec)			Time Cal	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			Increment 4th Gear Fail Counter				4th Gear Fail Count OR	
			and C456 Fail Counters Fail Case Case: Steady State 5th				C456 >= 14 Fail Counts	
			2 Gear Slip	>= 400 RPM			Pleas e See Table Table >= 5 For Neutral Timer (Sec)	
			Intrusive test: commanded 6th gear If attained Gear ≠ 6th for time	Table Based			Cal	
			if the above conditions have been met Increment 5th Gear Fail Counter				5th >= 3 Gear Fail Count OR	
			and C456 Fail Counters				C456 >= 14 Fail Counts	
			<u>Fail Case</u> Case: Steady State 6th <u>3</u> Gear Gear slip	>= 400 RPM			Pleas e See Table 5 For Neutral 7 Timer (Sec) Time	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENA	BLE CON	DITIONS	TIME REQUIRED		MIL ILLUM.
			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	Table Based Time Please Refer to Table 3 in supporting documents Enable Time (Sec)					>= 3	6th Gear Fail Count OR C456 Fail Counts	
					PRNDL State defaulted inhibit RVT IMS fault pending indication TPS validity flag Hydraulic System Pressurized Minimum output speed for RVT A OR B (A) Output speed enable	= = =	FALSE	Boolean Boolean Boolean Boolean RPM			
					(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 is within the allowable limits for Throttle Position Signal valid	>= >= <= >= <= >=	0.50049 8.59961 31.999 400 7500 5 TRUE	Pct Volts Volts RPM RPM Sec Boolean			
					HSD Enabled Transmission Fluid Temperature Input Speed Sensor fault OutputSpeed Sensor fault	= >=	TRUE -6.65625 FALSE	Boolean			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Default Gear Option is not present	= TRUE		
				Disable Conditions:		TCM: P0716, P0717, P0722, P0723, P182E		
						ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Variable Bleed Solenoid (VBS)	P0797	Pressure Control (PC) Solenoid C Stuck On [C456] (Steady State)	Fail Case Case: Steady State 1st	400				One Trip
			Attained Gear slip If the Above is True for Time	Table Based				
			Intrusive test: (CBR1 clutch exhausted) Gear Ratio					
			Gear Ratio If the above parameters are true	>= 1.094360352			Fail	
							>= 1.1 Timer (Sec)	

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

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

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENA	BLE CON	DITIONS	TIME REQUIRED	MIL ILLUM.
					Minimum output speed for RVT A OR B	>=	0	Nm		
					(A) Output speed enable		16	Nm		
					(B) Accelerator Pedal enable	>=	0.50049	Nm		
					Ignition Voltage Lo	>=	8.59961	Volts		
					Ignition Voltage Hi		31.999	Volts		
					Engine Speed Lo		400	RPM		
					Engine Speed Hi Engine Speed is within the		7500	RPM		
					allowable limits for	>=	5	Sec		
					if Attained Gear=1st FW Accelerator Pedal enable	>=	5.00031	Pct		
					if Attained Gear=1st FW Engine Torque Enable	>=	5	Nm		
					if Attained Gear=1st FW Engine Torque Enable	<=	8191.88	Nm		
					Transmission Fluid Temperature		-6.65625	°C		
					Input Speed Sensor fault		FALSE	Boolean		
					Output Speed Sensor fault	=	FALSE	Boolean		
					Default Gear Option is not present	=	TRUE			
				Disable Conditions:	MIL not Illuminated for DTC's:		P0716, P0 2, P0723, F			
						P0103 P0108	P0101, P0 3, P0106, F 8, P0171, F	P0107, P0172,		
						P0202 P0203 P0208	4, P0175, F 2, P0203, F 5, P0206, F 8, P0300, F	P0204, P0207, P0301,		
						P030	2, P0303, F 5, P0306, F 8, P0401, F	² 0307,		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE			SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
Variable Bleed Solenoid (VBS)	P0797	Pressure Control (PC) Solenoid C Stuck On [C456] (Dynamic)	Primary Offgoing Clutch is exhausted (See Table 11 in Supporting Documents for Exhaust Delay Timers)	=	TRUE	Boolean				One Trip
			Primary Oncoming Clutch Pressure Command Status	=	Maximum pressurized					
			Primary Offgoing Clutch Pressure Command Status	=	Clutch exhaust command					
			Range Shift Status Attained Gear Slip		Initial Clutch Control 40	RPM				
			If the above conditions are true increment appropriate Fail 1 Timers Below:							
			fail timer 1 (4-1 shifting with throttle)	>=	0.299804688	Fail Time (Sec)				
			fail timer 1 (4-1 shifting without throttle)	>=	0.5	Fail Time (Sec)				
			fail timer 1 (4-2 shifting with throttle)	>=	0.299804688	Fail Time (Sec)				
			fail timer 1 (4-2 shifting without throttle)	>=		Fail Time (Sec)				
			fail timer 1 (4-3 shifting with throttle)	>=		Fail Time (Sec)				
			fail timer 1 (4-3 shifting without throttle)	>=	0.5	Fail Time (Sec)				
			fail timer 1 (5-3 shifting with throttle)	>=		Fail Time (Sec)				
			fail timer 1 (5-3 shifting without throttle)	>=	0.5	Fail Time (Sec)				
			fail timer 1 (6-2 shifting with throttle)	>=	0.299804688	Fail Time (Sec)				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			fail timer 1 (6-2 shifting without throttle) If Attained Gear Slip is Less than Above Cal Increment Fail Timers	(GEC)			Total Fail Time = (Fail 1 + Fail 2) See Enabl e Timer s for >= Fail sec Timer 1, and Refer ence Suppo rting Table 15 for Fail	
			If fail timer is greater than threshold increment corresponding gear fail counter and total fail counter				Timer 2 Fail	
			4th gear fail counter				Counter >= 3 From 4th Gear OR Fail	
			5th gear fail counter				Counter >= 3 From 5th Gear OR	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRI	ESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			6th gear fail counter					Fail Counter >= 3 From 6th Gear OR	
			Total fail counter					Total >= 5 Fail Counter	
						TUT Enable temperature Input Speed Sensor faul Output Speed Sensor faul Command / Attained Geal High Side Driver ON output speed limit for TUT input speed limit for TUT PRNDL state defaulted IMS Fault Pending	t = FALSE Boolean t = FALSE Boolean f ≠ 1st Boolean l = TRUE Boolean >= 100 RPM >= 150 RPM t = FALSE Boolean		
					Disal Condition	Service Fast Learn Mode HSD Enabled	= FALSE Boolean = TRUE Boolean		
							ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Tap Up Tap Down Switch (TUTD)	P0815	Upshift Switch Circuit	Fail Case Tap Up Switch Stuck in the Up Position in Range 1 Enabled Tap Up Switch Stuck in	=	0 Boolean				Special No Trip
			the Up Position in Range 2 Enabled	=	0 Boolean				

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

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALF	UNCTION CRITERIA	1	HRESHOLI	D VALUE	SECONDARY PARAMETERS	ENABLE	COND	ITIONS	TIME REQ	UIRED	MIL ILLUM.
				Tap Up Switch Stuck in the Up Position in Park Enabled Tap Up Switch Stuck in	=	0	Boolean							
				the Up Position in Reverse Enabled		0	Boolean							
				Tap Up Switch ON	=	TRUE	Boolean							
				NOTE: Both Failcase1 and Failcase 2 Must Be Met								>= 600	Fail Time (Sec)	
								Time Since Last Range Change	>=	1	Enable Time (Sec)			
								Ignition Voltage Lo		59961	Volts			
								Ignition Voltage Hi		1.999	Volts			
								Engine Speed Lo Engine Speed Hi		100 500	RPM RPM			
								Engine Speed is within the		5	Sec			
								allowable limits for P0815 Status is	Fa Thi ≠ O F	Test ailed is Key on or ault ctive				
							Disable Conditions:		TCM: P08 P182E, P1 P1915, P ¹ ECM: Non	1876, P1 1761				
Tap Up Tap Down			Fail Case	Tap Down Switch Stuck										Special No Trip
Switch (TUTD)	P0816	Downshift Switch Circuit	<u>1</u>	in the Down Position in Range 1 Enabled Tap Down Switch Stuck	=	0	Boolean							
				in the Down Position in Range 2 Enabled	=	0	Boolean							
				Tap Down Switch Stuck in the Down Position in Range 3 Enabled	=	0	Boolean							

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

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOL	D VALUE	SECONDARY PARAMETERS	ENA	BLE CON	DITIONS	TIME	REQU	JIRED	MIL ILLUM.
			Tap Down Switch Stuck in the Down Position in Reverse Enabled Tap Down Switch ON NOTE: Both Failcase1 and Failcase 2 Must Be Met	=	0 TRUE	Boolean Boolean					>=	600	sec	
							Time Since Last Range Change	/-	1	Enable Time (Sec)				
							Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo		8.59961 31.999 400	Volts Volts RPM				
							Engine Speed Hi Engine Speed is within the allowable limits for	>=	7500 5 Test Failed	RPM Sec				
							P0816 Status is	≠	This Key On or Fault Active					
						Disable Conditions:	MIL not Illuminated for DTC's:	P182	P0815, P0 E, P1876, F 5, P1761					
								ECM:	None					
Tap Up Tap Down Switch (TUTD)	P0826	Up and Down Shift Switch Circuit	TUTD Circuit Reads Invalid Voltage	=	TRUE	Boolean					>=	60	Fail Time (Sec)	Special No Trip
							Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi	<= >=	8.59961 31.999 400 7500	Volts Volts RPM RPM				
							Engine Speed is within the allowable limits for	>=	5	Sec				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLI) VALUE	SECONDARY PARAMETERS	ENA	BLE COND	ITIONS	TIME REQUIRE	ED.	MIL ILLUM.
							P0826 Status is	≠	Test Failed This Key On or Fault Active				
						Disable Conditions			P1761 None				
Transmission Fluid Pressure Switch	P0872	Transmission Fluid Pressure (TFP) Sensor C Circuit Low Voltage	CB26 Hydraulic pressure Hydraulic Delay Timer (Table Based)	<= >=	50 See Table 8 f Delay Timer Cal								Special No Trip
			Check for Switch to be in Exhausted Position after delay, If so then Increment Fail Counter								>= 10	ail unts	
			Note: Subsequent fail counts require CB26 pressure above this value to re-enable fail logic. Results in one fail count per clutch transition	>	50	Кра							
							Transmission Fluid Temperature Lo Transmission Fluid Temperature Hyst Hi (disable above this)	>= Not >=	-6.65625 120	°C			
							Transmission Fluid Temperature Hyst Lo (enable below this) Ignition Voltage Lo	>=	255.992 8.59961	°C Volts			
							Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the	>= <=	31.999 400 7500 5	Volts RPM RPM Sec			
							allowable limits for Default Gear Action High Side Driver ON	=	FALSE TRUE	360			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD	VALUE	SECONDARY PARAMETERS	ENA	BLE COND	DITIONS	TIME REG	QUIRED	MIL ILLUM.
							RVT Status	=	Normal				
							Hydraulic Pressure Available	=	TRUE				
							Engine Speed Min	>=	550	RPM			
						Disable Conditions:	DTC's:	P0713 P0722 P0742 P0973 P0977	3, P0716, P0 2, P0723, P0 2, P0756, P0 3, P0974, P0 7, P1915, P	0717, 0751, 0757, 0976,			
								ECM:	None				
Transmission Fluid Pressure Switch	P0873	Transmission Fluid Pressure (TFP) Sensor C Circuit High Voltage	CB26 Hydraulic Pressure		700	KPa							Special No Trip
			Hydraulic Delay Timer (Table Based)	\-	See Table 8 fo Delay Timer Cal								
			Check for Switch to be in Pressurized Position after delay, If so then Increment Fail Counter								>= 15	Fail Counts	
			Note: Subsequent fail counts require CB26 pressure below this value to re-enable fail logic. Results in one fail count per clutch transition	<	700	kpa							
							Transmission Fluid Temperature Lo Transmission Fluid Temperature Hyst Hi (disable	Not	-6.65625 120	°C			
							above this) Transmission Fluid Temperature Hyst Lo (enable below this)		255.992	°C			
							Ignition Voltage Lo	>=	8.59961	Volts			
							Ignition Voltage Hi		31.999	Volts			
							Engine Speed Lo		400	RPM			
							Engine Speed Hi Engine Speed is within the		7500	RPM			
							allowable limits for	>=	5	Sec			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD	VALUE	SECONDARY PARAMETERS	ENA	ABLE CON	DITIONS	TIME REG	QUIRED	MIL ILLUM.
							Default Gear Action High Side Driver ON RVT Status Hydraulic Pressure Available	=	FALSE TRUE Normal TRUE				
						Disable Conditions:	DTC's:	TCM: P071: P072: P074: P097:	550 P0711, P0 3, P0716, F 2, P0723, F 2, P0756, F 3, P0974, F 7, P1915, F	20717, 20751, 20757, 20976,			
Transmission Fluid		Transmission Fluid Pressure	C1234 Hydrauliq					ECM:	None				Special No Trip
Pressure Switch	P0877	(TFP) Sensor D Circuit Low Voltage	Hydraulic Delay Timer (Table Based) Check for Switch to be in Exhausted Position after	<= >=	50 See Table 6 fo Delay Timer Cal						>= 5	Fail Counts	
			Increment Fail Counter Note: Subsequent fail counts require C1234 pressure above this value to re-enable fail logic. Results in one fail count per clutch transition	>	50	kpa						Couris	
							Transmission Fluid Temperature Lo Transmission Fluid Temperature Hyst Hi (disable above this) Transmission Fluid Temperature Hyst Lo (enable below this)	>= Not >= <=	-6.65625 120 255.992	°°°°°°°°°°°°°°°°°°°°°°°°°°°°°°°°°°°°°°			
							Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo	<=	8.59961 31.999 400	Volts Volts RPM			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD	VALUE	SECONDARY PARAMETERS	ENA	BLE COI	NDITIONS	TIME RE	QUIRED	MIL ILLUM.
Transmission Fluid		Transmission Fluid Pressure	C1234 Hydraulic			Disable Conditions:		>= = = = = >= TCM: P0713 P0722 P0742 P0977	7500 5 FALSE TRUE Normal TRUE 550 P0711, P 3, P0716, 2, P0723, 2, P0756, 3, P0974, 7, P1915, None	RPM 0712, P0717, P0751, P0757, P0976,			Special No Trip
Pressure Switch	P0878	(TFP) Sensor D Circuit High Voltage	Hydraulic Delay Timer (Table Based) Check for Switch to be in Pressurized Position after delay, If so then Increment Fail Counter Note: Subsequent fail counts require C1234 pressure below this value to re-enable fail logic. Results in one fail count per clutch transition	\" \" \" \" \" \" \" \" \" \" \" \" \" \	700 See Table 6 fo Delay Timer Cal						>= 6	Fail Counts	
							Transmission Fluid Temperature Lo Transmission Fluid Temperature Hyst Hi (disable above this) Transmission Fluid Temperature Hyst Lo (enable below this) Ignition Voltage Lo	>=	-6.65629 120 255.992 8.59961 31.999	°C °C Volts			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOL	D VALUE	SECONDARY PARAMETERS	ENABLE (CONDITIONS	TIME	REQU	IRED	MIL ILLUM.
					Disable Conditions:	DTC's:	<= 75 >= 5 = FAL = TR = Nor = TR >= 55 TCM: P071 P0713, P07	00 RPM 5 Sec SE UE mal UE 50 RPM 1, P0712, 716, P0751, 723, P0751, 756, P0757, 774, P0976, 915, P182E				
Variable Bleed Solenoid (VBS)	P0961	Pressure Control (PC) Solenoid A Control Circuit Rationality Test (Line Pressure VBS)	The HWIO reports an invalid voltage (out of range) error flag	= TRUE	Boolean	Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable limits for	<= 31.9 >= 40 <= 75 >= 8	999 Volts 00 RPM	>= out of		Fail Time (Sec) Sample Time (Sec)	Two Trips
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None					
Variable Bleed Solenoid (VBS)	P0962	Pressure Control (PC) Solenoid A Control Circuit Low Voltage (Line Pressure VBS)	The HWIO reports a low voltage (ground short) error flag	= TRUE	Boolean				>=		Fail Time (Sec) Sample Time (Sec)	One Trip

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLI	O VALUE	SECONDARY PARAMETERS	ENA	BLE CON	DITIONS	TIME	REQU	UIRED	MIL ILLUM.
						Ignition Voltage		31.999	Volts				
						Engine Speed		400	RPM				
						Engine Speed		7500	RPM				
						Engine Speed is within the allowable limits for	>=	5	Sec				
					Disable	MIL not Illuminated for	TCM:	None					
					Conditions:	DTC's:	ECM:	None					
Variable Bleed Solenoid (VBS)	P0963	Pressure Control (PC) Solenoid A Control Circuit High Voltage (Line Pressure VBS)	The HWIO reports a high voltage (open or power short) error flag		Boolean					>=	4.4	Fail Time (Sec)	Two Trips
		(,							out of	5	Sample Time (Sec)	
						Ignition Voltage	>=	8.59961	Volts				
						Ignition Voltage	<=	31.999	Volts				
						Engine Speed	>=	400	RPM				
						Engine Speed		7500	RPM				
						Engine Speed is within the allowable limits for	>=	5	Sec				
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: ECM:						
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		Boolean					>=	0.3	Fail Time (Sec)	One Trip
										out of	0.375	Sample Time (Sec)	
						Ignition Voltage		8.59961	Volts				
						Ignition Voltage	<=	31.999	Volts				
						Engine Speed		400	RPM				
						Engine Speed		7500	RPM				
						Engine Speed is within the allowable limits for	>=	5	Sec				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHO	LD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
						P0966 Status is not	Test Failed This Key On or Fault Active		
					Disable Conditions:		TCM: None ECM: None		
Variable Bleed Solenoid (VBS)	P0967	Pressure Control (PC) Solenoid B Control Circuit High Voltage (C35R VBS)	The HWIO reports a high voltage (open or power short) error flag	= TRUE	Boolean			Fail >= 0.3 Time (Sec) Sample	One Trip
								out of 0.375 Time (Sec)	
						Ignition Voltage			
						Ignition Voltage			
						Engine Speed			
						Engine Speed			
						Engine Speed is within the allowable limits for	Test		
						P0967 Status is not	Failed This Key On or Fault Active		
					Disable Conditions:		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			Fail >= 0.3 Time (Sec)	One Trip
								Sample out of 0.375 Time (Sec)	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					P0970 Status is not	Test Failed This Key On or Fault Active		
					Ignition Voltage	>= 8.59961 Volts		
					Ignition Voltage	<= 31.999 Volts		
					Engine Speed			
					Engine Speed			
					Engine Speed is within the allowable limits for	>= 5 Sec		
				Disable Conditions:	DTC's:	TCM: None		
Variable Bleed Solenoid (VBS)	P0971	Pressure Control (PC) Solenoid C Control Circuit High Voltage (C456/CBR1 VBS)	The HWIO reports a high voltage (open or power short) error flag	= TRUE Boolean			>= 0.3 Time (Sec) Sample out of 0.375 Time (Sec)	One Trip
					P0971 Status is not	Test Failed This Key On or Fault Active	(666)	
					Ignition Voltage			
					Ignition Voltage			
					Engine Speed			
					Engine Speed			
					Engine Speed is within the allowable limits for	>= 5 Sec		
				Disable Conditions:	DTC's:	TCM: None ECM: None		

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

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOL	O VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None		
Mode 3 Multiplex Valve	P0976	Shift Solenoid BControl Circuit Low (Mode 3 Solenoid)	The HWIO reports a low voltage (ground short) error flag	= TRUE	Boolean			>= 1.2 Sec	Two Trips
						P0976 Status is not Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable limits for	>= 8.59961 Volts <= 31.999 Volts >= 400 RPM <= 7500 RPM	out of 1.5 Sec	
					Disable Conditions:	DTC's:	TCM: None ECM: None		
Mode 3 Multiplex Valve	P0977	Shift Solenoid B Control Circuit High (Mode 3 Solenoid)	The HWIO reports a high voltage (open or power short) error flag	= TRUE	Boolean			>= 1.2 Sec	One Trip
						P0977 Status is not	Test Failed This Key On or Fault Active	out of 1.5 Sec	-
						Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable limits for	>= 8.59961 Volts <= 31.999 Volts >= 400 RPM <= 7500 RPM		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLI) VALUE	SECONDARY PARAMETERS	ENA	BLE COND	DITIONS	TIME REQUIR	ED	MIL ILLUM.
						Disable Conditions:	DTC's:		None None				
Transmission Fluid Pressure Switch	P0989	Transmission Fluid Pressure (TFP) Sensor E Circuit Low Voltage	CBR1/C456 Hydraulic pressure	<=	50	Кра							Special No Tri
			Hydraulic Delay Timer (Table Based)	>=	See Table 9 for Delay Timer Cal								
			Check for Switch to be in Exhausted Position after delay, If so then Increment Fail Counter									Fail ounts	
			Note: Subsequent fail counts require C35R pressure above this value to re-enable fail logic. Results in one fail count per clutch transition	>	50	kpa							
							Transmission Fluid Temperature Lo	>=	-6.65625	°C			
							Transmission Fluid Temperature Hyst Hi (disable above this)	Not >=	120	°C			
							Transmission Fluid Temperature Hyst Lo (enable below this)	<=	255.992	°C			
							Ignition Voltage Lo Ignition Voltage Hi		8.59961 31.999	Volts Volts			
							Engine Speed Lo		400	RPM			
							Engine Speed Hi		7500	RPM			
							Engine Speed is within the allowable limits for	>=	5	Sec			
							Default Gear Action		FALSE				
							High Side Driver ON		TRUE				
							RVT Status		Normal				
							Hydraulic Pressure Available	=	TRUE				
							Engine Speed Min	>=	550	RPM			

	DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			Disable Conditions:	DTC's:	TCM: P0711, P0712, P0713, P0716, P0717, P0722, P0723, P0751, P0742, P0756, P0757, P0973, P0974, P0976, P0977, P1915, P182E ECM: None		
Transmission Fluid Pressure Switch	Transmission Fluid Pressure (TFP) Sensor E Circuit High Voltage	CBR1/C456 Hydraulic pressure Hydraulic Delay Timer (Table Based) Check for Switch to be in Pressurized Position after delay, If so then Increment Fail Counter Note: Subsequent fail counts require C35R pressure above this value to re-enable fail logic. Results in one fail count per clutch transition	See Table 9 for >= Delay Timer Sec Cal	Transmission Fluid Temperature Lo Transmission Fluid Temperature Hyst Hi (disable above this) Transmission Fluid Temperature Hyst Lo (enable below this) Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed Hi	>= -6.65625 °C Not	>= 15 Fail >= 15 Counts	Special No Trip

SECTION 1 - Common 1 OF 2 SECTIONS

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLI	VALUE	SECONDARY PARAMETERS	ENAE	BLE CON	IDITIONS	TIME	REQ	UIRED	MIL ILLUM.
						Hydraulic Pressure Available Engine Speed Min		TRUE 550	RPM				
					Disable Conditions:		P0713 P0722 P0742 P0973	, P0716, , P0723, , P0756, , P0974, , P1915,	P0717, P0751, P0757, P0976,				
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		LOW. 1	vone		>=	3	Fail Counte	Special No Trip
										>	10	Sample Timer (Sec)	
						Tap Up Tap Down Message Health Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for	_	TRUE 400 7500 5	Boolean RPM RPM Sec				
					Disable Conditions:	DTC's:	TCM: N						
Mode Switch	P1762	Transmission Mode Switch Signal Circuit (rolling count)	Rolling count value received from BCM does not match expected value	= TRUE	Boolean					>=	3	Fail Counte	Special No Trip
										>	10	Sample Timer (Sec)	
						Pattern Switch Message Health Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for	<= >=	TRUE 400 7500 5	Boolean RPM RPM Sec				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD	VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None		
Internal Mode Switch (IMS)	P182E	Internal Mode Switch - Circuit A Low Reported as Internal Mode Switch-Invalid Range	Fail Case 1 Current range	=	'	Range State				One Trip
			Previous range Previous range	≠ ≠	CeTRGR_e_P RNDL Drive6 CeTRGR_e_P RNDL Drive4	Range State Range State				
			Either the S1 or S3 Pressure Switch indicates "Pressure Present"	=	TRUE	Boolean				
			Engine Torque Engine Torque	>= <=		Nm Nm				
			If the above conditions are present Increment Fail Timer						Fail >= 0.225 Second s	
			If Fail Timer has Expired then Increment Fail Counter						>= 15 Fail Counts	
			Fail Case Current range 2 S3 Pressure Switch indicates "Exhausted" Commanded Gear	= =	TRUE	Range State Boolean Gear				
			If the above conditions are present Increment Fail Timer						Fail >= 0.225 Second s	
			If Fail Timer has Expired then Increment Fail Counter						>= 15 Fail Counts	
			Fail Case 3 Current range	=	"Transitional 13"		Previous range	CeTRGR ≠ _e_PRN DL_Drive 1		
			Either the S1 or S3 Pressure Switch indicates "Pressure Present"	=	TRUE	Boolean	Previous range	CeTRGR		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD	VALUE	SECONDARY PARAMETERS	ENABLE C	ONDITIONS	TIME REQUIRED	MIL ILLUM.
			Engine Torque	>=	-8192	Nm	IMS is 7 position configuration If the "IMS 7 Position config"	= 1	Boolean		
			Engine Torque	<=	8191.75	Nm	= 1 then the "previous range" criteria above must also be satsified when the "current range" = "Transitional 13"				
			If the above conditions are present Increment Fail Timer							>= 0.225 Second s	
			If Fail Timer has Expired then Increment Fail Counter				Disable Fail Core 4 if last			>= 15 Fail Counts	
			Fail Case 4 Current range	=	"Transitional 2" or "Transitional 8		Disable Fail Case 4 if last positive range was Drive 6 and current range is transitional 8				
			Inhibit bit (see definition)	=	FALSE		Set inihibit bit true if PRNDL = 1100 (rev) or 0100 (Rev- Neu transitional) Set inhibit bit false if PRNDL = 1001 (park)				
			Either the S1 or S3 Pressure Switch indicates "Pressure Present"	=	TRUE	Boolean					
			Steady State Engine Torque		100	Nm					
			Steady State Engine Torque If the above conditions	`-	8191.75	Nm					
			are present Increment Fail Timer							>= 0.225 Second s	
			If the above Condtions have been met, Increment Fail Counter							>= 15 Fail Counts	
			Fail Case Current range		"Transitional 11"						
			Engine Torque Either the S1 or S3 Pressure Switch indicates "Pressure Present"		-50 TRUE	Nm Boolean					
			If the above conditions are present Increment Fail Timer							>= 0.225 Second s	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			If the above Condtions have been met, Increment Fail Counter				>= 15 Fail Counts	
			<u>Fail Case</u> <u>6</u> Current range	= "Illegal"	A Open Circuit Definition (flag set false if the following conditions are met):			
			and A Open Circuit (See	541.05	Current Range	nai 11"		
			Definition)	= FALSE Boolean	or Last positive state or			
					Previous transitional state	Illegal		
					and PRNDL Circuit A	Onen		
					PRNDL Circuit B	= Closed Circuit		
					PRNDL Circuit C PRNDL Circuit P	Circuit		
			If the above Condtions are present, Increment Fail timer				>= 6.25 Second	
			Fail Case 7 Current PRNDL State	= PRNDL circuit ABCP = 1101				
			and Previous valid state	= PRNDL circuit ABCP =1111 Range				
			Input Speed Reverse Trans Ratio Reverse Trans Ratio	<= 2.845825195 ratio				
			If the above Condtions are present, Increment Fail timer	. 5.217105922 Iduo			>= 6.25 Second	
			P182E will report test fail when any of the above 7 fail cases are met					

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	1	ΓHRESHOLΙ	D VALUE	SECONDARY PARAMETERS	ENAI	BLE CON	DITIONS	TIME REQU	UIRED	MIL ILLUM.
							Ignition Voltage Lo Ignition Voltage Hi Vehicle Speed Lo Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for Engine Torque Signal Valid	<= <= >= <= >=	8.59961 31.999 511 400 7500 5 TRUE	Volts Volts KPH RPM RPM Sec Boolean			
						Disable Conditions:		ECM: P0103 P0108 P0174 P0202 P0205 P0208 P0302 P0305	P0722, P0 P0101, F , P0106, , P0171, , P0175, , P0203, , P0206, , P0300, , P0303, , P0306, , P0306,	P0102, P0107, P0172, P0201, P0204, P0207, P0301, P0304, P0307,			
Internal Mode Switch (IMS)	P1915	Internal Mode Switch Does Not Indicate Park/Neutral (P/N) During Start	PRNDL State is The following events must occur Sequentially	≠ F	ark or Neutr	al Enumeration							One Trip
			Initial Engine speed	<=	50	RPM					>= 0.25	Enable Time (Sec)	
			Engine Speed Between Following Cals Engine Speed Lo Hist	>=	50	RPM							
			Engine Speed Hi Hist	<=	480	RPM					>= 0.069	Enable Time (Sec)	
			Then Final Engine Speed Final Transmission Input		525	RPM						Fail	
			Speed	>=	200	RPM					>= 1.25	Time (Sec)	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLI	O VALUE	SECONDARY PARAMETERS	ENAB	LE CON	DITIONS	TIME REQU	JIRED	MIL ILLUM.
						DTC has Ran this Key Cycle? Ignition Voltage Lo Ignition Voltage Hi Ignition Voltage Hyst High (enables above this value) Ignition Voltage Hyst Low (disabled below this value) Transmission Output Speed	>= <= >= <= <=	FALSE 6 31.999 6 2 90 Test Failed This Key On or Fault Active	Boolean V V V rpm			
					Disable Conditions:	DTC's:	TCM: P		0723			
Transmission Control Module (TCM)	P2534	Ignition Switch Run/Start Position Circuit Low	Run crank active (based on voltage thresholds below)	= FALSE								One Trip
			Ignition Voltage High Hyst (run crank goes true when above this value)	6	Volts					>= 280	Fail Counts (25ms loop)	
			Ignition Voltage Low Hyst (run crank goes false when below this value)	2	Volts					Out of 280	Sample Counts (25ms loop)	
						Normal CAN Comm Enabled ECM run/crank active status		TRUE TRUE	Boolean Boolean			
					Disable Conditions:		TCM: N ECM: N					
Variable Bleed Solenoid (VBS)	P2714	Pressure Control (PC) Solenoid D Stuck Off [CB26]	<u>Fail Case</u> Case: Steady State 2nd 1 Gear									One Trip

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			Gear slip	>=	400 RPM			Pleas e See Table 5 For Neutral Timer (Sec) Time Cal	
			Intrusive test: commanded 3rd gear If attained Gear = 3rd for Time If Above Conditions have	>=	Table Based Time Please see Table 2 in Supporting Documents Enable Time (Sec)			- Cui	
			been met Increment 2nd gear fail					2nd Gear Fail Count or	
			and CB26 Fail Count Fail Case Case: Steady State 6th Gear					CB26 >= 14 Fail Count	
			Gear slip	>=	400 RPM			Pleas e See Table 5 For Neutral Timer (Sec) Time Cal	
			Intrusive test: commanded 5th gear If attained Gear = 5th For Time		Table Based Time Please see Table 2 in Supporting Documents Enable Time (Sec)			- Val	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENAI	BLE CON	DITIONS	TIME	REQU	JIRED	MIL ILLUM.
			If Above Conditions have been met, Increment 5th gear fail counter						>=	3	5th Gear Fail Count	
			and CB26 Fail Count						>=	14	or CB26 Fail Count	
					PRNDL State defaulted			Boolean				
					inhibit RVT IMS fault pending indication			Boolean Boolean				
					TPS validity flag		TRUE	Boolean				
					Hydraulic System		TRUE					
					Pressurized Minimum output speed for RVT	>=	0	Boolean RPM				
					A OR B							
					(A) Output speed enable		16	RPM				
					(B) Accelerator Pedal enable Common Enable Criteria		0.50049	Pct				
					Ignition Voltage Lo		8.59961	Volts				
					Ignition Voltage Hi		31.999	Volts				
					Engine Speed Lo	>=	400	RPM				
					Engine Speed Hi		7500	RPM				
					Engine Speed is within the allowable limits for	>=	5	Sec				
					Throttle Position Signal valid	=	TRUE	Boolean				
					HSD Enabled		TRUE	Boolean				
					Transmission Fluid Temperature	>=	-6.65625	°C				
					Input Speed Sensor fault			Boolean				
					Output Speed Sensor fault Default Gear Option is not present	=	FALSE TRUE	Boolean				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD	VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
						Disable Conditions:		TCM: P0716, P0717, P0722, P0723, P182E		
								ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Variable Bleed Solenoid (VBS)	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 Primary Offgoing Clutch Pressure Command		Maximum pressurized Clutch exhaust command					
			Status Range Shift Status Attained Gear Slip		Initial Clutch Control 40	RPM				
			lf above coditons are true, increment appropriate Fail 1 Timers Below:							
			fail timer 1 (2-1 shifting with throttle)	>=	0.299804688	Fail Time (Sec)				
			fail timer 1 (2-1 shifting without throttle)	>=	0.5	Fail Time (Sec)				
			fail timer 1 (2-3 shifting with throttle)	>=	0.299804688	Fail Time (Sec)				
			fail timer 1 (2-3 shifting without throttle)		0.5	Fail Time (Sec)				

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

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			2nd gear fail counter				Fail Counter >= 3 From 2nd Gear OR	
			6th gear fail counter				Fail Counter >= 3 From 6th Gear OR	
			total fail counter				Total >= 5 Fail Counter	
					TUT Enable temperature Input Speed Sensor fault Output Speed Sensor fault Command / Attained Gear High Side Driver ON output speed limit for TUT input speed limit for TUT PRNDL state defaulted IMS Fault Pending Service Fast Learn Mode HSD Enabled	= FALSE Boolean = FALSE Boolean ≠ 1st Boolean = TRUE Boolean >= 100 RPM >= 150 RPM = FALSE Boolean = FALSE Boolean = FALSE Boolean = FALSE Boolean		
				Disable Conditions:	DTC's:	TCM: P0716, P0717, P0722, P0723, P182E ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
Variable Bleed Solenoid (VBS)	P2715	Pressure Control (PC) Solenoid D Stuck On [CB26] (Steady State)	Fail Case Case: Steady State 1st Attained Gear slip If the Above is True for Time Intrusive test: (CBR1 clutch exhausted) Gear Ratio Gear Ratio If the above parameters are true		4 in supporting (Sec) documents 2.482177734			Fail >= 1.1 Timer (Sec) Fail Count in 1st Gear or Total >= 3 Fail	One Trip
			Fail Case Case: Steady State 3rd 2 Gear Max Delta Output Speed Hysteresis	>=	Table Based value Please Refer to 3D Table 1 in supporting documents			Counts	
			Min Delta Output Speed Hysteresis	>=	Table Based value Please Refer to 3D Table 2 in supporting documents				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			If the Above is True for Time					
			Intrusive test: (C35R clutch exhausted)					
			Gear Ratio Gear Ratio If the above parameters are true	>= 2.245849609				
							Fail >= 1.1 Timer (Sec)	
							Fail Count in 3rd Gear	
							or Total >= 3 Fail Counts	
			Fail Case Case: Steady State 4rd 3 Gear	Table Based				
			Max Delta Output Speed Hysteresis	Table 1 in supporting documents Table Based				
			Min Delta Output Speed Hysteresis	Table 2 in supporting documents Table Based				
			If the Above is True for Time					

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			Intrusive test: (C1234 clutch exhausted) Gear Ratio Gear Ratio If the above parameters are true	<= 0.700317383 >= 0.633666992			Fail >= 1.1 Timer	
							>= 3 (Sec) Fail Count in 4th Gear or Total >= 3 Fail Counts	
			Case: Steady State 5th Case: Steady State 5th Gear Max Delta Output Speed Hysteresis	Table Based value Please Refer to 3D			Count	
			Min Delta Output Speed Hysteresis	value Please Refer to 3D Table 2 in supporting documents Table Based Time Please				
			If the Above is True for Time Intrusive test: (C35R clutch exhausted)	7= 17 in Sec supporting documents				
			Gear Ratio Gear Ratio If the above parameters are true	>= 0.633666992				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENA	BLE CON	DITIONS	TIME REC	QUIRED	MIL ILLUM.
									>= 1.1	Fail Timer (Sec) Fail Count in 5th Gear or	
									>= 3	Total Fail Counts	
					PRNDL State defaulted inhibit RVT IMS fault pending indication	=		Boolean Boolean Boolean			
					output speed TPS validity flag HSD Enabled	>=	0 TRUE TRUE	RPM Boolean Boolean			
					Hydraulic_System_Pressuriz ed Minimum output speed for RVT	= >=	TRUE	Boolean Nm			
					A OR B (A) Output speed enable (B) Accelerator Pedal enable		16 0.50049	Nm Nm			
					Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo	<= >=	8.59961 31.999 400	Volts Volts RPM			
					Engine Speed Hi Engine Speed is within the allowable limits for	<= >=	7500 5	RPM Sec			
					if Attained Gear=1st FW Accelerator Pedal enable if Attained Gear=1st FW Engine Torque Enable	>=	5.00031 5	Pct Nm			
					if Attained Gear=1st FW Engine Torque Enable Transmission Fluid		8191.88	Nm			
					Temperature Input Speed Sensor fault Output Speed Sensor fault	=		°C Boolean Boolean			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
				Disable Conditions:	DTC's:	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,		
Variable Bleed Solenoid (VBS)	P2720	Pressure Control (PC) Solenoid D Control Circuit Low (CB26 VBS)	The HWIO reports a low voltage (ground short) error flag	= TRUE Boolean		P0308, P0401, P042E	>= 0.3 Fail >= 0.3 Time (Sec) Sample out of 0.375 Time (Sec)	One Trip
					P2770 Status is not Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable limits for	Failed This Key On or Fault Active >= 8.59961 Volts <= 31.999 Volts >= 400 RPM <= 7500 RPM		
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	MIL not Illuminated for DTC's:	TCM: None ECM: None	Fail >= 0.3 Time (Sec)	One Trip

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOI	.D VALUE	SECONDARY PARAMETERS	ENABLE CONDITION	S TIME REQUIRED	MIL ILLUM.
								Sample out of 0.375 Time (Sec)	
						P2721 Status is not	Test Failed This Key On or Fault Active		
						Ignition Voltage	>= 8.59961 Volt	3	
						Ignition Voltage			
						Engine Speed Engine Speed			
						Engine Speed is within the	>= 5 Sec		
						allowable limits for	0 00		
					Disable Conditions:				
					Conditions.		ECM: None		
Variable Bleed	P2723	Pressure Control (PC) Solenoid	Fail Case Case: Steady State 1st						One Trip
Solenoid (VBS)	F2123	E Stuck Off	<u>1</u> Gear						
								Pleas e See	
								Table Noutral	
			Gear slip	>= 400	RPM			>= 5 For Timer	
								al (Sec)	
								Time Cal	
			Intrusive test:						
			commanded 2nd gear	Table base	d				
			If attained Gear ≠ 2nd for Time	Timer, Plea >= See Table 3 Supporting	Enable Time (Sec)				
			If Above Conditions have	Document	5			1st	
			been met, Increment 1st					>= 3 Gear Fail	
			gear fail counter					Count	
								or	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			and C1234 fail counter				C1234 >= 14 Clutch Fail Count	
			Fail Case Case: Steady State 2nd 2 Gear				Pleas e See Table Neutral	
			Gear slip				>= 5 For Timer (Sec) al Time Cal	
			Intrusive test: commanded 3rd gear If attained Gear ≠ 3rd for	Table based				
			Time If Above Conditions have	Supporting (Sec) Documents			2nd	
			been met, Increment 2nd gear fail counter	4			>= 3 Gear Fail Count or	
			and C1234 fail counter Fail Case Case: Steady State 3rd				C1234 Clutch Fail Count	
			3 Gear				Pleas e See Table Neutral >= 5 For Timer	
			Intrusive test: commanded 4th gear				Neutr (Sec) al Time Cal	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE COM	IDITIONS	TIME REQUIRED	MIL ILLUM.
			If attained Gear ≠ 4th for time	>= See Lanie 3 in					
			If Above Conditions have been met, Increment 3rd gear fail counter					3rd Gear Fail Count or	
			and C1234 fail counter Fail Case Case: Steady State 4th					>= 14 Clutch Fail Count	
			4 Case: Steady State 4th Gear					Pleas	
			Gear slip	>= 400 RPM				e See Table Timer Neutr al Time Cal	
			Intrusive test: commanded 5th gear						
			If attained Gear = 5th For Time	Table based Timer, Please See Table 3 in Enable Time					
			If Above Conditions have been met, Increment 4th gear fail counter					4th Sear Fail Count or	
			and C1234 fail counter					>= 14 Clutch Fail Count	
					PRNDL State defaulted inhibit RVT		Boolean Boolean		
					IMS fault pending indication		Boolean		
					TPS validity flag	= TRUE	Boolean		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Hydraulic System Pressurized Minimum output speed for RVT	- ITOL Boolean		
					A OR B (A) Output speed enable			
					(B) Accelerator Pedal enable Common Enable Criteria			
					Ignition Voltage Lo Ignition Voltage Hi	>= 8.59961 Volts <= 31.999 Volts		
					Engine Speed Lo Engine Speed Hi			
					Engine Speed is within the allowable limits for Throttle Position Signal valid	>= 5 Sec		
					HSD Enabled			
					Transmission Fluid Temperature Input Speed Sensor fault			
					Output Speed Sensor fault Default Gear Option is not	= FALSE Boolean		
					present	= TRUE		
				Disable Conditions:		TCM: P0716, P0717, P0722, P0723, P182E		
						ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201,		
						P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD V	ALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
Variable Bleed Solenoid (VBS)	P2724	Pressure Control (PC) Solenoid E Stuck On (Dynamic)	Primary Offgoing Clutch is exhausted (See Table 10 in Supporting Documents for Exhaust Delay Timers)		TRUE E	Boolean				One Trip
			Primary Oncoming Clutch Pressure Command Status	=	Maximum pressurized					
			Primary Offgoing Clutch Pressure Command Status	=	Clutch exhaust command					
			Range Shift Status	≠	Initial Clutch Control					
			Attained Gear Slip			RPM				
			If the above conditions are true increment appropriate Fail 1 Timers Below:							
			fail timer 1 (2-6 shifting with throttle)	>=	0.299804688 s	sec				
			fail timer 1 (2-6 shifting without throttle)	>=	0.5 s	sec				
			fail timer 1 (3-5 shifting with throttle)	>=	0.299804688 s	sec				
			fail timer 1 (3-5 shifting without throttle)	>=	0.5 s	sec				
			fail timer 1 (4-5 shifting with throttle)	>=	0.299804688 s	sec				
			fail timer 1 (4-5 shifting without throttle)	>=	0.5 s	sec				
			fail timer 1 (4-6 shifting with throttle)	>=	0.299804688 s	sec				
			fail timer 1 (4-6 shifting without throttle)		0.5 s	sec				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			If Attained Gear Slip is Less than Above Cal Increment Fail Timers				Total Fail Time = (Fail 1 + Fail 2) See Enabl e Timer s for >= Fail sec Timer 1, and Refer ence Suppo rting Table 15 for Fail Timer	
			If fail timer is greater than threshold increment corresponding gear fail counter and total fail counter				2	
			2nd gear fail counter				Fail Counter >= 3 From 2nd Gear	
			3rd gear fail counter				Fail Counter >= 3 From 3rd Gear	
			4th gear fail counter				Fail Counter >= 3 From 4th Gear	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			total fail counter				Total >= 5 Fail Counter	
					TUT Enable temperature Input Speed Sensor fault Output Speed Sensor fault Command / Attained Gear High Side Driver ON output speed limit for TUT input speed limit for TUT PRNDL state defaulted IMS Fault Pending Service Fast Learn Mode	= FALSE Boolean = FALSE Boolean ≠ 1st Boolean = TRUE Boolean >= 100 RPM >= 150 RPM = FALSE Boolean = FALSE Boolean = FALSE Boolean = FALSE Boolean		
				Disable Conditions:	DTC's:	TCM: P0716, P0717, P0722, P0723, P182E ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Variable Bleed Solenoid (VBS)	P2724	Pressure Control (PC) Solenoid E Stuck On (Steady State)	Fail Case 1 Case: 5th Gear Max Delta Output Speed Hysteresis	Table Based value Please Refer to 3D Table 1 in supporting documents				One Trip

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			Min Delta Output Speed Hysteresis	>=	Table Based value Please Refer to 3D Table 2 in supporting documents				
			If the Above is True for Time	>=	Table Based Time Please Refer to Table 17 in supporting documents				
			Intrusive test: (C35R clutch exhausted)						
			Gear Ratio Gear Ratio If the above parameters	>=	1.209594727 1.094360352				
			are true					Fail >= 1.1 Timer (Sec)	
								Fail Count in 5th Gear	
								OR Total >= 3 Fail Counts	
			<u>Fail Case</u> Case: 6th Gear 2						
			Max Delta Output Speed Hysteresis		Table Based value Please Refer to 3D Table 1 in supporting documents				
			Min Delta Output Speed Hysteresis	>=	Table Based value Please Refer to 3D Table 2 in supporting				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENA	ABLE CON	DITIONS	TIME	REQU	JIRED	MIL ILLUM.
			If the Above is True for Time Intrusive test: (CB26 clutch exhausted) Gear Ratio Gear Ratio If the above parameters are true	17 in supporting documents <= 1.209594727 >= 1.094360352	PRNDL State defaulted inhibit RVT IMS fault pending indication output speed TPS validity flag HSD Enabled Hydraulic_System_Pressuriz ed Minimum output speed for RVT A OR B (A) Output speed enable (B) Accelerator Pedal enable lgnition Voltage Lo	= = = = = = = = = = = = = = = = = = = =	FALSE 0 TRUE TRUE 0 16	Boolean Boolean Boolean Boolean Boolean Nm Nm Nm Volts	>= >=		Fail Timer (Sec) Fail Count in 6th Gear OR Total Fail Counts	
					Ignition Voltage Hi Engine Speed Lo		31.999 400	Volts RPM				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Engine Speed Hi	<= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		
					if Attained Gear=1st FW Accelerator Pedal enable	>= 5.00031 Pct		
					if Attained Gear=1st FW Engine Torque Enable	>= 5 Nm		
					if Attained Gear=1st FW Engine Torque Enable	- 0101.00 Nm		
					Transmission Fluid Temperature			
					Input Speed Sensor fault	= FALSE Boolean		
					Output Speed Sensor fault	= FALSE Boolean		
					Default Gear Option is not present	= TRUE		
				Disable Conditions:		TCM: P0716, P0717, P0722, P0723, P182E		
						ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
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				>= 0.3 Time (Sec) Sample out of 0.375 Time (Sec)	One Trip
					P2729 Status is not	Test Failed This Key On or Fault Active		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD) VALUE	SECONDARY PARAMETERS	ENABI	LE CONI	DITIONS	TIME REG	UIRED	MIL ILLUM.
						Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable limits for	<= >= <= >=	3.59961 31.999 400 7500 5	Volt Volt RPM RPM Sec			
					Disable Conditions:		TCM: No					
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 out of 0.375	(Sec) Sample	One Trip
						P2730 Status is not	= ^T	Test Failed This Key On or Fault Active			(OCC)	
						Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable limits for	>= { <= >= <=	3.59961 31.999 400 7500 5	Volt Volt RPM RPM Sec			
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: No					
Variable Bleed Solenoid (VBS)	P2763	Torque Converter Clutch Pressure High	The HWIO reports a low pressure/high voltage (open or power short) error flag	= TRUE	Boolean					>= 4.4	Fail Time (Sec)	Two Trips
										out of 5	Sample Time (Sec)	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					P2763 Status is not	Test Failed This Key On or Fault Active		
					Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable limits for High Side Driver Enabled	<= 31.999 Volt >= 400 RPM <= 7500 RPM >= 5 Sec		
				Disable Conditions:				
Variable Bleed Solenoid (VBS)	P2764	Torque Converter Clutch Pressure Control Solenoid Control Circuit Low	The HWIO reports a high pressure/low voltage (ground short) error flag	= TRUE Boolean			>= 4.4 MPH out of 5 MPH	One Trip
					P2764 Status is not	Test Failed This Key On or Fault Active		
					Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable limits for High Side Driver Enabled	>= 8.59961 Volt <= 31.999 Volt >= 400 RPM <= 7500 RPM >= 5 Sec		
				Disable Conditions:	DTC's:			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLI	O VALUE	SECONDARY PARAMETERS	ENABLE	CONDITIO	ONS	TIME	REQU	JIRED	MIL ILLUM.
Communication	U0073	Controller Area Network Bus Communication Error	CAN Hardware Circuitry Detects a Low Voltage Error		TRUE	Boolean					>=	62	Fail counts (≈ 10 second s)	One Trip
			Delay timer	>=	0.1125	sec					Out of	70	Sample Counts (≈ 11 second s)	
							Stabilization delay Power Mode Ignition Voltage Lo Ignition Voltage Hi	= R >= 8.59	un 9961 V	ec 'olt 'olt				
						Disable Conditions:		TCM: None						
Communication	U0100	Lost Communications with ECM (Engine Control Module)	CAN messages from ECM are not received by the TCM	=	TRUE	Boolean					>=	12	sec	One Trip
							Stabilization delay Power Mode Ignition Voltage Lo Ignition Voltage Hi	= R >= 8.59	un 9961 V	ec 'olt 'olt				
						Disable Conditions:		TCM: U007 ECM: None						

Supporting Documents - 2D Tables

Table 1

Axis	0.00	64.00	128.00	192.00	256.00	320.00	384.00	448.00	512.00	N*m
Curve	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	RPM

Table 2

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

Table 3

Axis	-6.67	-6.66	40.00	٥С
Curve	409.59	4.00	4.00	Sec

Table 4

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

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	٥С
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 Tables

Table 8

Axis	-6.67	-6.66	40.00	80.00	120.00 °C
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	٥С
Curve	409.00	3.30	1.30	1.20	1.10	Sec

<u>Table 10</u>

Axis	-40.00	-20.00	0.00	30.00	110.00	٥С
Curve	3.03	1.86	1.00	0.75	0.58	Sec

<u>Table 11</u>

Axis	-40.00	-20.00	0.00	30.00	110.00	٥С
Curve	1.72	1.11	0.60	0.36	0.22	Sec

Table 12

Axis	-40.00	-20.00	0.00	30.00	110.00	٥С
Curve	2.12	1.39	0.84	0.64	0.33	Sec

Table 13

Axis	-40.00	-20.00	0.00	30.00	110.00	٥С
Curve	2.51	0.95	0.50	0.29	0.13	Sec

Table 14

Axis	-40.00	-20.00	0.00	30.00	110.00	٥С
Curve	2.97	0.82	0.47	0.20	0.13	Sec

Supporting Documents - 2D Tables

<u>Table 15</u>

Axis	-40.00	-30.00	-20.00	-10.00	0.00	10.00	20.00	30.00	40.00 °C)
Curve	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00 Se	ес

<u>Table 16</u>

Axis	-6.67	-6.66	40.00	٥С
Curve	409.59	1.50	1.50	Se

Table 17

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

<u>Table 18</u>

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 °C
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	٥С

Supporting Documents - 3D Tables

3D_Table 1

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

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

3D_Table 2

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

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

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD	VALUE	SECONDARY PARAMETERS	ENAB	LE CONDITIONS	TIME REQUIRED	MIL ILLUM.
Internal Mode Switch (IMS)	P182E	Internal Mode Switch - Circuit A Low Reported as Internal Mode Switch-Invalid Range	Fail Case 1 Current range	=	"Transitional 1"	Range State					One Trip
		3-	Previous range	≠	CeTRGR_e_P RNDL_Drive6	Range State					
			Previous range	≠	CeTRGR_e_P RNDL_Drive4						
			Either the S1 or S3 Pressure Switch indicates "Pressure Present"	=	TRUE	Boolean					
			Engine Torque		-50	Nm					
			Engine Torque If the above conditions are present Increment Fail Timer	<=	8191.75	Nm				>= 0.225	
			If Fail Timer has Expired then Increment Fail Counter							>= 15 Fail Counts	
			Fail Case 2 Current range S3 Pressure Switch indicates "Exhausted"	=	"Transitional 1" TRUE	Range State Boolean					
			Commanded Gear If the above conditions are present Increment Fail Timer	=	1st Locked	Gear				>= 0.225 Fail Seconds	
			If Fail Timer has Expired then Increment Fail Counter							>= 15 Fail Counts	
			Fail Case 3 Current range	=	"Transitional 13"		Previous range	¥	CeTRG R_e_P RNDL_ Drive1		
			Either the S1 or S3 Pressure Switch indicates "Pressure Present"	=	TRUE	Boolean	Previous range	≠	CeTRG R_e_P RNDL_ Drive1		
			Engine Torque	>=	-8192	Nm	IMS is 7 position configuration	=	1 Boolean		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD V	ALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			Engine Torque	<=	8191.75	Nm	If the "IMS 7 Position config" = 1 then the "previous range" criteria above must also be satsified when the "current range" = "Transitional 13"			
			If the above conditions are present Increment Fail Timer						>= 0.225 Seconds	
			If Fail Timer has Expired then Increment Fail Counter						>= 15 Fail Counts	
			Fail Case 4 Current range	=	"Transitional 2" or "Transitional 8"		Disable Fail Case 4 if last positive range was Drive 6 and current range is transitional 8			
			Inhibit bit (see definition)	=	FALSE		Set inihibit bit true if PRNDL = 1100 (rev) or 0100 (Rev- Neu transitional) Set inhibit bit false if PRNDL = 1001 (park)			
			Either the S1 or S3 Pressure Switch indicates "Pressure Present"		TRUE	Boolean				
			Steady State Engine Torque		100	Nm				
			Steady State Engine Torque	\-	8191.75	Nm				
			If the above conditions are present Increment Fail Timer						>= 0.225 Seconds	
			If the above Condtions have been met, Increment Fail Counter						>= 15 Fail Counts	
			<u>Fail Case</u> <u>5</u> Current range	=	"Transitional 11"					
			Engine Torque Either the S1 or S3 Pressure Switch indicates "Pressure Present"			Nm Boolean				
			If the above conditions are present Increment Fail Timer						>= 0.225 Seconds	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALU	E	SECONDARY PARAMETERS	ENABI	LE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			If the above Condtions have been met, Increment Fail Counter						>= 15 Fail Counts	
			Fail Case 6 Current range	= "Illegal"		A Open Circuit Definition (flag set false if the following conditions are met):				
			and			Current Range	≠	"Transit ional 11"		
			A Open Circuit (See Definition)	= FALSE Boole	ean	or Last positive state	≠	Neutral		
						or Previous transitional state and	≠	Transiti onal 8 and Illegal		
						PRNDL Circuit A	=	Open Circuit		
						PRNDL Circuit B	=	Closed Circuit		
						PRNDL Circuit C		Open Circuit Open		
			If the above Condtions are present, Increment Fail timer			PRNDL Circuit P	=	Circuit	>= 6.25 Seconds	
			Fail Case 7 Current PRNDL State and	ABCP = 1101						
			Previous valid state	= PRNDL circuit Rang	je					
			Input Speed	>= 150 RPM						

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			Reverse Trans Ratio	<= 2.845825195 ratio				
			If the above Condtions are present, Increment Fail timer P182E will report test fail				>= 6.25 Seconds	
			when any of the above 7 fail cases are met		Ignition Voltage Lo Ignition Voltage Hi Vehicle Speed Lo Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for Engine Torque Signal Valid	<= 31.999 Volts <= 511 KPH >= 400 RPM <= 7500 RPM		
					Engine rosque orginal valla			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
				Disable		TCM: P0722, P0723		
				Conditions:		ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		