System	Code	Monitor Strategy Description	Malfunction Criteria		Threshold Value	Secondary Malfunction		Enable Conditions			Time Requir		Mil Illum.
Transmission Control Module TCM)	C1251	The lateral accleration signal is stuck at a high magnitude in range	Lateral accleration magnitude	<=	g's								Special No MIL
,			Lateral accleration magnitude	>=	g's								
			Lateral accleration magnitude is within the range above for	>=	Sec								
						Lateral accleration magnitude	<=		g's				
						Lateral accleration magnitude	>=		g's				
						Lateral accleration magnitude is within the range above for	>=		Sec				
						Diagnostic shifting override command	=	FALSE	Boolean				
						Attained Gear State	=	1st through 6th					
						Attained Gear Slip	<=	100 Clutch to	RPM				
						Transmission Type	=	Clutch Transmissi					
						High Side Driver 1 On Vehicle Speed	= >=	on TRUE	Boolean kph				
						Battery Voltage Battery Voltage	<= >=	31.999023 9	Volts Volts				
						Battery voltage is within the allowable limits for	>=	0.1	Sec				
						Ignition Voltage Ignition Voltage	<= >=	31.999023 9	Volts Volts				
						Service Fast Learn (SFL) Mode	=	FALSE	Boolean				
						Ignition voltage and SFL conditions met for	>=	0.1	Sec				
					Disable Conditions:	MIL not Illuminated for DTC's:	(P0716, P071	ated to illuminat 7, P0721, P072 0, P077B, P077	2, P0723,				
							P215C, U007 ECM: None	3)					
													One Tri
Transmission Control Module (TCM)	P0601	Transmission Electro-Hydraulic Control Module Read Only Memory	Incorrect program/calibrations checksum	= TRUE	Boolean					>=	5	Fail Counts	

Component/	Fault	Monitor Strategy	Malfunction	Thre	shold	Secondary		Enable		Tin	ne	Mi
System	Code	Description	Criteria	Va	lue	Malfunction		Conditions		Requ	ired	Illu
						MIL not Illuminated for DTC's:	TCM: P0601					
					Conditions:		ECM: None					
							LOWI. NOTE					
ransmission Control Module		Transmission Electro-Hydraulic	Non-volatile memory (static or							Runs		One
CM)	P0603	Control Module Long-Term Memory	dynamic) checksum failure at	= TRUE	Boolean					Continously		
,		Reset	Powerup							,		
						MIL not Illuminated for DTC's:	TCM: P0603					
					Conditions:		FOM News					
							ECM: None					
ransmission Control Module		Transmission Electro-Hydraulic	RAM Read/Write Failure (Single									One
FCM)	P0604	Control Module Random Access	Word)	= TRUE	Boolean					>= 5	Fail Counts	
0.1.)		Memory										
										= 16	Sample Counts	
					Disable Conditions:	MIL not Illuminated for DTC's:	1CM: P0604					
					conditions.		ECM: None					
ransmission Control Module	DOLOF	Transmission Electro-Hydraulic	TCM Non-Volatile Memory bit	TDUE	Boolean					Runs		One
CM)	P062F	Control Module Long Term Memory Performance	Incorrect flag at Powerdown	= TRUE	Boolean					Continously		
					Disable Conditions:	MIL not Illuminated for DTC's:	1CM: P062F					
					conditions.		ECM: None					
ransmission Control Module	DOVOL	Transmission Electro-Hydraulic	Fail Case 1	444 004075						_	E 11 T2 (C)	One
ΓCM)	P0634	Control Module Internal Temperature Too High	Substrate Temperature	>= 146.296875	°C					>= 5	Fail Time (Sec)	
		100 High										
			Fail Case 2 Substrate Temperature	>= 50	°C					>= 2	Fail Time (Sec)	
			Ignition Voltage		Volts					_		
			Note: either fail case can set the	>= 10	VUIIS							
			DTC									
						Ignition Voltage Lo		8.5996094	Volts			
						Ignition Voltage Hi Substrate Temp Lo		31.990234 0	Volts °C			
						Substrate Temp Lo		170	°C			
						Substrate Temp Between Temp		0.25	Sec			
						Range for Time	>=	0.25	Sec			1

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Tim Requi		Mil Illum.
					P0634 Status is	Test Failed This Key On or Fault Active			
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None			
High Side Driver 1	P0658	Actuator Supply Voltage Circuit Low	The HWIO reports a low voltage (open or ground short) error flag	= TRUE Boolean			>= 4 out 6	Fail Counts Sample Counts	One Tri
					P0658 Status is not	Test Failed This Key On or Fault Active			
					High Side Driver 1 On	= True Boolean			
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None			
Transmission Control Module (TCM)	P0667	TCM Internal Temp (substrate) Sensor Circuit Range/Performance	If transmission oil temp to substrate temp Δ	Refer to Table > 19 in °C supporting documents					Two Trips
			If TCM substrate temp to power up temp Δ	Refer to Table 20 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	Sample Counts (100ms loop)	
			Non-continuous (intermittent) fail conditions will delay resetting fail counter until				>= 700	Pass Counts (100ms loop)	

Component/	Fault	Monitor Strategy	Malfunction Criteria	Threshold	Secondary		Enable				me	
System	Code	Description	Criteria	Value	Malfunction		Conditions		 	Req	uired	Ш
									Out	075	Sample Counts	
									of	875	(100ms loop)	
											· · · · · ·	
							TOUE	D I				-
					Engine Torque Signal Valid	=	TRUE	Boolean				
					Accelerator Position Signal Valid	=	TRUE	Boolean				
					Ignition Voltage Lo		8.5996094	Volts				
					Ignition Voltage Hi	>= <=	31.990094 31.990234	Volts				
					Engine Speed Lo	>=	400	RPM				
					Engine Speed Lo	<=	7500	RPM				
					Engine Speed is within the	<-						
					allowable limits for	>=	5	Sec				
					Brake torque active	=	FALSE					
					Below describes the brake		TAESE					
					torque entry criteria							
					Engine Torque	>=	90	N*m				
					Throttle	>=	30.000305	Pct				
					Transmission Input Speed	<=	200	RPM				
					Vehicle Speed	<=	8	Kph				
					Transmission Range	¥	Park					
					Transmission Range	, ≠	Neutral					
					PTO	=	Not Active					
					Set Brake Torque Active TRUE	>=	7	sec				
					if above conditions are met for:							
					Below describes the brake							
					torque exit criteria							
					Brake torque entry criteria	=	Not Met					
							Clutch					
					Clutch hudroulio procesuro	-	Hydraulic					
					Clutch hydraulic pressure	¥	Air Purge					
							Event					
					Clutch used to exit brake torque		CeTFTD_e					
					active	=	_C3_RatlE					
							nbl					
					The above clutch pressure is							
					greater than this value for one	>=	600	kpa				
					loop							
					Set Brake Torque Active							
					FALSE if above conditions are	>=	20	Sec				
					met for:							
							Test Failed					
					P0667 Status is	≠	This Key					
					1 0007 Status IS	/	On or Fault					
							Active					
									1			

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
					ble MIL not Illuminated for DTC's:	 TCM: P0658, P0668, P0669, P06AD, P06AE, P0716, P0712, P0713, P0717, P0722, P0723, P0962, P0963, P0966, P0967, P0970, P0971, P215C, P2720, P2721, P2729, P2730 ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E 		
Transmission Control Module (TCM)	P0668	TCM internal temperature (substrate) thermistor failed at a low voltge	Type of Sensor Used If TCM Substrate Temperature	р				Two Trips
			Sensor = Direct Proportional and Temp If TCM Substrate Temperature Sensor = Indirect Proportional and Temp					
			Either condition above will satisfy the fail conditions				>= 60 Fail Timer (Sec))
				Disa Condition	Ignition Voltage Lc Ignition Voltage H Engine Speed Lc Engine Speed H Engine Speed is within the allowable limits for P0668 Status is P0668 Status is	Test Failed This Key On or Fault Active		-
Transmission Control Module (TCM)	P0669	TCM internal temperature (substrate) thermistor failed at a high voltage	Type of Sensor Used If TCM Substrate Temperature Sensor = Direct Proportional and Temp If TCM Substrate Temperature Sensor = Indirect Proportional and Temp	p >= 249 °C <= 249 °C				Two Trips

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			ime juired	Mil Illum
0,000		2000.19100	Either condition above will satisfy the fail conditions	Value		Conditions	>=	60	Fail Timer (Sec)	1
					Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for	>= 8.5996094 Volts <= 31.990234 Volts >= 400 RPM <= 7500 RPM >= 5 Sec				
					P0669 Status is	Test Failed This Key On or Fault Active				
					For Hybrids, below conditions must also be met					
					Estimated Motor Power Loss	>= 0 kW				
					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		TCM: P0716, P0717, P0722, P0723 ECM: None				
ransmission Control Module TCM)	P06AC	TCM Power-up Temp Sensor Circuit Range/Performance	If TCM power-up temp to substrate temp Δ	Refer to Table > 20 in °C supporting documents						Tr Tr
			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 of	3750	Sample Counts (100ms loop)	

Component/	Fault	Monitor Strategy	Malfunction Criteria	Threshold	Secondary		Enable				me	
System	Code	Description		Value	Malfunction		Conditions			Req	uired	
			Non-continuous (intermittent) fail								Pass Counts	
			conditions will delay resetting fail						>=	700	(100ms loop)	
			counter until								(1001101000)	
									Out		Sample Counts	
									of	875	(100ms loop)	1
									0		(1001131000)	
					Engine Torque Signal Valid	=	TRUE	Boolean				Т
					Accelerator Position Signal		TDUE	Dealers				
					Valid	=	TRUE	Boolean				
					Ignition Voltage Lo	>=	8.5996094	Volts	1			1
					Ignition Voltage Hi	<=	31.990234	Volts				
					Engine Speed Lo	>=	400	RPM				
					Engine Speed Hi	<=	7500	RPM				
					Engine Speed is within the				1			1
					allowable limits for	>=	5	Sec				
					Brake torque active	=	FALSE		1			1
					Below describes the brake	_	THEOL		1			1
					torque entry criteria				1			1
					Engine Torque	>=	90	N*m	1			1
					Throttle	>=	30.000305	Pct				
					Transmission Input Speed			RPM				
						<=	200					
					Vehicle Speed	<=	8	Kph				
					Transmission Range	≠,	Park					
					Transmission Range	≠	Neutral					
					PTO	=	Not Active					
					Set Brake Torque Active TRUE							
					if above conditions are met for:	>=	7	Sec				
					Below describes the brake							
					torque exit criteria							
					Brake torque entry criteria	=	Not Met					
							Clutch					
					Clutch hydroid's see	4	Hydraulic					
					Clutch hydraulic pressure	≠	Air Purge					
							Event					
							CeTFTD_e					
					Clutch used to exit brake torque	=	_C3_RatlE					
					active		nbl					
					The above clutch pressure is							
					greater than this value for one	>=	600	kpa				
					loop	-	000					
					Set Brake Torque Active				1			
					FALSE if above conditions are	>=	20	Sec	1			1
					met for:	/-	20	JCC				
					met for:				1			1
							T					
							Test Failed		1			1
					P06AC Status is	≠	This Key		1			
							On or Fault					
	1						Active		1			1

Component/	Fault	Monitor Strategy	Malfunction Criteria	Threshold	Secondary	Enable			ime	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions		Rec	quired	Illum.
				Disa Conditio		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	Fail Time (Sec)	Two Trips
					Ignition Voltage Lo Ignition Voltage H Engine Speed Lo Engine Speed H Engine Speed is within the allowable limits fo	i <= 31.990234 Volts >= 400 RPM i <= 7500 RPM				
					P06AD Status is	Test Failed This Key On or Fault Active				
					For Hybrids, below conditions must also be me					
					Estimated Motor Power Loss	s >= 0 kW				
					Estimated Motor Power Loss greater than limit for time					
					Lost Communication with Hybrid Processor Control Module					
					Estimated Motor Power Loss Faul	- ENISE				
				Disa Conditio		TCM: P0716, P0717, P0722, P0723 ECM: None				
Transmission Control Module (TCM)	P06AE	TCM power-up thermistor circuit voltage high	Power Up Temp	>= 164 °C			>=	60	Fail Time (Sec)	Two Trips
		···· ()··· ()··			Ignition Voltage Lo Ignition Voltage H					1

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable			Ti	me	Mil
System	Code	Description	Criteria	Value	Malfunction	Condition	s		Req	uired	Illum.
					Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for	>= 400 <= 7500 >= 5	RPM RPM Sec				
					P06AE Status is	Test Faile This Ke On or Fai Active	1				
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None					
Transmission Fluid Temperature Sensor (TFT)	P0711	Trans Fluid Temp Sensor Circuit Range/Performance	If transmission oil temp to substrate temp Δ	Refer to Table 9 in °C supporting documents							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 of	3750	Sample Counts (100ms loop)	
			Non-continuous (intermittent) fail conditions will delay resetting fail counter until					>=	700	Pass Counts (100ms loop)	
								Out of	875	Sample Counts (100ms loop)	
					Engine Torque Signal Valid Accelerator Position Signal Valid Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for Brake torque active	= TRUE = TRUE >= 8.599605 <= 31.99023 >= 400 <= 7500 >= 5 = FALSE					

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
					Below describes the brake torque entry criteria Engine Torque Throttle Transmission Input Speed Vehicle Speed Transmission Range Transmission Range PTO			
					Set Brake Torque Active TRUE if above conditions are met for:	>= 7 sec		
					Below describes the brake torque exit criteria Brake torque entry criteria Clutch hydraulic pressure	= Not Met Clutch ≠ Hydraulic Air Purge		
					Clutch used to exit brake torque active The above clutch pressure is greater than this value for one	Event CeTFTD_e = _C3_RatIE nbl		
					Set Brake Torque Active FALSE if above conditions are met for:			
					P0711 Status is	Test Failed This Key On or Fault Active		
				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		

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
Transmission Fluid Temperature Sensor (TFT)	P0712	Transmission fluid temperature thermistor failed at a low voltage	Type of Sensor Used	CeTFTI_e_Vol				Two Trips
Temperature Sensor (TTT)		inemision railed at a low voltage	If Transmission Fluid Temperature	р				
			Sensor = Direct Proportional and Temp	<= -74 °C				
			If Transmission Fluid Temperature Sensor = Indirect Proportional and Temp	>= -74 °C				
			Either condition above will satisfy the fail conditions				>= 60 Fail Time (Sec)	
					Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for	>= 8.5996094 Volts <= 31.990234 Volts >= 400 RPM <= 7500 RPM >= 5 Sec		
					P0712 Status is	Test Failed ≠ This Key On or Fault Active		
					For Hybrids, below conditions must also be met			
					Estimated Motor Power Loss	>= 0 kW		
					Estimated Motor Power Loss greater than limit for time	>= 0 Sec		
					Lost Communication with Hybrid Processor Control Module	= FALSE		
					Estimated Motor Power Loss Fault	= FALSE		
				Disabl		TCM: P0716, P0717, P0722, P0723 ECM: None		
Transmission Fluid	P0713	Transmission fluid temperature	Type of Sensor Used	CeTFTI_e_Vol = tageDirectPro				Two Trips
Temperature Sensor (TFT)		thermistor failed at a high voltage	If Transmission Fluid Temperature Sensor = Direct Proportional and Temp	р				
			If Transmission Fluid Temperature Sensor = Indirect Proportional and Temp					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions				me uired	Mil Illum
e je le			Either condition above will satisfy	Value			Conditions		>=	60	Fail Time (Sec)	
			the fail conditions		Ignition Voltage Lo	>=	8.5996094	Volts				-
					Ignition Voltage Hi Engine Speed Lo	<=	31.990234 400	Volts RPM				
					Engine Speed Lo	>= <=	7500	RPM				
					Engine Speed is within the	<=						
					allowable limits for	>=	5	Sec				
						-4	Test Failed This Key					
					P0713 Status is	≠	On or Fault Active					
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0713, P0723	P0716, P0717,	P0722,				
						ECM: None						
ransmission Input Speed ensor (TISS)	P0716	Input Speed Sensor Performance	Transmission Input Speed Sensor Drops	>= 1350 RPM					>=	0.8	Fail Time (Sec)	One 1
					Engine Torque is	>=	0 8191.875	N*m				
					Engine Torque is Engine Speed	<= >=	400	N*m RPM				
					Engine Speed	<=	7500	RPM				
					Engine Speed is within the							
					allowable limits for	>=	5	Sec				
					Vehicle Speed is	>=	10	Kph				
					Throttle Position is	>=	0	Pct				
					Transmission Input Speed is	>=	0	RPM				
					The previous requirement has	>=	0	Sec				
					been satisfied for							
					The change (loop to loop) in transmission input speed is	<	8191.875	RPM/Loop				
					The previous requirement has been satisfied for	>=	0	Sec				
					Throttle Position Signal Valid	=	TRUE	Boolean				
					Engine Torque Signal Valid	=	TRUE	Boolean				
					Ignition Voltage	>=	8.5996094	Volts				
	1				Ignition Voltage	<=	31.990234	Volts				1

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		eshold alue	Secondary Malfunction	Enable Conditions			Tir Requ		Mil Illum.
						P0716 Status is not	Test Failed This Key On or Fault Active					
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0717, P0752, P0973, ECM: P0101, P0102, P0103, P0122, P0123					
Transmission Input Speed Sensor (TISS)	P0717	Input Speed Sensor Circuit Low Voltage	Fail Case 1 Transmission Input Speed	s < 33	RPM				>=	4.5	Fail Time (Sec)	One Trip
			Fail Case 2 When P0722 DTC Status equal Test Failed and Transmission Inpu Speed	ut < 1000	RPM	Controller uses a single power supply for the speed sensors	= 1	Boolean				-
						Engine Torque is Engine Torque is Vehicle Speed Engine Torque Signal Valid Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable limits for	>= 50 <= 8191.875 >= 16 = TRUE >= 8.5996094 <= 31.990234 >= 400 <= 7500 >= 5	N*m N*m Kph Boolean Volts Volts RPM RPM Sec				
						P0717 Status is not	Test Failed This Key On or Fault Active					
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0722, P0723 ECM: P0101, P0102, P0103					
Transmission Output Speed Sensor (TOSS)	P0722	Output Speed Sensor Circuit Low Voltage	Transmission Output Speed Senso Raw Spee		RPM				>=	3.75	Fail Time (Sec)	One Trip
						P0722 Status is not	Test Failed This Key On or Fault Active					
						Transmission Input Speed Check	= TRUE	Boolean				
						Engine Torque Check	= TRUE	Boolean				

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary		Enable		Time	Mil
System	Code	Description	Criteria	Value	Malfunction		Conditions		Required	Illum
					Throttle Position	>=	8.0001831	Pct		
					Transmission Fluid	>=	-40	°C		
					Temperature	· -	10	0		
					Disable this DTC if the PTO is	=	1	Boolean		
					active Engine Torque Signal Valid		TRUE	Boolean		
					Engine Torque Signal Valid	=				
					Throttle Position Signal Valid	=	TRUE	Boolean		
					Ignition Voltage is	>=	8.5996094	Volts		
					Ignition Voltage is	<=	31.990234	Volts		
					Engine Speed is	>=	400	RPM		
					Engine Speed is	<=	7500	RPM		
					Engine Speed is within the	>=	5	Sec		
					allowable limits for	-	0	000		
										_
					Enable_Flags Defined Below					
					The Engine Torque Check is					
					TRUE, if either of the two following conditions are TRUE					
					TOHOWING CONDITIONS are TRUE					
					Engine Torque Condition 1					
							Dongo ohift			
					Range Shift Status	¥	Range shift completed	ENUM		
							completed			
					OR					
							Park or			
					Transmission Range is	=	Neutral			
					Engine Torque is	>=	8191.75	N*m		
					Engine Torque is	<=	8191.75	N*m		
					Engine Torque Condition 2		25	Ni*ne		
					Engine Torque is Engine Torque is	>= <=	35 8191.75	N*m N*m		
						<-	0171.75	IN III		
					T. T					
					The Transmission Input Speed (TIS) Check is TRUE, if either of					
					the two following conditions are					
					TRUE					
					INDE					
					TIC Check Condition 1					
					TIS Check Condition 1					
					Transmission Input Speed is	>=	1000	RPM		
							a			
					Transmission Input Speed is	<=	8191	RPM		
					TIS Check Condition 2					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		nreshold		Secondary Malfunction		Enable				me	Mil Illum.
System	Code	Description	Citteria		Value	Engi	ine Speed without the brake		Conditions			Req	uired	mum.
						ľ	applied is	>=	3200	RPM				
						L L	ngine Speed with the brake applied is	>=	3200	RPM				
							Engine Speed is	<=	8191	RPM				
						Co	ntroller uses a single power	=	1	Boolean				
						SI	upply for the speed sensors			Booloan				
						Pow	vertrain Brake Pedal is Valid	=	TRUE	Boolean				
					Dis	able MIL I	not Illuminated for DTC's:	TCM· P0716	P0717 P0723					
					Conditi									
								ECM: P0101, P0122, P012	P0102, P0103 3	, P0121,				
Transmission Output Speed	P0723	Output Speed Sensor Circuit	Transmission Output Speed Sensor	>= 105	RPM						>=	0.2	Enable Time	One Tri
Sensor (TOSS)		Intermittent	Raw Speed										(Sec) Enable Time	
			Output Speed Delta	<= 8191	RPM						>=	0	(Sec)	
				(50	2214								Output Speed	
			Output Speed Drop	> 650	RPM						>=	1.5	Drop Recovery Fail Time (Sec)	
			AND											
			Transmission Range is	= Driven rar (R,D)	ge									
				(11,0)										1
							Range_Disable OR	=	FALSE	See Below				
							Neutral_Range_Enable And	=	TRUE	See Below				
							Neutral_Speed_Enable	=	TRUE	See Below				
							are TRUE concurrently							
						Tr	ansmission_Range_Enable	=	TRUE	See Below				
						Trar	nsmission_Input_Speed_En	=	TRUE	See Below				
						N	able Io Change in Transfer Case							
							Range (High <-> Low) for	>=	5	Seconds				
									Test Failed					
							P0723 Status is not	=	This Key On or Fault					
									Active					
						Die	sable this DTC if the PTO is							
						DI	active	=	1	Boolean				

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable		Time	м
System	Code	Description	Criteria	Value	Malfunction	Conditions		Required	Illu
•		· · · · · ·			Ignition Voltage is	>= 8.5996094	Volts		
					Ignition Voltage is	<= 31.990234	Volts		
					Engine Speed is	>= 400	RPM		
					Engine Speed is	<= 7500	RPM		
					Engine Speed is within the				
					allowable limits for	>= 5	Sec		
					Enable_Flags Defined Below				
					Transmission_Input_Speed_En				
					able is TRUE when either TIS				
					Condition 1 or TIS Condition 2				
					is TRUE:				
					TIS Condition 1 is TRUE when				
					both of the following conditions	>= 0	Enable Time		
					are satsified for	-	(Sec)		
					Input Speed Delta	<= 4095	RPM		
					Raw Input Speed	>= 500	RPM		
					TIS Condition 2 is TRUE when				
					ALL of the next two conditions				
					are satisfied				
					Input Speed	= 0	RPM		
					A Single Power Supply is used				
					for all speed sensors	= TRUE	Boolean		
					Neutral_Range_Enable is				_
					TRUE when any of the next 3				
					conditions are TRUE				
					Transmission Range is	= Neutral	ENUM		
					Transmission Range is				
						Reverse/N			
					Transmission Range is	= eutral	ENUM		
						Transitonal			
						Neutral/Dri			
						Ve			
					Transmission Range is	= Transitiona	ENUM		
					And when a drop occurs				
									1
					Loop to Loop Drop of	> 650	RPM		
					Transmission Output Speed is	> 000			
					Range_Disable is TRUE when				_
					any of the next three conditions				
					any of the next three conditions are TRUE				
					Transmission Range is	Dark	ENUM		
					transmission Range is	= Park	ENUM		
						Park/Rever			
					Transmission Range is	= Se	ENUM		
					go 10	Transitonal			
								1	

Component/	Fault	Monitor Strategy	Malfunction Criteria	Threshold	Secondary	Enable		Time	M
System	Code	Description	Griteria	Value	Malfunction	Conditions		Required	Illu
					Input Clutch is not	= ON (Fully	ENUM		
						Applied)			
					Neutral_Speed_Enable is				
					TRUE when All of the next three	> 1.5	Seconds		
					conditions are satsified for				
					Transmission Output Speed	> 130	RPM		
					The loop to loop change of the Transmission Output Speed is	< 20	RPM		
					mansinission Output Speed is				
					The loop to loop change of the				
					Transmission Output Speed is	> -10	RPM		
					nanonnoolon oalpat opood io				
			l	l	Transmission_Range_Enable is				
					TRUE when one of the next six				
					conditions is TRUE				
					Transmission Range is	= Neutral	ENUM		
					Transmission Range is	Reverse/N	LINUM		
						outral			
					Transmission Range is	= Transitiona	ENUM		
						Neutral/Dri			
					Transmission Danas is	Ve	ENUM		
					Transmission Range is	= Transitiona	ENUM		
						l I			
						Table			
						Based			
						Time			
					Time since a driven range (R,D)	Please	C		
					has been selected	>= Refer to	Sec		
						Table 21 in			
						supporting			
						documents			
					Transmission Output Speed	500	DDM		
					Sensor Raw Speed	>= 500	RPM		
					Output Speed when a fault was	>= 500	RPM		
					detected	>= 300	RPIVI		
				Disable	MIL not Illuminated for DTOI-	TCM. D0072 D0074 D0074	00077		
				Disable Conditions:	MIL not Illuminated for DTC's:	TCIVI: PU973, PU974, PU976,	PU9//		
				Conditions:		ECM: P0101, P0102, P0103,	D0101		
						P0122, P0123	10121,		
	D0744	TOO Custom Church OFF	T00 5	000 1/				_ Enabl	e Time T
ue Converter Clutch (TCC)	P0/41	TCC System Stuck OFF	TCC Pressure	>= 800 Kpa					ec) T

e Description	Criteria Either Condition (A) or (B) Must be Met (A) TCC Slip Error @ TCC On Mode (B) TCC Slip @ Lock On Mode (B) TCC Slip @ Lock On Mode If Above Conditions Have been Met, and Fail Timer Expired, Increment Fail Counter	Value Refer to Table 1 in RPM Supporting Documents >= 130 RPM	Malfunction	=	Conditions On or Lock		>= >= >=	5 5 3	quired Fail Time (Sec) Fail Time (Sec) TCC Stuck Off Fail Counter	Illur
	(A) TCC Slip Error @ TCC On Mode (B) TCC Slip @ Lock On Mode If Above Conditions Have been Met, and Fail Timer Expired, Increment	>= 1 in RPM Supporting Documents	Ignition Voltage Lo		On or Lock		>=	5	Fail Time (Sec) TCC Stuck Off	
	If Above Conditions Have been Met, and Fail Timer Expired, Increment		Ignition Voltage Lo		On or Lock				TCC Stuck Off	
	If Above Conditions Have been Met, and Fail Timer Expired, Increment	. 100 1111	Ignition Voltage Lo		On or Lock				TCC Stuck Off	
			Ignition Voltage Lo		On or Lock		>=	3		
			Ignition Voltage Lo		On or Lock					1
				>=						
			Ignition Voltage Hi Engine Speed	<= >=	8.5996094 31.990234 400	Volts Volts RPM				
			Engine Speed Engine Speed is within the	<= >=	7500 5	RPM Sec				
			allowable limits for Engine Torque Lo	>=	50	N*m				
			Engine Torque Hi Throttle Position Lo	<= >=	8191.875 8.0001831	N*m Pct				
			Throttle Position Hi 2nd Gear Ratio Lo	<= >=	99.998474 2.6710205	Pct Ratio				
			2nd Gear Ratio High 3rd Gear Ratio Lo	<= >=	3.072998 1.7130127	Ratio Ratio				
			3rd Gear Ratio High 4th Gear Ratio Lo	<= >=	1.9709473 1.3150635	Ratio Ratio				
			4th Gear Ratio High 5th Gear Ratio Lo	<= >=	1.5129395 0.9300537	Ratio Ratio				
			5th Gear Ratio Hi 6th Gear Ratio Lo	<= >=	1.0699463 0.6900635	Ratio Ratio				
			6th Gear Ratio High	<=	0.7939453	Ratio				
			Temperature Lo Transmission Fluid							
			Temperature Hi							
			Engine Torque Signal Valid	=	TRUE	Boolean				
				=	TRUE	Boolean				
			Dynamic Mode P0741 Status is	= ≠	FALSE Test Failed This Key On or Fault Active	Rooiean				
				4th Gear Ratio Lo 4th Gear Ratio High 5th Gear Ratio Lo 5th Gear Ratio Lo 5th Gear Ratio High 6th Gear Ratio High Transmission Fluid Temperature Lo Transmission Fluid Temperature Hi PTO Not Active Engine Torque Signal Valid Throttle Position Signal Valid Dynamic Mode	4th Gear Ratio Lo >= 4th Gear Ratio High <=	4th Gear Ratio Ligh >= 1.3150635 4th Gear Ratio High <=	$\left \begin{array}{cccccccccccccccccccccccccccccccccccc$	$\left \begin{array}{ccccc} 4 \text{th Gear Ratio Io} \\ 4 \text{th Gear Ratio High} \\ <= & 1.3150635 \\ 8 \text{Ratio} \\ 4 \text{th Gear Ratio High} \\ <= & 1.5129395 \\ 0.9300537 \\ \text{Ratio} \\ 5 \text{th Gear Ratio Io} \\ <= & 0.6900635 \\ \text{Ratio} \\ 6 \text{th Gear Ratio Io} \\ 6 \text{th Gear Ratio High} \\ <= & 0.7939453 \\ \text{Ratio} \\ 1.06900635 \\ \text{Ratio} \\ 6 \text{th Gear Ratio High} \\ <= & 0.7939453 \\ \text{Ratio} \\ 1.06900635 \\ \text{Ratio} \\ 6 \text{th Gear Ratio High} \\ <= & -6.664063 \\ \circ^{\text{C}} \\ 130 \\ \circ^{\text{C}} \\ 130 \\ \text{C} \\ \text{Temperature Hi} \\ \text{PTO Not Active} \\ \text{Engine Torque Signal Valid} \\ = & \text{TRUE} \\ \text{Boolean} \\ \text{Throttle Position Signal Valid} \\ = & \text{TRUE} \\ \text{Boolean} \\ \text{Dynamic Mode} \\ \text{FALSE} \\ \text{Boolean} \\ \text{This Key} \\ \text{On or Fault} \\ \end{array} \right.$	$\left \begin{array}{cccccccccccccccccccccccccccccccccccc$	$\left \begin{array}{cccccccccccccccccccccccccccccccccccc$

Component/	Fault	Monitor Strategy	Malfunction		Thr	eshold		Secondary		Enable			Ti	me	Mi
System	Code	Description	Criteria		v	alue		Malfunction		Conditions			Req	uired	Illun
								MIL not Illuminated for DTC's:			P0723,				
						C	onditions:		P0742, P27	63, P2764					
										1, P0102, P0103					
										08, P0171, P0172					
										01, P0202, P0203					
										06, P0207, P0208					
										02, P0303, P0304					
									PU300, PU3	07, P0308, P0401	I, P042E				
															One
orque Converter Clutch (TCC)	P0742	TCC System Stuck ON	TCC Slip Speed	>=	-50	RPM									
			TCC Slip Speed	<=	13	RPM									
												>=	2.5	Fail Time (Sec)	
													2.0		
			If Above Conditions Have been Met,												
			and Fail Timer Expired, Increment									>=	6	Fail Counter	
			Fail Counter					TCC Mode		Off					-
								Enable test if Cmnd Gear =	=	OII					
								1stFW and value true	=	1	Boolean				
								Enable test if Cmnd Gear = 2nd							
								and value true	=	0	Boolean				
								Engine Speed Hi	<=	6000	RPM				
								Engine Speed Lo	>=	500	RPM				
								Vehicle Speed HI	<=	511	KPH				
								Vehicle Speed Lo		1	KPH				
								Engine Torque Hi		8191.875	Nm				
								Engine Torque Lo	>=	80	Nm				
								Current Range	≠	Neutral	Range				
								Current Range	¥	Reverse	Range				
								Transmission Sump	<=	130	°C				
								Temperature		150	0				
								Transmission Sump	>=	18	°C				
								Temperature	· -						
								Throttle Position Hyst High	>=	5.0003052	Pct				
								AND							
								Max Vehicle Speed to Meet	<=	8	KPH				
								Throttle Enable							
								Once Hyst High has been met, the enable will remain while		2.0004272	Pct				
								Throttle Position	>=	2.0004272	PCI				
								Disable for Throttle Position	>=	75	Pct				
								Disable if PTO active and value	>=						
								true	=	1	Boolean				
								Disable if in D1 and value true	=	1	Boolean				
									_	I	Doncall				
								Disable if in D2 and value true	=	1	Boolean				
								Disable if in D2 and value true		1	Pooloon				
								Disable if in D3 and value true	=	1	Boolean				1

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			^r ime quired	Mil Illum.
					Disable if in D4 and value true		olean			
					Disable if in D5 and value true	= 1 Bc	olean			
					Disable if in MUMD and value	= 1 Bc	olean			
					true Disable if in TUTD and value		olean			
					true 4 Wheel Drive Low Active		olean			
					Disable if Air Purge active and		olean			
					value false RVT Diagnostic Active		olean			
					Ignition Voltage	>= 8.5996094	V			
					Ignition Voltage Vehicle Speed		V CPH			
					Engine Speed		2PM			
					Engine Speed		2PM			
					Engine Speed is within the		Sec			
					allowable limits for					
					Engine Torque Signal Valid		olean			
					Throttle Position Signal Valid	= TRUE Bo	olean			
						Test Failed				
					Dog to of the l	This Koy				
					P0742 Status is	≠ On or Fault				
						Active				
				Dicablo	MIL not Illuminated for DTC's:	TCM: P0716, P0717, P0722, P072	2			
				Conditions:	MIL HOU INCHINATED TO DIC 5.	P0741, P2763, P2764	3,			
						ECM: P0101, P0102, P0103, P01)6			
						P0107, P0108, P0171, P0172, P0				
						P0175, P0201, P0202, P0203, P02				
						P0205, P0206, P0207, P0208, P03				
						P0301, P0302, P0303, P0304, P03				
						P0306, P0307, P0308, P0401, P04	ZE			
Node 2 Multiplex Valve	P0751	Shift Solenoid Valve A Stuck Off	Commaned Gear Slip	>= 400 RPM						Two
			Commanded Gear	= 1st Lock rpm						Trips
				<= 1.484985352			>=	0.3	Fail Tmr	
			Gear Ratio	>= 1.343017578			=	5	Fail Counts	
			If the above parameters are true							
							≠	0	Neutral Timer	
									(Sec) Fail Timer (Sec)	
							>=		Fail Timer (Sec)	
	I	I	I	I	I	I	>=	0	Counts	1

Component/	Fault	Monitor Strategy	Malfunction		Threshol	ld	Secondary		Enable		Time	Mil
System	Code	Description	Criteria		Value		Malfunction		Conditions		Required	Illum
			Í				Ignition Voltage Lo	>=	8.5996094	Volts		
							Ignition Voltage Hi	<=	31.990234	Volts		
							Engine Speed Lo	>=	400	RPM		
							Engine Speed Hi	<=	7500	RPM		
							Engine Speed is within the		-	6		
							allowable limits for	>=	5	Sec		
							Transmission Fluid					
							Temperature	>=	-6.65625	°C		
							1		5			
									Range			
							Range Shift State	=	Shift	ENUM		
									Completed			
							TPS	>=	0.5004883	%		
							OR					
							Output Speed	>=	36	RPM		
							Throttle Position Signal Valid					
							from ECM	=	TRUE	Boolean		
							Engine Torque Signal Valid					
							from ECM, High side driver is	=	TRUE	Boolean		
							enabled	_	TRUL	Doolean		
							High-Side Driver is Enabled		TRUE	Boolean		
							Input Speed Sensor fault		FALSE	Boolean		
								=				
							Output Speed Sensor fault	=	FALSE	Boolean		
							Default Gear Option is not	=	TRUE			
							present					
							MIL not Illuminated for DTC's:		, P0717, P0722,	P0723,		
						Conditions:		P182E				
									, P0102, P0103,			
								P0107, P010	08, P0171, P0172	2, P0174,		
								P0175, P020	1, P0202, P0203	3, P0204,		
								P0205, P020	6, P0207, P0208	8, P0300,		
								P0301, P030	2, P0303, P0304	4, P0305,		
								P0306, P030	7, P0308, P040	1, P042E		
ode 2 Multiplex Valve	P0752	Shift Solenoid Valve A Stuck On	Gear Box Slip	>= 40	0 RP	M						One T
			Commanded Gear	= 3rc	d Ge	ar						1
			Commanded Gear has Achieved									
			1st Locked OR 1st Free-Wheel OR	TDI		alaan						I
			2nd with Mode 2 Sol. Commanded	= TRL	JE ROO	olean						
			On									
	1	1	If the above parameters are true					1			1	

Component/	Fault	Monitor Strategy	Malfunction Criteria	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required >= Please Refer to Table 16 in Supporting Documents Neutral Timer (Sec)	Illum.
				<= 800 RPM >= 4.259765625 <= 4.708251953				
							>= 1.5 Fail Timer (Sec)	
					Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for High-Side Driver is Enabled Throttle Position Signal Valid from ECM Output Speed OR TPS Range Shift State	<= 7500 RPM >= 5 Sec = TRUE Boolean = TRUE Boolean >= 36 RPM	>= 5 Counts	-
				Disable	Temperature Input Speed Sensor fault Output Speed Sensor fault Default Gear Option is not present	= FALSE Boolean = FALSE Boolean		
				Conditions		ECM: P0710, P0712, 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 Gear Box Slip				>= Please Refer to Table 5 in Neutral Timer Supporting (Sec) Documents	One Tri

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum
			Gear Ratio	= 1st Locked Gear <= 3.015991211 >= 2.728027344				
			If the above parameters are true				>= 1 sec	
							>= 3 counts	
					Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi	>= 8.5996094 Volts <= 31.990234 Volts >= 400 RPM <= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		
					Output Speed OR	>= 36 RPM		
					TPS	>= 0.5004883 % Range		
					Range Shift State	= Shift ENUM Completed		
					Transmission Fluid Temperature	>= -6.65625 °C		
					High-Side Driver is Enabled Throttle Position Signal Valid	= TRUE Boolean = TRUE Boolean		
					from ECM Input Speed Sensor fault Output Speed Sensor fault Default Gear Option is not present	= FALSE Boolean = FALSE Boolean = TRUE		
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0716, P0717, P0722, P0723, P182E		
						ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
able Bleed Solenoid (VBS)	P0776	Pressure Control (PC) Solenoid B Stuck Off [C35R]	Fail Case 1 Case: Steady State 3rd Gear					One
			Commanded Gear Gearbox Slip	= 3rd Gear >= 400 RPM			Please Refer to Table 16 in Neutral Timer Supporting (Sec) Documents	

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable				me	
System	Code	Description	Criteria	Value	Malfunction	Conditions			Req	uired	11
			Command 4th Gear once Output Shaft Speed	<= 800 RPM							
				>= 1.343261719							
				<= 1.484741211							
								>=	3	Fail Timer (Sec))
			It the above condiations are true,					>=	3	3rd Gear Fail	
			Increment 3rd gear fail counter							Counts	
										or	
			and C35R Fail counter					>=	14	3-5R Clutch Fai Counts	1
			Fail Case 2 Case: Steady State 5th Gear							Counts	-
			Commanded Gear	= 5th Gear							
									ease Refe Table 5 ir		
			Gearbox Slip	>= 400 Rpm					Supporting		
									ocuments		
			Intrusive Test: Command 6th Gear								
				Please refer to							
			If attained Game (the same Time	T LL AL							
			If attained Gear=6th gear Time	supporting supporting							
				documents							
			It the above condiations are true,					>=	3	5th Gear Fail	
			Increment 5th gear fail counter						5	Counts	
										or	
			and C35R Fail counter					>=	14	3-5R Clutch Fai Counts	1
					PRNDL State defaulted	= FALSE	Boolean			Counts	
					inhibit RVT	= FALSE	Boolean				
					IMS fault pending indication	= FALSE	Boolean				
					TPS validity flag	= TRUE	Boolean				
					Hydraulic System Pressurized	= TRUE	Boolean				
					Minimum output speed for RVT	>= 36	RPM				
					A OR B						
					(A) Output speed enable	>= 36	RPM				
					(B) Accelerator Pedal enable	>= 0.5004883	Pct				
					Common Enable Criteria Ignition Voltage Lo	>= 8.5996094	Volts				
					Ignition Voltage Lo	>= 8.5996094 <= 31.990234	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				

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Tim		Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Requi	red	Illum.
				Disable Conditions:	HSD Enabled Transmission Fluid Temperature Input Speed Sensor fault Output Speed Sensor fault Default Gear Option is not present MIL not Illuminated for DTC's:	= TRUE Boolean >= -6.65625 °C = FALSE Boolean = FALSE Boolean = 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, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E			
Variable Bleed Solenoid (VBS)	P0777	Pressure Control (PC) Solinoid B	Fail Case 1 Case: Steady State 1st					0	One Tr
		Stuck On [C35R] (Steady State)	Attained Gear slip If the Above is True for Time Intrusive test: (CBR1 clutch exhausted)	<pre>>= 400 RPM Table Based Time Please Refer to Table Enable Time 4 in (Sec) supporting documents</pre>			>= 1.1 >= 2	Fall Timer (Sec) Fail Count in 1st Gear or	
			Fail Case 2 Case: Steady State 2nd gear Max Delta Output Speed Hysteresis	Table Based value Please			>= 3	Total Fail Counts	

Component/	Fault Code	Monitor Strategy	Malfunction Criteria	Threshold	Secondary Malfunction	Enable		me
System	Code	Description	Cintena	Value Tabla Dagad	Mairunction	Conditions	Requ	uired
				Table Based value Please				
				Pofor to Tablo				
			Min Delta Output Speed Hysteresis	>= 23 in rpm/sec				
	1 1			supporting				
				documents				
				Table Based				
				Time Please				
			If the Above is True for Time	>= Refer to Table Sec				
				supporting				
				documents				
			Intrusive test:					
			(CB26 clutch exhausted)					
			Gear Ratio					
			Gear Ratio	>= 1.75				
			If the above parameters are true					
							>= 1.1	Fail Timer (Sec)
							2- 1.1	
							>= 3	Fail Count in 2nd Gear
								or
								Total Fail
							>= 3	Counts
			Fail Case 3 Case: Steady State 4th gear					
				Table Based				
				value Please Refer to Table				
			Max Delta Output Speed Hysteresis	>= Refer to Table 22 in rpm/sec				
				supporting				
				documents				
				Table Based				
				value Please				
			Min Delta Output Speed Hysteresis	>= Refer to Table 23 in rpm/sec				
				supporting				
				documents				
				Table Based				
				Time Please				
			If the Above is True for Time	>= Refer to Table Sec				
				supporting				
				documents				
			Intrusive test:					
			(C1234 clutch exhausted)					
				<= 1.050048828				
				>= 0.949951172				
			If the above parameters are true					
							>= 1.1	Fail Timer (Sec)

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary		Enable				Time	N
System	Code	Description	Criteria	Value	Malfunction		Conditions			Re	quired	IIIu
									>=	3	Fail Count in 4th Gear	1
											or	
										2	Total Fail	
									>=	3	Counts	
			Fail Case 4 Case: Steady State 6th gear	T 11 D								
				Table Based value Please								
				Pofor to Table								
			Max Delta Output Speed Hysteresis	>= 22 in rpm/sec								
				supporting								
				documents Table Based								
				value Diesco								
			Min Dolto Output Spood Unstarasia	Refer to Table								
			Min Delta Output Speed Hysteresis									
				supporting								
				documents Table Based								
				Timo Dioaco								
			If the Above is True for Time	Refer to Table								
			If the Above is the for time									
				supporting								
			Intrusive test:	documents								
			(CB26 clutch exhausted)									
			Gear Ratio	<= 1.050048828					>=	1.1	Fail Timer (Sec)	,
			Gear Ratio	>= 0.949951172					>=	3	counts	
			If the above parameters are true									
									>=	1.1	Fail Timer (Sec))
										_	Fail Count in 6th	1
									>=	3	Gear	
											or	
									>=	3	Total Fail Counts	1
					PRNDL State defaulted	=	FALSE	Boolean			Counts	1
					inhibit RVT	=	FALSE	Boolean				1
					IMS fault pending indication	=	FALSE	Boolean				1
					output speed TPS validity flag	>= =	0 TRUE	RPM Boolean				
					HSD Enabled	=	TRUE	Boolean				
					Hydraulic_System_Pressurized	=	TRUE	Boolean				
						_	INCL	Doolcall				
					A OR B (A) Output speed enable	>=	36	Nm				
					(B) Accelerator Pedal enable		0.5004883	Nm				1
						>=	0.5004883 8.5996094	Volts				1
					Ignition Voltage Lo Ignition Voltage Hi	>= <=	8.5996094 31.990234	Volts				

Component/	Fault	Monitor Strategy	Malfunction	Three		Secondary		Enable		Time	Mil
System	Code	Description	Criteria	Va	lue	Malfunction		Conditions		Required	Illum.
						Engine Speed Lo	>=	400	RPM		
						Engine Speed Hi	<=	7500	RPM		
						Engine Speed is within the allowable limits for	>=	5	Sec		
						if Attained Gear=1st FW					
						Accelerator Pedal enable	>=	5.0003052	Pct		
						if Attained Gear=1st FW Engine		20	Max		
						Torque Enable	>=	20	Nm		
						if Attained Gear=1st FW Engine	<=	8191.875	Nm		
						Torque Enable					
						Transmission Fluid Temperature	>=	-6.65625	°C		
						Input Speed Sensor fault	=	FALSE	Boolean		
						Output Speed Sensor fault	=	FALSE	Boolean		
						MIL not Illuminated for DTC's:		P0717, P0722,	P0723,		
					Conditions:		P182E				
							ECM: P0101	P0102, P0103,	P0106		
								3, P0171, P017			
								, P0202, P020			
								5, P0207, P020			
								2, P0303, P030			
							P0306, P0307	7, P0308, P040	1, P042E		
			Primary Offgoing Clutch is								One Trip
		Pressure Control (PC) Solenoid B	exhausted (See Table 12 in								One mp
Variable Bleed Solenoid (VBS)	P0777	StuckOn [C35R] (Dymanic)	Supporting Documents for Exhaust		Boolean						
			Delay Timers)								
			Primary Oncoming Clutch Pressure	Maximum							
			Command Status	 pressurized 							
			Primary Offgoing Clutch Pressure	Clutch exhaust	t						
			Command Status	command							
				_ Initial Clutch							
			Range Shift Status	≠ Control							
			Attained Gear Slip	<= 40	RPM						
			If the above conditions are true run								
			appropriate Fail 1 Timers Below:								
			fail timer 1	>= 0.5	Fail Time (Sec)						
			(3-1 shifting with Closed Throttle)	0.0							
			fail timer 1	. 0.5							
			(3-2 shifting with Throttle)	>= 0.5	Fail Time (Sec)						
			fail timer 1								
			(3-2 shifting with Closed Throttle)	>= 0.5	Fail Time (Sec)						
I	I	l		I		l				1	I I

Component/	Fault	Monitor Strategy	Malfunction Criteria	т	hreshold	Secondary		Enable			Time		Mi
System	Code	Description	fail timer 1		Value	Malfunction		Conditions			Requir	red	Illur
			(3-4 shifting with Throttle)	>= 0.5	Fail Time (Sec)								
			fail timer 1 (3-4shifting with Closed Throttle)	>= 0.5	Fail Time (Sec)								
			fail timer 1 (3-5 shifting with Throttle)	>= 0.5	Fail Time (Sec)								
			fail timer 1 (3-5 shifting with Closed Throttle)	>= 0.5	Fail Time (Sec)								
			fail timer 1 (5-3 shifting with Throttle)	>= 0.5	Fail Time (Sec)								
			fail timer 1 (5-3 shifting with Closed Throttle)	>= 0.5	Fail Time (Sec)								
			fail timer 1 (5-4 shifting with Throttle)	>= 0.5	Fail Time (Sec)								
			fail timer 1 (5-4 shifting with Closed Throttle)	>= 0.5	Fail Time (Sec)								
			fail timer 1 (5-6 shifting with Throttle)	>= 0.5	Fail Time (Sec)								
			fail timer 1 (5-6 shifting with Closed Throttle)	>= 0.5	Fail Time (Sec)								
			If Attained Gear Slip is Less than Above Cal Increment Fail Timers							= (2) Tin >= Ti F S	al Fail Time Fail 1 + Fail See Enable ners for Fail mer 1, and Reference Supporting able 15 for ail Timer 2	sec	
			If fail timer is greater than threshold increment corresponding gear fail counter and total fail counter										
			3rd gear fail counter							>=	3	3rd gear fail counts OR	
			5th gear fail counter							>=	5	5th gear fail counts	
			Total fail counter							>=	5	OR total fail counts	
						TUT Enable temperature Input Speed Sensor fault Output Speed Sensor fault Command / Attained Gear High Side Driver ON output speed limit for TUT	>= = ≠ = >=	-6.65625 FALSE FALSE 1st TRUE 100	°C Boolean Boolean Boolean RPM				

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
					input speed limit for TUT PRNDL state defaulted IMS Fault Pending Service Fast Learn Mode HSD Enabled Default Gear Option is not present	>= 200 RPM = FALSE Boolean = FALSE Boolean = FALSE Boolean = TRUE Boolean = TRUE		
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0716, P0717, P0722, P0723, P182E ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
	5070/	Pressure Control (PC) Solenoid C	Fail Case 1					One Trip
Variable Bleed Solenoid (VBS)	P0796	Stuck Off [C456] (Steady State)	Fail Case: Steady State 4th Gear				Please See Table 5 For Neutral Timer	
			Gear slip Intrusive test: commanded 5th gear	>= 400 RPM			>= Neutral Time (Sec) Cal	
			If attained Gear ≠5th for time	Please refer to Table 3 in Supporting Documents				
			if the above conditions have been met					
			Increment 4th Gear Fail Counter				>= 3 4th Gear Fail Count OR	
			and C456 Fail Counters				>= 14 C456 Fail Counts	
			Fail Case 2 Case: Steady State 5th Gear Gear slip	>= 400 RPM			Please See Table 5 For Neutral Timer >= Neutral Time (Sec) Cal	
			Intrusive test: commanded 6th gear If attained Gear ≠ 6th for time	Please Refer >= to Table 3 in Shift Time (Sec)			Udi	
			if the above conditions have been met	Documents				

Component/	Fault	Monitor Strategy	Malfunction Criteria	Threshold	Secondary		Enable			Tim		
System	Code	Description	Criteria	Value	Malfunction		Conditions			Requ		+
			Increment 5th Gear Fail Counter						>=	3	5th Gear Fail Count	
											OR	
			and C456 Fail Counters						>=	14	C456 Fail	
									>=	14	Counts	
			Fail Case 3 Case: Steady State 6th Gear							lease See		
									Т	able 5 For	Neutral Timer	
			Gear slip	>= 400 RPM						eutral Time	(Sec)	
										Cal		
			Intrusive test:									
			commanded 5th gear	Please refer to								
			If attained Gear ≠ 5th for time	Table 2 in								
			ii attained Gear 🗲 Stri for time	Supporting Shift Time (Sec)								
			if the choice conditions have been	Documents								
			if the above conditions have been met									
			Increment 6th Gear Fail Counter							3	6th Gear Fail	
			and C456 Fail Counter						>=	3	Count	
											OR	
			and C456 Fail Counter						>=	14	C456 Fail Counts	
					PRNDL State defaulted	=	FALSE	Boolean			obums	-
					inhibit RVT	=	FALSE	Boolean				
					IMS fault pending indication	=	FALSE TRUE	Boolean				
					TPS validity flag	=		Boolean				
					Hydraulic System Pressurized	=	TRUE	Boolean				
					Minimum output speed for RVT	>=	36	RPM				
					A OR B (A) Output speed enable	>=	36	RPM				
					(B) Accelerator Pedal enable	>=	0.5004883	Pct				
					Common Enable Criteria		8.5996094	Volts				
					Ignition Voltage Lo Ignition Voltage Hi	>= <=	8.5996094 31.990234	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	>=	-6.65625	°C				
					Temperature Input Speed Sensor fault	=	FALSE	Boolean				
					OutputSpeed Sensor fault	=	FALSE	Boolean				
					Default Gear Option is not	=	TRUE					
					present	=	INUE					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			ime juired	Mil Illum.
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0716, P0717, P0722, P0723, P182E				
						ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E				
Variable Bleed Solenoid (VBS)	P0797	Pressure Control (PC) Solenoid C	Fail Case 1 Case: Steady State 1st							One Tri
		Stuck On [C456] (Steady State)	Attained Gear slip	>= 400 RPM						
				Table Based Time Please						
			If the Above is True for Time	>= Refer to Table Enable Time 4 in (Sec)						
				supporting						
			Intrusive test:							
			(CBR1 clutch exhausted) Gear Ratio	<= 1.484985352						
				>= 1.343017578						
			If the above parameters are true							
							>=	1.1	Fail Timer (Sec)	
							>=	2	Fail Count in 1st Gear or	
							>=	3	Total Fail Counts	
			Fail Case 2 Case Steady State 2nd	Table Based					oodino	
			Max Delta Output Speed Hysteresis	ZZ 111						
				supporting documents						
				Table Based						
			Min Delta Output Speed Hysteresis	Refer to Table						
				supporting						
			I	documents		I	1			

Component/	Fault	Monitor Strategy	Malfunction Criteria	Threshold	Secondary	Enable	Time	
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	
				Table Based Time Please				
			If the Alberry is True for Times	Refer to Table				
			If the Above is True for Time	17.10				
				supporting				
			Intrucius test.	documents				
			Intrusive test: (CB26 clutch exhausted)					
				<= 1.484985352				
			Gear Ratio	>= 1.343017578				
			If the above parameters are true					
							>= 1.1 Fail Timer	(Sec)
							, Fail Cour	nt in
							>= 3 2nd Ge	ar
							or	
							>= 3 Total fail co	ounts
			Fail Case 3 Case Steady State 3rd					
				Table Based				
				value Please				
			Max Delta Output Speed Hysteresis	>= Refer to Table 22 in rpm/sec				
				supporting				
				documents				
				Table Based				
				value Please Refer to Table				
			Min Delta Output Speed Hysteresis	>= Refer to Table 23 in rpm/sec				
				supporting				
				documents				
				Table Based				
				Time Please				
			If the Above is True for Time	>= Refer to Table Sec 17 in				
				supporting				
				documents				
			Intrusive test: (C35R clutch exhausted)					
				<= 1.484985352				
			Gear Ratio	>= 1.343017578				
			If the above parameters are true					
							>= 1.1 Fail Timer	(Sec)
							Fail Count	in 3rd
							>= 3 Gear	
							OR	
							>= 3 Total Fa	
	1 I		1	l	ı I		Count	>

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary		Enable		Time	Mil
System	Code	Description	Criteria	Value	Malfunction		Conditions		Required	Illum
					PRNDL State defaulted	=	FALSE	Boolean		
					inhibit RVT	=	FALSE	Boolean		
					IMS fault pending indication	=	FALSE 0	Boolean RPM		
					output speed TPS validity flag	>= =	TRUE	Boolean		
					HSD Enabled	=	TRUE	Boolean		
					Hydraulic_System_Pressurized	=	TRUE	Boolean		
					A OR B					
					(A) Output speed enable	>=	36	Nm		
					(B) Accelerator Pedal enable	>=	0.5004883	Nm		
					Ignition Voltage Lo	>=	8.5996094	Volts		
					Ignition Voltage Hi	<=	31.990234	Volts		
					Engine Speed Lo	>=	400	RPM		
					Engine Speed Hi	<=	7500	RPM		
					Engine Speed is within the	>=	5	Sec		
					allowable limits for		-			
					if Attained Gear=1st FW Accelerator Pedal enable	>=	5.0003052	Pct		
					if Attained Gear=1st FW Engine					
					Torque Enable	>=	20	Nm		
					if Attained Gear=1st FW Engine		0404.075			
					Torque Enable	<=	8191.875	Nm		
					Transmission Fluid		-6.65625	°C		
					Temperature	>=				
					Input Speed Sensor fault	=	FALSE	Boolean		
					Output Speed Sensor fault	=	FALSE	Boolean		
					Default Gear Option is not	=	TRUE			
					present					
				Disab	e MIL not Illuminated for DTC's:	TCM: P0716.	P0717, P0722.	P0723.		
				Conditions		P182E				
						ECM: P0101, I				
						P0107, P0108				
						P0175, P0201				
						P0205, P0206 P0301, P0302				
						P0306, P0302				
							,	.,		
			Primary Offgoing Clutch is							One Tr
Variable Bleed Solenoid (VBS)	P0797	Pressure Control (PC) Solenoid C	exhausted (See Table 11 in	= TRUE Boolean						
ימומטוב טובבע סטופווטוע (VDS)	10/7/	Stuck On [C456] (Dynamic)	Supporting Documents for Exhaust							
			Delay Timers)							
			Primary Oncoming Clutch Pressure	= Maximum						
			Command Status	pressurized						
			Primary Offgoing Clutch Pressure	Clutch exhaust						
		1	Command Status	command					1	

Component/	Fault	Monitor Strategy	Malfunction Criteria			eshold	Secondary	Enable		Гime	Mil Illum.
System	Code	Description			Va Initial Clutch	alue	Malfunction	Conditions	Re	quired	ilium
			Range Shift Status	Ŧ	Control						
			Attained Gear Slip	<=	40	RPM					
			If the above conditions are true								
			increment appropriate Fail 1 Timers Below:								
			fail timer 1	>=	0.5	Fail Time (Sec)					
			(4-1 shifting with throttle) fail timer 1	>=	0.5						
			(4-1 shifting without throttle)	>=	0.5	Fail Time (Sec)					
			fail timer 1 (4-2 shifting with throttle)	>=	0.5	Fail Time (Sec)					
			fail timer 1	>-	0.5	Fail Time (Sec)					
			(4-2 shifting without throttle) fail timer 1	/-							
			(4-3 shifting with throttle)	>=	0.5	Fail Time (Sec)					
			fail timer 1 (4-3 shifting without throttle)	>=	0.5	Fail Time (Sec)					
			fail timer 1	>=	0.5	Fail Time (Sec)					
			(5-3 shifting with throttle) fail timer 1								
			(5-3 shifting without throttle)	>=	0.5	Fail Time (Sec)					
			fail timer 1 (6-2 shifting with throttle)	>=	0.5	Fail Time (Sec)					
			fail timer 1	>=	0.5	Fail Time (Sec)					
			(6-2 shifting without throttle)			. ,					
									Total Fail T		
									= (Fail 1 + 2) See Ena		
			If Attained Gear Slip is Less than						Timers for	ail	
			Above Cal Increment Fail Timers						>= Timer 1, a Reference		
									Supportin	g	
									Table 15 f Fail Timer		
										-	
			If fail timer is greater than threshold								
			increment corresponding gear fail counter and total fail counter								
										Fail Counter	
			4th gear fail counter						>= 3	From 4th Gear	
										OR Fail Counter	
			5th gear fail counter						>= 3	From 5th Gear	
										OR Fail Counter	
			6th gear fail counter						>= 3	Fail Counter From 6th Gear	
		l								OR	1

Component/	Fault Code	Monitor Strategy Description	Malfunction Criteria			eshold	Secondary Malfunction	Enable			Tim		Mil Illum.
System	Code	Description	Criteria		Va	alue	Mairunction	Conditior	S		Requir	red Total Fail	illum.
			Total	fail counter						>=	5	Counter	
							TUT Enable temperature Input Speed Sensor fault Output Speed Sensor fault	>= -6.6562 = FALSE = FALSE	Boolean Boolean				
							Command / Attained Gear High Side Driver ON	≠ 1st = TRUE	Boolean Boolean				
							output speed limit for TUT input speed limit for TUT	>= 100 >= 200	RPM RPM				
							PRNDL state defaulted	= FALSE	Boolean				
							IMS Fault Pending	= FALSE	Boolean				
							Service Fast Learn Mode HSD Enabled	= FALSE = TRUE	Boolean Boolean				
							HSD Enabled	= IRUE	Boolean				
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0716, P0717, P07 P182E	22, P0723,				
								ECM: P0101, P0102, P01	13 D0106				
								P0107, P0108, P0171, P0					
								P0175, P0201, P0202, P0					
								P0205, P0206, P0207, P0					
								P0301, P0302, P0303, P0 P0306, P0307, P0308, P0					
Tap Up Tap Down Switch (TUTD)	P0815	Upshift Switch Circuit	Fail Case 1 Tap Up Switch Stud Position in Range	e 1 Enabled	= 0	Boolean							Special No MIL
			Tap Up Switch Stud Position in Range	e 2 Enabled	= 0	Boolean							
			Tap Up Switch Stud Position in Range	e 3 Enabled	= 0	Boolean							
			Tap Up Switch Stud Position in Range	e 4 Enabled	= 0	Boolean							
			Tap Up Switch Stud Position in Range	e 5 Enabled	= 0	Boolean							
			Tap Up Switch Stud Position in Range	e 6 Enabled	= 0	Boolean							
			Tap Up Switch Stud Position in Neut		= 1	Boolean							
			Tap Up Switch Stud Position in Pa		= 1	Boolean							
			Tap Up Switch Stud Position in Rever		= 0	Boolean							
			Тар Up	Switch ON	= TRUE	Boolean				>=	1	Fail Time (Sec)	
			Fail Case 2 Tap Up Switch Stud Position in Range	e 1 Enabled	= 1	Boolean							
			Tap Up Switch Stud	ck in the Up	= 1	Boolean							
	1	l	Position in Range	e 2 Enabled						1			I

Component/	Fault	Monitor Strategy	Malfunction		reshold	Secondary	Ena			me	м
System	Code	Description	Criteria		Value	Malfunction	Condi	tions	Req	uired	Illu
			Tap Up Switch Stuck in the Up Position in Range 3 Enabled	= 1	Boolean						
			Tap Up Switch Stuck in the Up	= 1	Boolean						
			Position in Range 4 Enabled	- 1	Doolean						
			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	= 0	Boolean						
			Position in Neutral Enabled Tap Up Switch Stuck in the Up								
			Position in Park Enabled	= 0	Boolean						
			Tap Up Switch Stuck in the Up	= 0	Boolean						
			Position in Reverse Enabled								
			Tap Up Switch ON NOTE: Both Failcase1 and Failcase	= TRUE	Boolean						
			2 Must Be Met						>= 600	Fail Time (Sec)	
											1
								Enable Time			
						Time Since Last Range Change	>=	(Sec)			
						Ignition Voltage Lo	>= 8.599				
						Ignition Voltage Hi Engine Speed Lo	<= 31.99 >= 4	0234 Volts 00 RPM			
						Engine Speed Hi	<= 75				
						Engine Speed is within the	>=	5 Sec			
						allowable limits for					
							Test	ailed			
						P0815 Status is	→ This	Кеу			
						1 0013 3/8/03/13	Un oi	Fault			
							Ac	ive			
											1
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0816, P0826, P1877, P1915, P176				
					conditions.						
			5.10.4				ECM: None				
Up Tap Down Switch	P0916	Downshift Switch Circuit	Fail Case 1 Tap Down Switch Stuck in the	= 0	Boolean						Sp No
TD)	1 0010		Down Position in Range 1 Enabled	- 0	DUVICALI				1		110

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Threshold Value	Secondary Malfunction	Enable Conditions	Time Required		Mil Illum.
			Tap Down Switch Stuck in the Down Position in Range 2 Enabled	=	0 Boolean					
			Tap Down Switch Stuck in the Down Position in Range 3 Enabled	=	0 Boolean					
			Tap Down Switch Stuck in the Down Position in Range 4 Enabled	=	0 Boolean					
			Tap Down Switch Stuck in the Down Position in Range 5 Enabled	=	0 Boolean					
			Tap Down Switch Stuck in the Down Position in Range 6 Enabled	=	0 Boolean					
			Tap Down Switch Stuck in the Down Position in Range Neutral Enabled	=	1 Boolean					
			Tap Down Switch Stuck in the Down Position in Range Park Enabled	=	1 Boolean					
			Tap Down Switch Stuck in the Down Position in Range Reverse Enabled	=	0 Boolean					
			Tap Down Switch ON	= TR	RUE Boolean			>= 1	sec	
			Fail Case 2 Tap Down Switch Stuck in the Down Position in Range 1 Enabled	=	1 Boolean					
			Tap Down Switch Stuck in the Down Position in Range 2 Enabled	=	1 Boolean					
			Tap Down Switch Stuck in the Down Position in Range 3 Enabled	=	1 Boolean					
			Tap Down Switch Stuck in the Down Position in Range 4 Enabled	=	1 Boolean					
			Tap Down Switch Stuck in the Down Position in Range 5 Enabled	=	1 Boolean					
			Tap Down Switch Stuck in the Down Position in Range 6 Enabled	=	1 Boolean					
			Tap Down Switch Stuck in the Down Position in Neutral Enabled	=	0 Boolean					
			Tap Down Switch Stuck in the Down Position in Park Enabled	=	0 Boolean					
			Tap Down Switch Stuck in the Down Position in Reverse Enabled	=	0 Boolean					

Component/	Fault	Monitor Strategy	Malfunction		shold	Secondary		Enable				me	Mi
System	Code	Description	Criteria Tap Down Switch ON NOTE: Both Failcase1 and Failcase 2 Must Be Met		l ue Boolean	Malfunction		Conditions		>=	Req	uired Sec	Illur
						Time Since Last Range Change	>=	1	Enable Time (Sec)				
						Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for	>= <= >= <=	8.5996094 31.990234 400 7500 5	Volts Volts RPM RPM Sec				
						P0816 Status is	¥	Test Failed This Key On or Fault Active					
					Disable Conditions:		P1877, P191		P1876,				
p Up Tap Down Switch	P0826	Up and Down Shift Switch Circuit	TUTD Circuit Reads Invalid Voltage	= TRUE	Boolean		ECM: None			>=	60	Fail Time (Sec)	Spe
UTD)						Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for	>= <= >= <=	8.5996094 31.990234 400 7500 5	Volts Volts RPM RPM Sec				' No N
						P0826 Status is	¥	Test Failed This Key On or Fault Active					

Component/	Fault	Monitor Strategy	Malfunction		reshold	Secondary		Enable			Tir		Mi
System	Code	Description	Criteria	,	/alue	Malfunction		Conditions			Requ	uired	Illur
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P1761 ECM: None						
ariable 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					>= out	4.4 5	Fail Time (Sec) Sample Time	Tw Trip
						Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable limits for	>= <= >= >=	8.5996094 31.990234 400 7500 5	Volts Volts RPM RPM Sec	of	5	<u>(Sec)</u>	-
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						
ariable Bleed Solenoid (VBS) P096	P0962	Pressure Control (PC) Solenoid A Control Circuit Low Voltage (Line Pressure VBS)	The HWIO reports a low voltage (ground short) error flag	= TRUE	Boolean					>=	1.5	Fail Time (Sec)	One
										out of	1.875	Sample Time (Sec)	
						Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable limits for	>= <= >= <= >=	8.5996094 31.990234 400 7500 5	Volts Volts RPM RPM Sec	0		(900)	
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						
ariable Bleed Solenoid (VBS)	P0963	Pressure Control (PC) Solenoid A Control Circuit High Voltage (Line Pressure VBS)	The HWIO reports a high voltage (open or power short) error flag	= TRUE	Boolean					>=	4.4	Fail Time (Sec)	Tv Tri
								0.500/00/		out of	5	Sample Time (Sec)	
						Ignition Voltage Ignition Voltage Engine Speed Engine Speed	>= <= >= <=	8.5996094 31.990234 400 7500	Volts Volts RPM RPM				

Component/	Fault	Monitor Strategy	Malfunction Criteria	Threshold	Secondary		Enable				me	Mil
System	Code	Description	Cinteria	Value	Malfunction Engine Speed is within the allowable limits f		Conditions 5	Sec		Req	uired	Illum
				C Cond	sable MIL not Illuminated for DTC'							
ariable Bleed Solenoid (VBS)	P0966	Pressure Control (PC) Solenoid B Control Circuit Low Voltage (C35R VBS)	The HWIO reports a low voltage (ground short) error flag	= TRUE Boolean					>= out	0.3	Fail Time (Sec) Sample Time	One
					Ignition Voltag Ignition Voltag Engine Spee Engine Speed is within tt allowable limits f P0966 Status is n	e <= d >= d <= e >=	8.5996094 31.990234 400 7500 5 Test Failed This Key	Volts Volts RPM RPM Sec	of	0.375	(Sec)	_
		Pressure Control (PC) Solenoid B		C Cond	sable MIL not Illuminated for DTC' ions:	S: TCM: None ECM: None	On or Fault Active					One
ariable Bleed Solenoid (VBS)	P0967	Control Circuit High Voltage (C35R VBS)	The HWIO reports a high voltage (open or power short) error flag	= TRUE Boolean					>= out of	0.3 0.375	Fail Time (Sec) Sample Time (Sec)	
					Ignition Voltag Ignition Voltag Engine Spee Engine Speed is within th allowable limits f	e <= d >= d <= e	8.5996094 31.990234 400 7500 5	Volts Volts RPM RPM Sec				
					P0967 Status is n	= =	Test Failed This Key On or Fault Active					

Component/	Fault	Monitor Strategy	Malfunction Criteria		Threshold	Secondary		Enable				me	Mil
System	Code	Description	Criteria		Value	Malfunction MIL not Illuminated for DTC's:	TCM: Nono	Conditions			Req	uired	Illun
					Conditions:		ECM: None						
ariable 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	= TRU	IE Boolean					>= out of	0.3 0.375	Fail Time (Sec) Sample Time (Sec)	One 1
						P0970 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	<= >= <=	8.5996094 31.990234 400 7500 5	Volts Volts RPM RPM Sec				
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						
ariable Bleed Solenoid (VBS)		Pressure Control (PC) Solenoid C Control Circuit High Voltage (C456/CBR1 VBS)	The HWIO reports a high voltage (open or power short) error flag	= TRU	IE Boolean					>=	0.3	Fail Time (Sec)	One
										out of	0.375	Sample Time (Sec)	
						P0971 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	<= >= <=	8.5996094 31.990234 400 7500 5	Volts Volts RPM RPM Sec					
					Disable Conditions:	allowable limits for MIL not Illuminated for DTC's:							

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thre: Val	shold	Secondary Malfunction		Enable Conditions				me uired	Mil Illum.
Shift Solinoid	P0973	Shift Solenoid A Control Circuit Low (Mode 2 Solenoid)	The HWIO reports a low voltage (ground short) error flag	= TI	RUE	Boolean	Manunction		Conditions		>=	кер 1.2	Fail Time (Sec)	One Trip
											out of	1.5	Sample Time (Sec)	
							P0973 Status is not	=	Test Failed This Key On or Fault Active					
							Ignition Voltage Ignition Voltage Engine Speed Engine Speed is within the allowable limits for	>= <= >= >=	8.5996094 31.990234 400 7500 5	Volts Volts RPM RPM Sec				
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						
Shift Solinoid	P0974	Shift Solenoid A Control Circuit High (Mode 2 Solenoid)	The HWIO reports a high voltage (open or power short) error flag	= TI	RUE	Boolean					>=	1.2	Fail Time (Sec)	Two Trips
											out of	1.5	Sample Time (Sec)	
							P0974 Status is not	=	Test Failed This Key On or Fault Active					
							Ignition Voltage Ignition Voltage Engine Speed Engine Speed is within the allowable limits for	>= <= <= >=	8.5996094 31.990234 400 7500 5	Volts Volts RPM RPM Sec				
						Disable Conditions:	MIL not Illuminated for 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	= TI	RUE	Boolean					>=	1.2	Sec	One Tri

Component/	Fault	Monitor Strategy	Malfunction Criteria	Three		Secondary		Enable			Tin		Mil
System	Code	Description	Criteria	Val	lue	Malfunction		Conditions		out	Requ	iired	Illum.
										out of	1.5	Sec	_
						P0977 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	>= <= >= <= >=	8.5996094 31.990234 400 7500 5	Volts Volts RPM RPM Sec				
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						
Tap Up Tap Down Switch (TUTD)	P1761	Tap Up and Down switch signal circuit (rolling count)	Rolling count value received from BCM does not match expected value	= TRUE	Boolean					>=	3	Fail Counter Sample Timer	Specia No MIL
						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	>	10	(Sec)	-
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						
Internal Mode Switch (IMS)	P182E	Internal Mode Switch - Invalid Range	Fail Case 1 Current range	Transition 1 = (bit state 1110)	Range								One Tri
			Previous range	≠ CeTRGR_e_P RNDL_Drive6	Range								
			Previous range	KNDL_DIIVe4									
			Range Shift State Absolute Attained Gear Slip Attained Gear Attained Gear Throttle Position Available	<= Sixth >= First	ENUM rpm								

Component/	Fault	Monitor Strategy	Malfunction		Thres	shold	Secondary		Enable			Tir	ne	N
System	Code	Description	Criteria		Val		Malfunction		Conditions			Requ	uired	Illu
			Throttle Position	>= 8.0	000183105	pct								
			Output Speed	>=	200	rpm								
			Engine Torque	>=	50	Nm								
			Engine Torque	<=	8191.75	Nm								
			If the above conditions are met then								>=	1	Fail Seconds	
			Increment Fail Timer								/-	I	Tall Seconds	
			If Fail Timer has Expired then								>=	5	Fail Counts	
			Increment Fail Counter								>=	5	T all Courits	
			Fail Case 2 Output Speed	<=	70	rpm								1
			The following PRNDL sequence											
			events occur in this exact order:											
			PRNDL state		rive 6 (bit	Range								
				St										
			PRNDL state = Drive 6 for		1	Sec								
					ransition 8									
			PRNDL state		(bit state	Range								
					0111)									
			PRNDL state	= D	rive 6 (bit	Range								
				st	ale 0110)									
					ransition 1	5								
			PRNDL state		(bit state	Range								
					1110)									
			Above sequencing occurs in		1	Sec								
			Neutral Idle Mode	=	Inactive									
			If all conditions above are met											
			Increment delay Timer											
			If the below two conditions are met								>=	3	Fail Seconds	
			Increment Fail Timer		1	C								
			delay timer		1	Sec								
			Input Speed	>=	400	Sec								
			If Fail Timer has Expired then								>=	2	Fail Counts	
			Increment Fail Counter Fail Case 3	Tre	ansition 13				CeTRGR					-
						Range	Previous range	¥	e_PRNDL_					
			Current range		(bit state 0010)	Nange	Previous range	+	e_PRNDL_ Drive4					
					0010)				CeTRGR_					
			Engine Torque	\-	-8192	Nm	Previous range	≠	e_PRNDL_					
			Engine Torque	/-	0172	INTER STREET	Fievious fallye	-	Drive1					
			Engine Torque	<=	8191.75	Nm	IMS is 7 position configuration	=	0	Boolean				
							II UNE TIVIS / FUSILIUTI CUTIIN = 1							
			If the above conditions are met				then the "previous range"							
			then, Increment Fail Timer				criteria above must also be				>=	0.225	Seconds	
							satsified when the "current							1
	1 1			1			range" "Transition 12"				1			1

Component/	Fault	Monitor Strategy	Malfunction Criteria	Threshold	Secondary	Enable		Tir		
System	Code	Description	If Fail Timer has Expired then	Value	Malfunction	Conditions	-	Requ	uired	
			Increment Fail Counter				>=	15	Fail Counts	
			Fail Case 4	Transition 8	Disable Fail Case 4 if last					1
			Current range	= (bit state Range	positive range was Drive 6 and					
				0111)	current range is transition 8					
					Set inhibit bit true if PRNDL =					
					1100 (rev) or 0100 (Rev-Neu					
			Inhibit bit (see definition)	= FALSE	transition 11)					
					Set inhibit bit false if PRNDL = 1001 (park)					
			Steady State Engine Torque	>= 100 Nm	1001 (park)					
			Steady State Engine Torque	<= 8191.75 Nm						
			If the above conditions are met then				>=	0.225	Seconds	
			Increment Fail Timer							
			If the above Condtions have been met, Increment Fail Counter				>=	15	Fail Counts	
				= TRUE Boolean						
			The following PRNDL sequence							
			events occur in this exact order:							
			PRNDL State	= Reverse (bit Range						
				state 1100) Transition 11						
			PRNDL State	= (bit state Range						
				0100)						
			PRNDL State	= Neutral (bit state 0101) Range						
				Transition 11						
			PRNDL State	= (bit state Range						
				0100)						
			Above sequencing occurs in Then delay timer increments	<= 1 Sec						
			Delay timer	>= 5 sec						
			Range Shift State	_ Range Shift						
			-	 Complete <= 50 rpm 						
				<= 50 rpm <= Sixth						
				>= First						
				>= 8.000183105 pct						
			Output Speed : If the above conditions are met	>= 200 rpm						
			In the above conditions are met Increment Fail Timer				>=	20	Seconds	
			Fail Case 6	Illegal (bit	A Open Circuit Definition (flag					1
			Current range	= state 0000 or	set false if the following					
				1000 or 0001)	conditions are met):					
						— 111				
			hao		Current Dense	Transition ≠ 11 (bit				
			and		Current Range	✓ 11 (bit state 0100)				

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description		Value	Malfunction	Conditions	Required	Illum.
			A Open Circuit (See Definition)	= FALSE Boolean	or Last positive state or	e → Neutral (bit state 0101)		
					Previous transition state	0111)		
			If the above Condtions are met then, Increment Fail timer		Fail case 5 delay timer	= 0 sec	>= 6.25 Seconds	
			Fail Case 7 Current PRNDL State	= PRNDL circuit ABCP = 1101 Range				
			and Previous PRNDL state	PRNDL circuit ABCP =1111 Range				
			Input Speed Reverse Trans Ratio Reverse Trans Ratio If the above Condtions are met	>= 150 RPM				
			then, Increment Fail timer				>= 6.25 Seconds	-
			P182E will report test fail when any of the above 7 fail cases are met					-
					Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi	 <= 31.990234 Volts >= 400 RPM <= 7500 RPM 		
					Engine Speed is within the allowable limits for Engine Torque Signal Valid	>= 5 Sec		
				Disable Conditions		TCM: P0716, P0717, P0722, P0723, P07C0, P07BF, P077C, P077D		
						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			eshold alue	Secondary Malfunction	_	Enable Conditions			Tin Requ		Mil Illum.
Internal Mode Switch (IMS)	P1915	Internal Mode Switch Does Not Indicate Park/Neutral (P/N) During Start	PRNDL State is	¥	Park or Neutral	Enumeration						•		One Tri
			The following events must occur Sequentially										Enable Time	
			5 - 5 - 1	<=	50	RPM					>=	0.25	(Sec)	-
			Then Engine Speed Between Following Cals											
			Engine Speed Lo Hist	>=	50	RPM							Enable Time	
			Engine Speed Hi Hist	<=	480	RPM					>=	0.06875	(Sec)	
			Then Final Engine Speed		525	RPM								
			Final Transmission Input Speed	>=	100	RPM					>=	1.25	Fail Time (Sec)	_
							DTC has Ran this Key Cycle?	=	FALSE	Boolean				
							Ignition Voltage Lo Ignition Voltage Hi	>= <=	6 31.999023	V V				
							Ignition Voltage Hyst High (enables above this value)	>=	5	V				
							Ignition Voltage Hyst Low (disabled below this value)	<=	2	V				
							Transmission Output Speed P1915 Status is	<=	90 Test Failed This Key On or Fault Active	rpm				
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0722, ECM: None	P0723					
ransmission Control Module TCM)	P2534	Ignition Switch Run/Start Position Circuit Low	TCM Run crank active (based on voltage thresholds below)	=	FALSE	Boolean								One T
			Ignition Voltage High Hyst (run crank goes true when above this value)		5	Volts					>=	280	Fail Counts (25ms loop)	
			Ignition Voltage Low Hyst (run crank goes false when below this value)		2	Volts					Out of	280	Sample Counts (25ms loop)	
							ECM run/crank active status available	=	TRUE	Boolean				1
							ECM run/crank active status	=	TRUE	Boolean				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		shold lue	Secondary Malfunction		Enable Conditions			ime uired	M
System	Code	Description	Unterta	va	lue	Manunction		Conditions		Red	uirea	
					Disable Conditions:		TCM: None ECM: None					
nsmission Control Module :M)	P2535	Ignition Switch Run/Start Position Circuit High	TCM Run crank active (based on voltage thresholds below) Ignition Voltage High Hyst (run	= TRUE	Boolean						Fail Counts	One
			crank goes true when above this value)	5	Volts					>= 280	(25ms loop)	
			Ignition Voltage Low Hyst (run crank goes false when below this value)	2	Volts					Out 280 of 280	Sample Counts (25ms loop)	i
						ECM run/crank active status available	=	TRUE	Boolean			
						ECM run/crank active status	=	FALSE	Boolean			
					Disable Conditions:		TCM: None ECM: None					
		Pressure Control (PC) Solenoid D	Fail Case 1				LCIVI. NUTIC					On
iable Bleed Solenoid (VBS)	P2714	Stuck Off [CB26]	Fail Case I Case: Steady State 2nd Gear							Please See	2	
			Gear slip	>= 400	RPM					>= Table 5 For Neutral Tim Cal		
			Intrusive test: commanded 3rd gear									
			If attained Gear = 3rd for Time	Table Based Time Please >= see Table 2 in Supporting Documents	Enable Time (Sec)							
			If Above Conditions have been met									
			Increment 2nd gear fail count							>= 3	2nd Gear Fail Count or	
			and CB26 Fail Count							>= 14	CB26 Fail Coun	ıt
			Fail Case 2 Case: Steady State 6th Gear Gear slip	>= 400	RPM					Please See Table 5 For Neutral Tim	Neutral Timer]
			Intrusive test:							Cal	৮ (১৬৫)	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions				ime juired	Mi Illur
			If attained Gear = 5th For Time	Table Based Time Please see Table 2 in Supporting Documents								
			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 inhibit RVT IMS fault pending indication TPS validity flag Hydraulic System Pressurized	= = = =	FALSE FALSE FALSE TRUE TRUE	Boolean Boolean Boolean Boolean Boolean				
					Minimum output speed for RVT	>=	0	RPM				
					A OR B (A) Output speed enable	>=	36	RPM				
					(B) Accelerator Pedal enable	>=	0.5004883	Pct				
					Common Enable Criteria Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for	>= <= >= <= >=	8.5996094 31.990234 400 7500 5	Volts Volts RPM RPM Sec				
					Throttle Position Signal valid	=	TRUE	Boolean				
					HSD Enabled Transmission Fluid Temperature	= >=	TRUE -6.65625	Boolean °C				
					Input Speed Sensor fault Output Speed Sensor fault Default Gear Option is not present	= = =	FALSE FALSE TRUE	Boolean Boolean				

Component/	Fault	Monitor Strategy	Malfunction	TI	nreshold	Secondary	Enable	Time	N
System	Code	Description	Criteria		Value	Malfunction	Conditions	Required	Illu
						MIL not Illuminated for DTC's:	TCM: P0716, P0717, P0722, P0723,		
					Conditions:		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		
			Primary Offgoing Clutch is						On
	80345	Pressure Control (PC) Solenoid D	exhausted (See Table 13 in						On
riable Bleed Solenoid (VBS)		Stuck On [CB26] (Dynamic)	Supporting Documents for Exhaust	= TRUE	Boolean				
			Delay Timers)						
			Primary Oncoming Clutch Pressure	= Maximur					
			Command Status	pressuriz	ed				
			Primary Offgoing Clutch Pressure	_ Clutch exh					
			Command Status	comman	d				
			Range Shift Status	≠ Initial Clut					
			-	Control					
			Attained Gear Slip	<= 40	RPM				
			If above coditons are true,						
			increment appropriate Fail 1 Timers						
			Below:						
			fail timer 1	>= 0.5	Fail Time (Sec)				
			(2-1 shifting with throttle) fail timer 1		. ,				
			(2-1 shifting without throttle)	>= 0.5	Fail Time (Sec)				
			fail timer 1	. 0.5	Fail Time (Cae)				
			(2-3 shifting with throttle)	>= 0.5	Fail Time (Sec)				
			fail timer 1	>= 0.5	Fail Time (Sec)				
			(2-3 shifting without throttle) fail timer 1						
			(2-4 shifting with throttle)	>= 0.5	Fail Time (Sec)				
			fail timer 1	0.5					
			(2-4 shifting without throttle)	>= 0.5	Fail Time (Sec)				
			fail timer 1	>= 0.5	Fail Time (Sec)				
			(6-4 shifting with throttle)		1 411 1 1110 (000)				
			fail timer 1 (6-4 shifting without throttle)	>= 0.5	Fail Time (Sec)				
			fail timer 1						
			(6-5 shifting with throttle)	>= 0.5	Fail Time (Sec)				
			fail timer 1	>= 0.5	Fail Time (Sec)				
			(6-5 shifting without throttle)	- 0.0					

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum
			If Attained Gear Slip is Less than Above Cal Increment Fail Timers				Total Fail Time = (Fail 1 + Fail 2) See Enable Timers for Fail >= Timer 1, and sec Reference Supporting Table 15 for Fail Timer 2	
			If fail timer is greater than threshold increment corresponding gear fail counter and total fail counter					
			2nd gear fail counter				>= 3 Fail Counter From 2nd Gea	
			6th gear fail counter				OR Fail Counter >= 3 From 6th Gear OR	
			total fail counter				>= 5 Total 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	= TRUE Boolean >= 100 RPM >= 200 RPM = FALSE Boolean		
				Disable Conditions	MIL not Illuminated for DTC's:	TCM: P0716, P0717, P0722, P0723, P182E		
						ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
ariable Bleed Solenoid (VBS)	P2715	Pressure Control (PC) Solenoid D	Fail Case 1 Case: Steady State 1st					One
		Stuck On [CB26] (Steady State)						

Component/	Fault	Monitor Strategy	Malfunction Criteria	Threshold	Secondary Malfunction	Enable		Time
System	Code	Description	Cintena	Value Table Based	Mairunction	Conditions	R	equired
				Time Please				
			If the Above is True for Time	Pofor to Tablo, Enable Time				
			II the Above is the for time	4 in (Sec)				
				supporting				
			Intructive test.	documents				
			Intrusive test: (CBR1 clutch exhausted)					
				<= 3.015991211				
				>= 2.728027344				
			If the above parameters are true					
							>= 1.1	Fail Timer (Sec)
								Fail Count in 1st
							>= 5	Gear
								or
							>= 5	Total Fail
			Fail Case 2 Case: Steady State 2nd Case					Counts
			Fail Case 2 Case: Steady State 3rd Gear	Table Based				
				value Please				
			Max Delta Output Speed Hysteresis	>= Refer to Table rpm/sec 22 in				
			Max Delta Output Speed Hysteresis					
				supporting documents				
				Table Based				
			Min Delta Output Speed Hysteresis	Refer to Table				
			Will Delta Output Speed Hysteresis	20 111				
				supporting documents				
				Table Based				
				Time Please				
			If the Above is True for Time	>= Refer to Table Sec				
				17 111				
				supporting documents				
			Intrusive test:	uocuments				
			(C35R clutch exhausted)					
			Gear Ratio					
			Gear Ratio	>= 2.728027344				
			If the above parameters are true					
							>= 1.1	Fail Timer (Sec)
								Fail Count in 3rd
							>= 3	Gear
								Or Total Fail
							>= 5	Total Fail Counts
			Fail Case 3 Case: Steady State 4rd Gear					Counts

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	N
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	IIIu
				Table Based value Please				
			Mary Dalka Ordanis Cara ad Ukratana ia	Refer to Table				
			Max Delta Output Speed Hysteresis					
				supporting				
				documents Table Based				
			Min Dalla Octavit Care ed Unatorezia	Refer to Table				
			Min Delta Output Speed Hysteresis	==				
				supporting				
				documents Table Based				
				Timo Dlogso				
			If the Above is True for Time	Refer to Table				
			If the Above is True for Time	>= 17 in ^{Sec}				
				supporting				
			Intrusive test:	documents				
			(C1234 clutch exhausted)					
				<= 0.779052734				
			Gear Ratio	>= 0.704956055				
			If the above parameters are true					
							>= 1.1 Fail Timer (Sec	
							>= 3 Fail Count in 4t	h
							Gear or	
							Total Fail	
							>= 5 Counts	
			Fail Case 4 Case: Steady State 5th Gear	Table Based				
				value Dieace				
				Pefer to Table				
			Max Delta Output Speed Hysteresis	>= 22 in rpm/sec				
				supporting				
				documents Table Based				
				I DI				
			Min Delta Output Speed Hysteresis	Refer to Table				
			Will Della Output Speed Hysteresis					
				supporting				
				documents Table Based				
				Timo Ploaso				
			If the Above is True for Time	>= Refer to Table Sec				
				17				
				supporting documents				
			Intrusive test:	assuments				
			(C35R clutch exhausted)					

Corrections Correcti	Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions				ïme quired	
PRND: State defaulter				Gear Ratio	<= 0.779052734								T
Image: Section of the section of th										>=	1.1	Fail Timer (Sec))
$\left \begin{array}{c c c c c } & \hline \\ \\ & \hline \\ & \hline \\ \\ & \hline \\ \\ & \hline \\ & \hline \\ \\ \\ & \hline \\ \\ \\ \\$										>=	3		۱
PRNDL State defaulted = FALSE Boolean IMS fault pending indication = FALSE Boolean odput speed >= 0 RPM TPS validity tigg = TRUE Boolean Hydraulic_System_Pressurized = TRUE Boolean Hydraulic_System_Pressurized = TRUE Boolean A OR B - - TRUE Boolean (B) Accelerator Podd enable >= 0.5004883 Nm (B) Accelerator Podd enable >= 0.5004883 Nm (B) Accelerator Podd enable >= 0.5004883 Nm Ignition Voltage Lo >= 4.00 RP = 1.990234 Volts Engine Speed IN = 3.00022 Pct = Tatamed Gear-1st FW = 5 Sec If Attained Gear-1st FW = 2.00 Nm If Attained Gear-1st FW Engine = 2.00 Nm If Attained Gear-1st FW Engine = 2.00 Nm If Attained Gear-1st FW Engine = 6.66625 °C Tarsmission Fildit = - 6.66625 °C Torque Core denaine and = FALSE Bool										>=	5	Total Fail	
A OR B >= 36 Nm (A) Output speed enable >= 0.5004883 Nm (B) Accelerator Pedal enable >= 0.5004883 Nm Ignition Voltage Li >= 8.5996094 Volts Ignition Voltage Li >= 8.000 RPM Engine Speed Li >= 400 RPM Engine Speed Li >= 5 Sec allowable limits for if Attained Gear=1st FW Engine Torque Enable >= 5.0003052 Pct If Attained Gear=1st FW Engine Torque Enable >= 20 Nm If Attained Gear=1st FW Engine Torque Enable >= 6.65625 °C Transmission Fluid Temperature >= FALSE Boolean						inhibit RVT IMS fault pending indication output speed TPS validity flag	= = >= =	FALSE FALSE 0 TRUE	Boolean Boolean RPM Boolean			Counts	
(A) Output speed enable >= 36 Nm (B) Accelerator Pedal enable >= 0.5004883 Nm (B) Accelerator Pedal enable >= 0.5004883 Nm Ignition Voltage Li >= 8.5996094 Volts Ignition Voltage Hi <=						Hydraulic_System_Pressurized	=						
Image: Section of the section of th						(A) Output speed enable							
airowabie infinits for if Attained Gear=1st FW Accelerator Pedal enable if Attained Gear=1st FW Engine Torque Enable if Attained Gear=1st FW Engine Torque Enable Torque Enable Transmission Fluid Temperature Input Speed Sensor fault PALSE Boolean Output Speed Sensor fault FALSE Boolean						Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the	>= <= >= <=	8.5996094 31.990234 400 7500	Volts Volts RPM RPM				
Torque Enable >= 20 Nm if Attained Gear=1st FW Engine <=						if Attained Gear=1st FW	>=						
Torque Enable <=						if Attained Gear=1st FW Engine Torque Enable	>=	20	Nm				
Input Speed Sensor fault = FALSE Boolean Output Speed Sensor fault = FALSE Boolean Default Coar Option is not						Torque Enable Transmission Fluid							
						Input Speed Sensor fault Output Speed Sensor fault	=	FALSE FALSE	Boolean				

Component/	Fault	Monitor Strategy	Malfunction		shold	Secondary		Enable			Ti		N
System	Code	Description	Criteria	Va	lue	Malfunction		Conditions			Req	uired	Illu
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0716, P182E	P0717, P0722, F	20723,				
							P0107, P010 P0175, P020 P0205, P020 P0301, P030	P0102, P0103, I 8, P0171, P0172 1, P0202, P0203 6, P0207, P0208 2, P0303, P0304 7, P0308, P0401	, P0174, , P0204, , P0300, , P0305,				
iable Bleed Solenoid (VBS)		Pressure Control (PC) Solenoid D Control Circuit Low (CB26 VBS)	The HWIO reports a low voltage (ground short) error flag	= TRUE	Boolean					>=	0.3	Fail Time (Sec)	On
										out of	0.375	Sample Time (Sec)	
						P2770 Status is not	=	Test Failed This Key On or Fault Active				\/	-
						Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the	>= <= >= <=	8.5996094 31.990234 400 7500 5	Volts Volts RPM RPM Sec				
					Disable Conditions:	allowable limits for MIL not Illuminated for DTC's:	TCM: None						
							ECM: None						
iable Bleed Solenoid (VBS)		Pressure Control (PC) Solenoid D Control Circuit High (CB26 VBS)	The HWIO reports a high voltage (open or power short) error flag	= TRUE	Boolean					>=	0.3	Fail Time (Sec)	Or
										out of	0.375	Sample Time (Sec)	
						P2721 Status is not	=	Test Failed This Key On or Fault Active		U		(966)	
						Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the	>= <= >= <=	8.5996094 31.990234 400 7500 5	Volts Volts RPM RPM Sec				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None		
Variable Bleed Solenoid (VBS)	P2723	Pressure Control (PC) Solenoid E Stuck Off	Fail Case 1 Case: Steady State 1st Gear Gear slip Intrusive test: commanded 2nd gear	>= 400 RPM			Please See Table 5 For Neutral Timer Neutral Time (Sec) Cal	One Tr
			If attained Gear ≠ 2nd for Time	Please refer to				
			If Above Conditions have been met, Increment 1st gear fail counter				>= 3 1st Gear Fail Count	
			and C1234 fail counter				>= 14 Or C1234 Clutch Fail Count	
			Fail Case 2 Case: Steady State 2nd Gear Gear slip	>= 400 RPM			Please See Table 5 For Neutral Timer >= Neutral Time (Sec) Cal	
			Intrusive test: commanded 3rd gear If attained Gear ≠ 3rd for Time	Please refer to Table 3 in				
				>= Supporting Shift Time (Sec) Documents				
			If Above Conditions have been met, Increment 2nd gear fail counter				>= 3 2nd Gear Fail Count	
			and C1234 fail counter				>= 14 Or Fail Count	
			Fail Case 3 Case: Steady State 3rd Gear Gear slip	>= 400 RPM			Please See Table 5 For Neutral Timer Neutral Time (Sec) Cal	
			Intrusive test: commanded 4th gear If attained Gear ≠ 4th for time	Please refer to Table 3 in Shift Time (Sec)				
			n attained Gear ≠ 4th for time	>= Supporting Documents				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold	Secondary Malfunction		Enable			Tin		
System	Code	Description	Ciliena	Value	Maifunction		Conditions			Requ	ired	+-"
			If Above Conditions have been met,						>=	3	3rd Gear Fail	
			Increment 3rd gear fail counter						>=	3	Count	
											or	
											C1234 Clutch	
			and C1234 fail counter						>=	14	Fail Count	
			Fail Case 4 Case: Steady State 4th Gear								T di Oodin	1
									Р	lease See		
			Coorelin	>= 400 RPM					Т	able 5 For	Neutral Timer	
			Gear slip	>= 400 RPM					>= Ne	eutral Time	(Sec)	
										Cal		
			Intrusive test:									
			commanded 5th gear									
				Please refer to								
			If attained Gear = 5th For Time	>= Table 3 in Shift Time (Sec)								
				Supporting Documents								
				Documents								
			If Above Conditions have been met,						>=	3	4th Gear Fail	
			Increment 4th gear fail counter							5	Count	
											or	
			and C1004 fail asymptot							14	C1234 Clutch	
			and C1234 fail counter						>=	14	Fail Count	
					PRNDL State defaulted	=	FALSE	Boolean				1
					inhibit RVT	=	FALSE	Boolean				
					IMS fault pending indication	=	FALSE	Boolean				
					TPS validity flag	=	TRUE	Boolean				
					Hydraulic System Pressurized	=	TRUE	Boolean				
					5 5							
					Minimum output speed for RVT	>=	0	RPM				
					A OR B							
					(A) Output speed enable	>=	36	RPM				
					(B) Accelerator Pedal enable	>=	0.5004883	Pct				
					Common Enable Criteria							
					Ignition Voltage Lo	>=	8.5996094	Volts				
					Ignition Voltage Hi	<=	31.990234	Volts				
					Engine Speed Lo	>=	400	RPM				
					Engine Speed Hi	<=	7500	RPM				
					Engine Speed is within the	>=	5	Sec				
					allowable limits for							
					Throttle Position Signal valid	=	TRUE	Boolean				
					HSD Enabled	=	TRUE	Boolean				
					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					
	1				· · · ·				1			1

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Threshold Value		Secondary Malfunction	Enable Conditions	Time Required	M
									·	
								TCM: P0716, P0717, P0722, P0723,		
					Condi	tions:		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		
	00704	Pressure Control (PC) Solenoid E	Primary Offgoing Clutch is exhausted (See Table 10 in							Or
iable Bleed Solenoid (VBS)	P2724	Stuck On (Dynamic)	Supporting Documents for Exhaust	=	TRUE Boolean					
			Delay Timers) Primary Oncoming Clutch Pressure	M	laximum					
			Command Status		essurized					
			Primary Offgoing Clutch Pressure		ch exhaust					
			Command Status		ommand					
			Range Shift Status		ial Clutch Control					
			Attained Gear Slip		40 RPM					
			If the above conditions are true increment appropriate Fail 1 Timers							
			Below:							
			fail timer 1	>=	0.5 sec					
			(2-6 shifting with throttle) fail timer 1							
			(2-6 shifting without throttle)	>=	0.5 sec					
			fail timer 1 (3-5 shifting with throttle)	>=	0.5 sec					
			fail timer 1	>=	0.5 sec					
			(3-5 shifting without throttle) fail timer 1							
			(4-5 shifting with throttle)	>=	0.5 sec					
			fail timer 1 (4-5 shifting without throttle)	>=	0.5 sec					
			fail timer 1		0.5					
			(4-6 shifting with throttle)	>=	0.5 sec					
			fail timer 1 (4-6 shifting without throttle)	>=	0.5 sec					

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
			If Attained Gear Slip is Less than Above Cal Increment Fail Timers				Total Fail Time = (Fail 1 + Fail 2) See Enable Timers for Fail >= Timer 1, and sec Reference Supporting Table 15 for Fail Timer 2	
			If fail timer is greater than threshold increment corresponding gear fail counter and total fail counter					
			2nd gear fail counter				>= 3 Fail Counter From 2nd Ge	
			3rd gear fail counter				>= 3 Fail Counter From 3rd Gea	
			4th gear fail counter				>= 3 Fail Counter From 4th Gea	
			total fail counter				>= 5 Total 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	>= -6.65625 °C = FALSE Boolean = FALSE Boolean ≠ 1st Boolean >= TRUE Boolean >= 100 RPM >= 200 RPM = FALSE Boolean = FALSE Boolean = TRUE Boolean		
				Disable Conditions:		TCM: P0716, P0717, P0722, P0723, P182E ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0300, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305,		

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable			ime	Mi
System	Code	Description	Criteria	Value	Malfunction	Conditions		Rec	quired	Illur
Variable Bleed Solenoid (VBS)	P2724	Pressure Control (PC) Solenoid E Stuck On (Steady State)	Fail Case 1 Case: 5th Gear							One
		enter en (eletady enter)		Table Based						
				value Please						
			Max Delta Output Speed Hysteresis	>= Refer to Table 22 in rpm/sec						
			· · · · · · · · · · · · · · · · · · ·	22 in supporting						
				documents						
				Table Based						
				value Please						
			Min Delta Output Speed Hysteresis	>= Refer to Table 23 in rpm/sec						
				supporting documents						
				Table Based						
				Time Please						
			If the Above is True for Time	>= Refer to Table Sec						
				17 11						
				supporting documents						
			Intrusive test:	documento						
			(C35R clutch exhausted)							
			Gear Ratio							
				>= 1.343017578						
			If the above parameters are true							
							>=	1.1	Fail Timer (Sec	
							>=	1.1		
							>=	3	Fail Count in 5th Gear	1
									OR	
								3	Total Fail	
			5 1 0 0 (1 0				>=	J	Counts	_
			Fail Case 2 Case: 6th Gear	Table Based						
				valuo Ploaso						
			Max Delta Output Speed Hysteresis	Refer to Table						
			Max Della Output Speed Hysteresis							
				supporting						
				documents Table Based						
				value Please						
			Min Delta Output Speed Hysteresis	Refer to Table						
			win Dena Output Speed Hystelesis							
				supporting documents						1
				Table Based						
				Time Please						1
			If the Above is True for Time	Refer to Table						
				17.11						
				supporting						
	I	I	1	documents	i I		1			1

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary		Enable				ime	N
System	Code	Description	Criteria	Value	Malfunction		Conditions			Rec	luired	III
				<= 1.484985352 >= 1.343017578								
			ii the above parameters are true									
									>=	1.1	Fail Timer (Sec)	
									>=	3	Fail Count in 6th Gear	
									>=	3	OR Total Fail Counts	
					PRNDL State defaulted inhibit RVT IMS fault pending indication output speed TPS validity flag HSD Enabled	= = >= = =	FALSE FALSE FALSE 0 TRUE TRUE	Boolean Boolean RPM Boolean Boolean				
					Hydraulic_System_Pressurized	=	TRUE	Boolean				
					A OR B (A) Output speed enable	>=	36	Nm				
					(B) Accelerator Pedal enable	>=	0.5004883	Nm				
					Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the	>= <= >= <= >=	8.5996094 31.990234 400 7500 5	Volts Volts RPM RPM Sec				
					allowable limits for if Attained Gear=1st FW Accelerator Pedal enable if Attained Gear=1st FW Engine	>= >=	5.0003052 20	Pct				
					Torque Enable if Attained Gear=1st FW Engine Torque Enable	<=	8191.875	Nm				
					Transmission Fluid Temperature	>=	-6.65625	°C				
					Input Speed Sensor fault Output Speed Sensor fault Default Gear Option is not present	= = =	FALSE FALSE TRUE	Boolean Boolean				

Component/	Fault	Monitor Strategy	Malfunction		shold	Secondary		Enable			Ti		N
System	Code	Description	Criteria	Va	lue	Malfunction		Conditions			Req	uired	III
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0716, P182E	P0717, P0722, F	20723,				
							P0107, P010 P0175, P020 P0205, P020 P0301, P030	P0102, P0103, F 8, P0171, P0172, 1, P0202, P0203, 6, P0207, P0208, 2, P0303, P0304, 7, P0308, P0401,	, P0174, , P0204, , P0300, , P0305,				
riable Bleed Solenoid (VBS)		Pressure Control (PC) Solenoid E Control Circuit Low (C1234 VBS)	The HWIO reports a low voltage (ground short) error flag	= TRUE	Boolean					>=	0.3	Fail Time (Sec)	
										out of	0.375	Sample Time (Sec)	
						P2729 Status is not	=	Test Failed This Key On or Fault Active					
						Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the	>= <= >= <=	8.5996094 31.990234 400 7500 5	Volt Volt RPM RPM Sec				
						allowable limits for MIL not Illuminated for DTC's:		5	000				
					Conditions:		ECM: None						
riable Bleed Solenoid (VBS)		Pressure Control (PC) Solenoid E Control Circuit High (C1234 VBS)	The HWIO reports a high voltage (open or power short) error flag	= TRUE	Boolean					>=	0.3	Fail Time (Sec)	Or)
		(,								out of	0.375	Sample Time (Sec)	
						P2730 Status is not	=	Test Failed This Key On or Fault Active		01		(000)	
						Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the	>= <= >= <=	8.5996094 31.990234 400 7500 5	Volt Volt RPM RPM Sec				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		eshold alue	Secondary Malfunction		Enable Conditions			Tir Requ		Mil Illum
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						
Variable Bleed Solenoid (VBS)	P2763	Torque Converter Clutch Pressure High	The HWIO reports a low pressure/high voltage (open or power short) error flag	= TRUE	Boolean					>=	4.4	Fail Time (Sec)	Two Trip:
										out of	5	Sample Time (Sec)	
						P2763 Status is not	=	Test Failed This Key On or Fault Active					
						Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the	>= <= >= <=	8.5996094 31.990234 400 7500	Volt Volt RPM RPM				
						allowable limits for High Side Driver Enabled	>= =	5 TRUE	Sec Boolean				
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0658, ECM: None	P0659					
/ariable Bleed Solenoid (VBS)	P2764	Torque Converter Clutch Pressure Control Solenoid Control Circuit Low	The HWIO reports a high pressure/low voltage (ground short) error flag	= TRUE	Boolean					>=	4.4	MPH	One
			en or nag							out of	5	MPH	
						P2764 Status is not	=	Test Failed This Key On or Fault Active					
						Ignition Voltage Ignition Voltage Engine Speed Engine Speed	>= <= >= <=	8.5996094 31.990234 400 7500	Volt Volt RPM RPM				
						Engine Speed is within the allowable limits for High Side Driver Enabled	>= =	5 TRUE	Sec Boolean				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria			eshold alue	Secondary Malfunction		Enable Conditions				ime uired	Mil Illum.
						Disable Conditions:		TCM: P0658 ECM: None	, P0659					
Communication	U0073	Controller Area Network Bus Communication Error	CAN Hardware Circuitry Detects a Low Voltage Error	=	TRUE	Boolean					>=	62	Fail counts (≈ 10 seconds)	One Tri
			Delay timer	>=	0.1125	Sec					Out of	70	Sample Counts (≈ 11 seconds)	
							Stabilization delay Ignition Voltage Ignition Voltage Power Mode	<=	3 8.5996094 31.990234 Run	sec Volt Volt				
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						
Communication	U0100	Lost Communications with ECM (Engine Control Module)	CAN messages from ECM are not received by the TCM	=	TRUE	Boolean					>=	12	sec	One Tri
							Stabilization delay Ignition Voltage Ignition Voltage Power Mode	>= >= =	3 8.5996094 31.990234 Run	sec Volt Volt				
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: U0073 ECM: None						

Supporting Documents

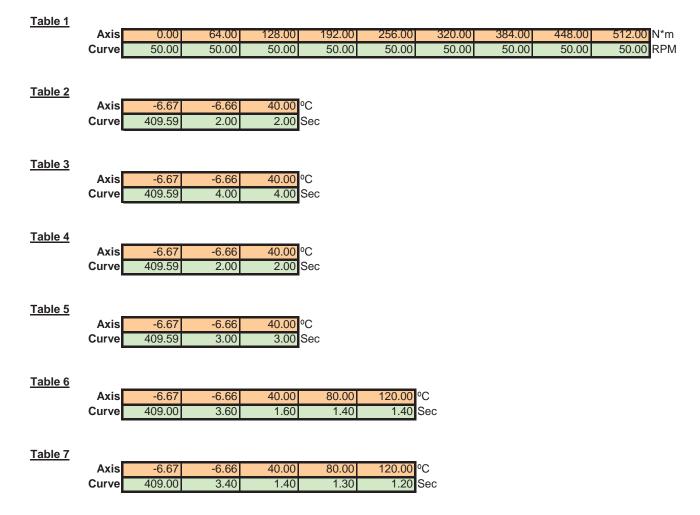


Table 8							
	Axis	-6.67	-6.66	40.00	80.00	120.00 °C	
	Curve	409.00	3.60	1.60	1.50	1.40 Sec	
Table 9	_	La construction de la constructi					
	Axis	-6.67	-6.66	40.00	80.00	120.00 °C	
	Curve	409.00	3.30	1.30	1.20	1.10 Sec	
Table 10							
	Axis	-40.00	-20.00	0.00	30.00	110.00 °C	
	Curve	3.10	1.90	1.10	0.80	0.60 Sec	
Table 11	.	40.00	00.00				
	Axis	-40.00	-20.00	0.00	30.00	110.00 °C	
	Curve	1.80	1.20	0.60	0.40	0.30 Sec	
Table 12		40.00		0.001	00.00		
	Axis	-40.00 2.20	-20.00	0.00	30.00	110.00 °C	
	Curve	2.20	1.40	0.90	0.70	0.40 Sec	
Table 13	A	40.00	00.00	0.00	20.00	440.00	
	Axis Curve	-40.00 2.60	-20.00 1.00	0.00	30.00 0.30	110.00 ⁰C 0.20 Sec	
	Curve	2.00	1.00	0.50	0.30	0.20 380	
Table 14	.	40.00					
	Axis	-40.00	-20.00	0.00	30.00	110.00 °C	
	Curve	3.00	0.90	0.50	0.30	0.20 Sec	
Table 15							
	Axis	-40.00	-30.00	-20.00	-10.00	0.00	10.00
	Curve	0.00	0.00	0.00	0.00	0.00	0.00

20.00 0.00 30.00 0.00 40.00 ℃ 0.00 Sec

Table 16

Axis	-6.67	-6.66	40.00	°C
Curve	409.59	2.50	2.50	Sec

Table 17

Axis	-6.67	-6.66	40.00	⁰С
Curve	0.40	0.35	0.30	Sec

Table 18

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

Table 19

Axis	-40.10	-40.00	-20.00	0.00	30.00	60.00	100.00	149.00	149.10 °C	2
Curve	256.00	50.00	45.00	40.00	34.00	25.00	20.00	20.00	256.00 °C	2

Table 20

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

Table 21

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

Table 22

Axis	-6.67	-6.66	40.00	°C
Curve	8191.75	8191.75	8191.75	RPM/Sec

Table 23

Axis	-6.67	-6.66	40.00	°C
Curve	8191.75	8191.75	8191.75	RPM/Sec

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description					Required	Illum.
Lateral Acceleration Sensor Signal C124F Lateral Acceleration Sensor Circuit Low	Lateral Acceleration Sensor Circuit	Lateral Acceleration Sensor Signal Value	<= -3.85 [G]	Ignition Voltage	> 9000 [mV] for 3 sec continuously	180 sec	No MIL "Special	
			Ignition Voltage Battery Voltage	> 9000 [mV] for 10 [msec] continuously > 10.2 [V]		C"		
			Battery Voltage	<= 32.0 [V]				
			r l	The TCM has completed the read operation of its non-volatile memory	(all 4 criteria for 2 [sec] continuously)			
					Diagnostic Service Request to Disable Normal Communication	= NOT PRESENT		
					U0121 (Lost Communication with Anti-Lock Brake System (ABS) Control Module)	= NOT DETECTED		
					P0826 (Up and Down Shift Switch Circuit)	= NOT DETECTED		
					C1251 (Lateral Acceleration Sensor Performance)	= NOT DETECTED		
					P175F (Acceleration Sensor Signal message Counter Incorrect)	= NOT DETECTED		
Lateral Acceleration Sensor Signal	C1250	Lateral Acceleration Sensor Circuit	Lateral Acceleration Sensor Signal Value	>= 3.85 [G]	Ignition Voltage	> 9000 [mV] for 3 sec continuously	180 sec	No MIL
		High			Ignition Voltage	> 9000 [mV] for 10 [msec] continuously		"Special C"
					Battery Voltage Battery Voltage	> 10.2 [V] <= 32.0 [V]		÷
					The TCM has completed the read operation of its non-volatile	<= 52.0 [V]		
					memory	(all 4 criteria for 2 [sec] continuously)		
					Diagnostic Service Request to Disable Normal Communication	= NOT PRESENT		
					U0121 (Lost Communication with Anti-Lock Brake System (ABS) Control Module)	= NOT DETECTED		
					P0826 (Up and Down Shift Switch Circuit)	= NOT DETECTED		
					C1251 (Lateral Acceleration Sensor Performance) = NOT DETECTED	= NOT DETECTED		
					P175F (Acceleration Sensor Signal message Counter Incorrect)	= NOT DETECTED		
Lateral Acceleration Sensor Signal	C1251	Lateral Acceleration Sensor Performance	Lateral Acceleration Sensor Signal Value	= unchanged	Ignition Voltage	> 9000 [mV] for 3 sec continuously	240 msec	No MIL "Special
		renormance			Ignition Voltage Battery Voltage	> 9000 [mV] for 10 [msec] continuously > 10.2 [V]		C"
					Battery Voltage	<pre>> 10.2 [V] <= 32.0 [V]</pre>		
					The TCM has completed the read operation of its non-volatile			
					memory	(all 4 criteria for 2 [sec] continuously)		
					Diagnostic Service Request to Disable Normal Communication	= NOT PRESENT		
					U0121 (Lost Communication with Anti-Lock Brake System (ABS) Control Module)	= NOT DETECTED		
					C124F (Lateral Acceleration Sensor Circuit Low)	= NOT DETECTED		
					C1250 (Lateral Acceleration Sensor Circuit High)	= NOT DETECTED		
					P175F (Acceleration Sensor Signal message Counter Incorrect)	= NOT DETECTED		
					P077D (Output Speed Sensor Circuit Low)	= NOT DETECTED		
					P077C (Output Speed Sensor Circuit High)			
					P0722 (Output Speed Sensor No Pulse)			
					Vehicle Speed	>= 15 [kph]		
					Absolute Value of Lateral Acceleration Sensor Signal Value CAN signal	0.53 [G] < "Value" < 3.85 [G]		
System Voltage	P0563	System Voltage High	Battery Voltage	> 18 [V]	Ignition Voltage	> 9000 [mV]	10 sec	1
					The Input Speed signal is available from the Input Speed Sensor	= TRUE		
					Input Speed	> 400 [rpm] for [> 2 sec]		
					P07C0 (Input/Turbine Speed Sensor "A" Circuit High)			
					P07BF (Input/Turbine Speed Sensor "A" Circuit Low) P0717 (Input/Turbine Speed Sensor "A" Circuit No Signal)	= NOT DETECTED = NOT DETECTED		
	I	I	I			1	1	

Component / System	Fault Code	Monitor Strategy / Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					OR			
					Ignition Voltage	> 9000 [mV]		
					Engine speed	> 400 [rpm] for [> 2 sec]		
					Engine speed signal validity	= VALID		
					U0073 (CAN Bus-OFF)	= NOT DETECTED		
					U0100 (Lost Communication with ECM/PCM "A")	= NOT DETECTED		
Internal Control Module Memory	P0601	Internal Control Module Memory	Read each memory location in the Flash ROM	Checksums do not match	Ignition Voltage	> 9000 [mV]	100 msec	1
		Checksum Error	and calculate the checksum. Compare the calculated checksum to the checksum originally stored in Flash ROM.		(Diagnostic test is only executed during TCM initialization, immediately after the TCM is powered up)			
lateral Ocatal Madula Marca	P0603	lateral Control Madula Kaon Albus	Compare calculated checksum with stored	Checksums do not match			100 msec	4
Internal Control Module Memory Keep Alive Memory (KAM)	P0603	Internal Control Module Keep Alive Memory (KAM) Error	compare calculated checksum with stored checksum.	Checksums do not match	Ignition Voltage (Diagnostic test is only executed during TCM initialization, immediately after the TCM is powered up)	> 9000 [mV]	100 msec	I
Internal Control Module Random	P0604	Internal Control Module Random	Compare memory location with expected value	If any 8-bit memory location	Junitian Vallage	- 0000 (m)/l	100 msec	1
Access Memory (RAM)	10004	Access Memory (RAM) Error	OxAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA	reads a different number than was written to it, the TCM recognizes this as a RAM malfunction.	Ignition Voltage (Diagnostic test is only executed during TCM initialization, immediately after the TCM is powered up)	> 9000 [mV]		
Transmission Control Module	P0606	Control Module Processor	Main Processor Failure		(none)	(none)	10 msec	1
(тсм)			This TCM is an ISO 26262 (System Functional Safety) compliant module. In order to confirm that the TCM control system functioning properly, the TCM is equipped with a secondary CPU which validates the basic operation / calculations of the primary CPU (and ultimately, the control system software). There are several Safety Integrity Functions which are capable of detecting microprocessor or TCM hardware					

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description	וופומנפט ווומווטווכנוטווס, אוווכוו איטטוט ופקטוופ נוופ	1		1	Required	Illum.
			activation of safe state reactions. The TCM performs checks on the processor performance every 10 msec. If any of the following checks fail a single time, then this malfunction is confirmed. CPU Core Check malfunction confirmed ROM Check malfunction confirmed RAM Check malfunction confirmed Program Flow Check malfunction confirmed	= TRUE = TRUE = TRUE = TRUE				
Transmission Control Module (TCM)	P0606	Control Module Processor	Communication Failure with Sub Processor The Main and Sub Processor both check for correct communication with eachother every 10 msec. If either processor detects a communication error a single time, this malfunction is confirmed. Communication Error between Main and Sub Processors is detected	= TRUE	(none)	(none)	10 msec	1
Transmission Control Module (TCM)	P0606	Control Module Processor	Solenoid Cut Malfunction (Main OR Sub Processor Solenoid Cut Line) During a TCM power-down, both the Primary and Secondary CPU's perform a test on their ability to cut (override) the command current to the linear shift solenoids. The basic test performed by each CPU is as follows: • After commanding an all solenoid current to the feedback current from linear solenoids SL1 to SL5 (all drive clutch linear solenoids) is less than a calibrated threshold for a calibrated time period. (Note that this calibrated threshold is less than the solenoid standby current) If the above test does NOT pass, a malfunction is assumed and a flag is stored in the TCM non- volatile memory. Upon the next TCM power-up, the OBD system will report the malfunction and illuminate the MIL. Main Processor Solenoid Cut Request Feedback Current for any of the solenoids (SL1 - SL5) OR Sub Processor Solenoid Cut Request Feedback Current for any of the solenoids (SL1 - SL5)	= ACTIVE > 20 [mA] = ACTIVE > 20 [mA]	TCM is powering down (Ignition Voltage transitions from High to Low)	= TRUE	100 msec	

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description					Required	Illum.
Transmission Range Sensor "A" Circuit	P0705	Transmission Range Switch Circuit	Transmission Range Sensor P,R,N, and D Circuits Vehicle Speed P077D (Output Speed Sensor Circuit Low) P077C (Output Speed Sensor Circuit High) P0722 (Output Speed Sensor No Pulse)	 > (Battery Voltage - 2 [V]) >= 30 [kph] = NOT DETECTED = NOT DETECTED = NOT DETECTED 	Ignition Voltage Battery Voltage Engine Speed Engine Speed Signal Validity U0100 (Lost Communication with ECM/PCM "A") U0073 (CAN Bus-OFF) The TCM has completed the read operation of its non-volatile memory Emergency Mode (*4)	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] > 400 [RPM] = VALID = NOT DETECTED = NOT DETECTED (all 8 criteria for 2 [sec] continuously) = NOT ACTIVE	30 sec	1
Transmission Range Sensor "A" Circuit	P0706	Transmission Range Switch Performance	2 or more Transmission Range Sensor P,R,N, or D Circuits	< 2 [V]	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously)	5 sec	1
Transmission Fluid Temperature Sensor "A" Circuit	P0711	Transmission Fluid Temperature Sensor "A" Circuit Range/Performance	Difference between Initial ATF Temperature Value and the Initial Engine Coolant Temperature Value (*) (*) After the Ignition Switch is turned ON and the TCM is initialized, the difference between the ATF Temperature and Engine Coolant Temperature is stored in memory. Once the enable criteria have been met, that value is compared to a calibrated threshold. If the value exceeds the calibrated threshold, the TCM will determine that the ATF temperature is not rational and that a malfunction has occurred.	> Difference_Temp_Map (*13)	Ignition Voltage Battery Voltage Engine Speed Signal Validity U0100 (Lost Communication with ECM/PCM "A") U0073 (CAN Bus-OFF) The TCM has completed the read operation of its non-volatile memory ATF Temperature at Power-up ATF Temperature Vehicle Speed Change in Engine Coolant temperature Propulsion System Off Time Propulsion System Off Time Propulsion System Off Time Validity Engine Coolant Temperature Signal Status U0073 (CAN Bus-OFF) U0100 (Lost Communication with ECM/PCM "A") P077D (Output Speed Sensor Circuit Low) P0772 (Output Speed Sensor Circuit High) P0772 (Output Speed Sensor No Pulse) P0713 (Transmission Fluid Temperature Sensor "A" Circuit High) P0712 (Transmission Fluid Temperature Sensor "A" Circuit Low) Emergency Mode (*4) Solenoid Cut Condition ("Note 3) Time since Solenoid Cut ("Note 3) control has been INACTIVE	<pre>> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] > 400 [RPM] = VALID = NOT DETECTED = NOT DETECTED (all 8 criteria for 2 [sec] continuously) -55 [deg C] < ATF Temp < 200 [deg C] > 20 [deg C] > 20 [deg C] > 24 [km/h], for [400 sec cumulatively] > +5 [deg C] > 8 [hours] = VALID = Signal OK for 400 [sec] = NOT DETECTED = NOT ACTIVE > 8 [sec]</pre>	10 msec	2

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description					Required	Illum
ransmission Fluid Temperature iensor "A" Circuit	P0711	Transmission Fluid Temperature Sensor "A" Circuit Range/Performance	ATF Temperature (*) (*) <detection1> The first diagnostic is designed to check the ATF temperature value at start-up and confirm that it gradually increases over a period of time, once the vehicle has been driven at a speed above a calibrated threshold. This is done by checking if the ATF temperature has remained below a calibrated threshold value for a calibrated period of time. This diagnostic routine will only be able to detect a malfunction if the actual ATF temperature at TCM power-up is less than the aforementioned threshold value.</detection1>	<= 20 [deg C]	Ignition Voltage Battery Voltage Engine Speed Signal Validity U0100 (Lost Communication with ECM/PCM "A") U0073 (CAN Bus-OFF) The TCM has completed the read operation of its non-volatile memory ATF Temperature P0713 (Transmission Fluid Temperature Sensor "A" Circuit High) P0712 (Transmission Fluid Temperature Sensor "A" Circuit Low) Range Selector Position Switch P0705 (Transmission Range Switch Circuit) P0706 (Transmission Range Switch Performance) Vehicle speed Emergency Mode (*4) Solenoid Cut Condition (*Note 3) Time since Solenoid Cut (*Note 3) control has been INACTIVE	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] > 400 [RPM] = VALID = NOT DETECTED = NOT DETECTED (all & criteria for 2 [sec] continuously) -55 [deg C] < ATF Temp < 200 [deg C] = NOT DETECTED = NOT ACTIVE = NOT ACTIVE > 8 [sec]	10 min	2
			OR					
	ATF Temperature T/C Heat Load (*) <detection2> The second diagnostic checks for a stuck ATF value by analyzing the estimated torque converter (T/C) Heat Load (*) over time. The T/C heat load calculation is used by other existing transmission controls, and therefore provides an excellent metric by which the rationality of the ATF temperature value can be</detection2>	<= 20deg.C >= otcal_map (*3)	Ignition Voltage Battery Voltage Engine Speed Engine Speed Signal Validity U0100 (Lost Communication with ECM/PCM "A") U0073 (CAN Bus-OFF) The TCM has completed the read operation of its non-volatile memory	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] < = 32.0 [V] > 400 [RPM] = VALID = NOT DETECTED = NOT DETECTED (all 8 criteria for 2 [sec] continuously)	193 sec minimum (Depending on the vehicle operating conditions and driving pattern, this algorithm may take longer than 10 min to detect a	r		
	determined during warm-up. For this diagnostic test, the T/C Heat Load, which is calculated each task cycle by the TCM, is continually summed. Over time, this sum will become a large value, and during that time the ATF temperature must be increasing. A malfunction is determined if the value of the ATF temperature has remained below a calibrated threshold temperature and the value of the T/C Heat Load Sum becomes greater than a		ATF Temperature P0713 (Transmission Fluid Temperature Sensor "A" Circuit High) P0712 (Transmission Fluid Temperature Sensor "A" Circuit Low) Emergency Mode (*4) Input Speed CAN signal validity Output Speed CAN signal validity	-55 [deg C] < ATF Temp < 200 [deg C] = NOT DETECTED = NOT DETECTED = NOT ACTIVE = VALID = VALID	malfunction. In that case, the algorithm above will catch the malfunction first.)	3		

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description					Required	Illum.
			calibrated threshold (based on the ATF temperature value when the test started). If the ATF temperature value becomes less than the value stored when the summing of the T/C heat load started, or exceeds the calibrated threshold, the heat load calculation sum will be cleared.					
			 (*) T/C Heat Load = (TCCF x Torque Capacity x (Engine Speed – Input Speed x Tr)) [kW] TCCF: T/C Capacity Factor Tr: Torque Ratio (Note): The Heat Load is only calculated if the Output Speed is greater than a calibrated minimum threshold. 					
Transmission Fluid Temperature Sensor "A" Circuit	P0712	Transmission Fluid Temperature Sensor "A" Circuit Low	Transmission Fluid Temperature Sensor Value	> 200 [degC]	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously)	60 sec	1
Transmission Fluid Temperature Sensor "A" Circuit	P0713	Transmission Fluid Temperature Sensor "A" Circuit High	Transmission Fluid Temperature Sensor Value	< -55 [degC]	Ignition Voltage Battery Voltage Battery Voltage Engine Speed Signal Validity U0100 (Lost Communication with ECM/PCM "A") U0073 (CAN Bus-OFF) The TCM has completed the read operation of its non-volatile memory	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] > 400 [RPM] = VALID = NOT DETECTED = NOT DETECTED (all 8 criteria for 2 [sec] continuously)	12 sec	1
					Drive Time (*)	> 1 [minute] (cumulative)		
					(*) Drive Time is defined as follows:		-	
					Range Selector Position Switch	= D Range		
					P0705 (Range Selector Switch B+ Short / Open)	= NOT DETECTED		
					P0706 (Range Selector Switch GND Short)	= NOT DETECTED		
Input/Turbine Speed Sensor "A" Circuit	P0717	Input/Turbine Speed Sensor "A" Circuit No Signal	Number of pulses received from the Output Speed Sensor while no pulses are received from the Input Speed Sensor. The time to complete the test is a function of output shaft speed.	>= 6500 pulses	Ignition Voltage Battery Voltage Battery Voltage Engine Speed Engine Speed Signal Validity U0100 (Lost Communication with ECM/PCM "A") U0073 (CAN Bus-OFF) The TCM has completed the read operation of its non-volatile memory	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] > 400 [RPM] = VALID = NOT DETECTED = NOT DETECTED (all 8 criteria for 2 [sec] continuously)	At Max Output Speed: 2.4 [sec] At Min Output Speed: 54.2 [sec]	1

Component / System	Fault Code	Monitor Strategy / Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Gystem					Emergency Mode (*4) Range Selector Position Switch P0705 (Transmission Range Switch Circuit) P0706 (Transmission Range Switch Performance) Garage Shift Control has been INACTIVE for this amount of time continuously Shift Control has been INACTIVE for this amount of time continuously C1 OFF Control has been INACTIVE for this amount of time continuously C2 OFF Control has been INACTIVE for this amount of time continuously C2 OFF Control has been INACTIVE for this amount of time continuously C2 OFF Control has been INACTIVE for this amount of time continuously C2 OFF Control has been INACTIVE for this amount of time continuously C2 OFF Control has been INACTIVE for this amount of time continuously C2 OFF Control has been Sensor Circuit Low) P0722 (Output Speed Sensor Circuit High) P0722 (Output Speed Sensor No Pulse) Output Speed P0974 (Shift Solenoid "A" Control Circuit High) P0973 (Shift Solenoid "A" Control Circuit Low) Status of all of the Gear Ratio malfunctions: (P0967, P0971, P2721, P2730, P2739, P0962, P2764, P0778, P0798, P2716, P2720, P2729, P2734, P0748, P2761) P07C0 (Input/Turbine Speed Sensor "A" Circuit High) P07E7 (Input/Turbine Speed Sensor "A" Circuit Low) P0717 (Input/Turbine Speed Sensor "A" Circuit No Signal) Solenoid Cut Condition ("Note 3) Time since Solenoid Cut ("Note 3) control has been INACTIVE	<pre>= NOT ACTIVE = D Range = NOT DETECTED = NOT DETECTED T_GarageFin (*1) T_ShiftFin (*1) T_C1ctrl/Fin (*1) T_C3ctrl/Fin (*1) >= 2nd Gear = NOT DETECTED = NOT ACTIVE >= 8 sec</pre>		
Output Speed Sensor Circuit	P0722	Output Speed Sensor Circuit No Signal	Number of pulses received from the Input Speed Sensor while no pulses are received from the Output Speed Sensor. The time to complete the test is a function of input shaft speed.	>= 13000 pulses	Ignition Voltage Battery Voltage Battery Voltage Engine Speed Signal Validity U0100 (Lost Communication with ECM/PCM "A") U0073 (CAN Bus-OFF) The TCM has completed the read operation of its non-volatile memory Emergency Mode (*4) Range Selector Position Switch P0705 (Transmission Range Switch Circuit) P0706 (Transmission Range Switch Performance) Garage Shift Control has been INACTIVE for this amount of time continuously Shift Control has been INACTIVE for this amount of time continuously	 > 9000 [mV] for 10 [msec] continuously > 9000 [mV] for 10 [msec] continuously > 10.2 [V] < 32.0 [V] > 400 [RPM] > VALID NOT DETECTED (all 8 criteria for 2 [sec] continuously) = NOT ACTIVE = D Range = NOT DETECTED = NOT DETECTED = NOT DETECTED = NOT DETECTED = T_GarageFin (*1) T_ShiftFin (*1) 	At Max Input Speed: 8.9 [sec] At Idle Input Speed: 108.3 [sec]	1

Component / System	Fault Code	Monitor Strategy / Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
System	Code	Description			C2 OFF Control has been INACTIVE for this amount of time	1	Required	mun.
					C2 OFF Cohtrol has been INACTIVE for this amount of time continuously P07C0 (Input/Turbine Speed Sensor "A" Circuit High) P07BF (Input/Turbine Speed Sensor "A" Circuit No Signal) P0974 (Shift Solenoid "A" Control Circuit High) P0973 (Shift Solenoid "A" Control Circuit Low) Status of all of the Gear Ratio malfunctions: (P0967, P0971, P2721, P2730, P2739, P0963, P2763, P0966, P0970, P2720, P2729, P2738, P0962, P2764, P0778, P0798, P2716, P2725, P2734, P0748, P2761)	T_C3ctrlFin (*1) = NOT DETECTED = NOT DETECTED = NOT DETECTED = NOT DETECTED = NOT DETECTED = NOT DETECTED = NOT DETECTED		
					Output Speed calculated by Input Speed sensor	>= 300 [rpm]		
					P077D (Output Speed Sensor Circuit Low) P077C (Output Speed Sensor Circuit High)	= NOT DETECTED = NOT DETECTED		
					Solenoid Cut Condition (*Note 3)	= NOT ACTIVE		
					Time since Solenoid Cut (*Note 3) control has been INACTIVE	>= 8 [sec]		
Gear Ratio (6th Gear)	P0729	Gear 6 Incorrect Ratio	Difference between actual Gear Ratio and 6th Gear Ratio	> 20 [%]	Current Gear	= 6TH GEAR	12 sec (cumulatively)	1
					Output Speed Ignition Voltage Battery Voltage Engine Speed Engine Speed Signal Validity U0100 (Lost Communication with ECM/PCM "A") U0073 (CAN Bus-OFF) The TCM has completed the read operation of its non-volatile memory	>= 500 [rpm] > 9000 [mV] for 10 [msec] > 10.2 [V] < 32.0 [V] > 400 [RPM] = VALID = NOT DETECTED = NOT DETECTED (all 8 criteria for 2 [sec] continuously)		
					Emergency Mode (*4) Neutral Avoidance Control Solenoid Cut Condition (*Note 3) Time since Solenoid Cut (*Note 3) control has been INACTIVE	= NOT ACTIVE = NOT ACTIVE = NOT ACTIVE > 8 [sec]		
					P0974 (Shift Solenoid *A" Control Circuit High) P0973 (Shift Solenoid *A" Control Circuit Low) Status of all of the Gear Ratio malfunctions: (P0967, P0971, P2721, P2730, P2739, P0963, P2763, P0966, P0970, P2720, P2729, P2738, P0962, P2764, P0778, P0798, P2716, P2725, P2734, P0748, P2761) P07C0 (Input/Turbine Speed Sensor *A" Circuit High) P0717 (Input/Turbine Speed Sensor *A" Circuit Low) P0717 (Output Speed Sensor CA" Circuit Low) P0777 (Output Speed Sensor CA" Circuit High) P0729 (Output Speed Sensor CA" Circuit High) P0720 (Output Speed Sensor Circuit High) P0720 (Output Speed Sensor Circuit High) P0723 (System Voltage Low Supply 2) (*Note 1) P0563 (System Voltage High) P0563 (Inition Switch Run/Start Position Circuit High) P0601 (Internal Control Module Memory Checksum Error) P0604 (Internal Control Module Random Access Memory (RAM) Error)	ALL Malfunctions = NOT DETECTED		

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description			U0073 (CAN Bus-OFF) U0100 (Lost Communication with ECM/PCM "A") Accelerator Effective Position malfunction (*Note 2) Engine Actual Steady State Torque malfunction (*Note 2) Non-Transmission Regulated Steady State Torque malfunction (*Note 2) Engine Speed malfunction (*Note 2)		Required	IIIum
					Range Selector Position Switch P0705 (Transmission Range Switch Circuit) P0706 (Transmission Range Switch Performance) Garage Shift Control has been INACTIVE for this amount of time continuously Shift Control has been INACTIVE for this amount of time continuously The Input Speed signal is available from the Input Speed Sensor The Output Speed signal is available from the Output Speed Sensor ATF Temperature Quick Stop Detection Flag (*Note 4) Safe Gear Control has been INACTIVE for this amount of time continuously The TCM is not commanding a neutral condition as a reaction to Safe Gear Control.	= D Range = NOT DETECTED = NOT DETECTED T_GarageFin (*1) T_ShiftFin (*1) = TRUE = TRUE >= -20 [deg C] = FALSE tmr_inh_GE (*1) = TRUE TRUE		
					Difference between actual Gear Ratio and 7th Gear Ratio	< 4 [%] for 1 [sec] continuously		
Gear Ratio (6th Gear Stuck)	atio (6th Gear Stuck) P0729 Gear 6 Incorrect Ratio Difference between actual Gear Ratio and 7th Gear Ratio	Difference between actual Gear Ratio and 7th Gear Ratio	< 4 %	Current Gear Output Speed Input Torque Ignition Voltage Battery Voltage Battery Voltage Engine Speed Signal Validity	= 6TH GEAR >= 60 [rpm] >= 50 [Nm] OR <= -50 [Nm] (occur at least 1 time during detection) > 9000 [mV] for 10 [msec] > 10.2 [V] <= 32.0 [V] > 400 [RPM] = VALID	5 sec	1	
			Engine Speed Signal Validity U0100 (Lost Communication with ECM/PCM "A") U0073 (CAN Bus-OFF) The TCM has completed the read operation of its non-volatile memory Emergency Mode (*4) Neutral Avoidance Control Solenoid Cut Condition (*Note 3)	= VALID = NOT DETECTED = NOT DETECTED (all 8 criteria for 2 [sec] continuously) = NOT ACTIVE = NOT ACTIVE = NOT ACTIVE				

Component /	Fault Code	Monitor Strategy / Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
System	Code	Description				. 9 [acc]	Required	IIIum
					Time since Solenoid Cut (*Note 3) control has been INACTIVE P0974 (Shift Solenoid "A" Control Circuit High) P0973 (Shift Solenoid "A" Control Circuit Low) Status of all of the Gear Ratio malfunctions: (P0967, P0971, P2721, P2730, P2739, P0963, P2763, P0976, P2716, P2725, P2734, P0748, P2761) P07C0 (Input/Turbine Speed Sensor "A" Circuit High) P07BF (Input/Turbine Speed Sensor "A" Circuit No Signal) P077D (Output Speed Sensor Circuit Low) P0777 (Output Speed Sensor Circuit High) P0772 (Output Speed Sensor Circuit High) P0752 (Output Speed Sensor Circuit High) P0592 (System Voltage Low Supply 2) (*Note 1) P0563 (System Voltage High) P0604 (Internal Control Module Memory Checksum Error) P0604 (Internal Control Module Random Access Memory (RAM) Error) U0073 (CAN Bus-OFF) U0100 (Lost Communication with ECM/PCM "A") Accelerator Effective Position malfunction (*Note 2) Engine Actual Steady State Torque malfunction (*Note 2) Engine Actual Steady State Torque malfunction (*Note 2) Engine Speed malfunction (*Note 2)	ALL Malfunctions = NOT DETECTED		
					Range Selector Position Switch P0705 (Transmission Range Switch Circuit) P0706 (Transmission Range Switch Performance) Garage Shift Control has been INACTIVE for this amount of time continuously Shift Control has been INACTIVE for this amount of time continuously The Input Speed signal is available from the Input Speed Sensor The Output Speed signal is available from the Output Speed Sensor ATF Temperature Quick Stop Detection Flag (*Note 4) Safe Gear Control has been INACTIVE for this amount of time continuously The TCM is not commanding a neutral condition as a reaction to Safe Gear Control.	= D Range = NOT DETECTED = NOT DETECTED T_GarageFin (*1) T_ShiftFin (*1) = TRUE = TRUE >= -20 [deg C] = FALSE tmr_inh_GE (*1) = TRUE		
		1		1		1	1	1
ear Ratio (1st Gear Stuck)	P0731	Gear 1 Incorrect Ratio	Difference between actual Gear Ratio and 2nd Gear Ratio	< 4 [%]	Current Gear	= 1ST GEAR	2.25 sec	1

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description					Required	Illum
			Difference between actual Gear Ratio and 3rd Gear Ratio	< 4 [%]	Input Speed	<= 6000 [rpm]		
			Gear Ratio			{if ATF Temp >= 0 [degC]}		
						>= 80 [Nm]		
			OR		Engine Torque	{if ATF Temp < 0 [degC]}		
						>= 150 [Nm]		
			Difference between actual Gear Ratio and 4th	< 4 [%]	Ignition Voltage	> 9000 [mV] for 10 [msec]		
			Gear Ratio		Battery Voltage	> 10.2 [V]		
			OR		Battery Voltage Engine Speed	<= 32.0 [V] > 400 [RPM]		
			Difference between actual Gear Ratio and 5th	< 4 [%]	Engine Speed Signal Validity	= VALID		
			Gear Ratio		U0100 (Lost Communication with ECM/PCM "A")	= NOT DETECTED		
					U0073 (CAN Bus-OFF)	= NOT DETECTED		
					The TCM has completed the read operation of its non-volatile			
					memory	(all 8 criteria for 2 [sec] continuously)		
					Emergency Mode (*4)			
					Neutral Avoidance Control Solenoid Cut Condition (*Note 3)	= NOT ACTIVE = NOT ACTIVE		
					Time since Solenoid Cut (*Note 3)	> 8 [sec]		
					P0974 (Shift Solenoid "A" Control Circuit High)	ALL Malfunctions = NOT DETECTED		
					P0973 (Shift Solenoid "A" Control Circuit Low) Status of all of the Gear Ratio malfunctions:			
					(P0967, P0971, P2721, P2730, P2739, P0963, P2763, P0966,			
					P0970, P2720, P2729, P2738, P0962, P2764, P0778, P0798,			
					P2716, P2725, P2734, P0748, P2761)			
					P07C0 (Input/Turbine Speed Sensor "A" Circuit High)			
					P07BF (Input/Turbine Speed Sensor "A" Circuit Low) P0717 (Input/Turbine Speed Sensor "A" Circuit No Signal)			
					P077D (Output Speed Sensor "A" Circuit No Signal)			
					P077C (Output Speed Sensor Circuit High)			
					P0722 (Output Speed Sensor No Pulse)			
					P0592 (System Voltage Low Supply 2) (*Note 1)			
					P0563 (System Voltage High)			
					P2535 (Ignition Switch Run/Start Position Circuit High) P0601 (Internal Control Module Memory Checksum Error)			
					P0602 (Control Module Programming Error)			
					P0604 (Internal Control Module Random Access Memory			
					(RAM) Error)			
					U0073 (CAN Bus-OFF)			
					U0100 (Lost Communication with ECM/PCM "A")			
					Accelerator Effective Position malfunction (*Note 2) Engine Actual Steady State Torque malfunction (*Note 2)			
					Non-Transmission Regulated Steady State Torque malfunction			
					(*Note 2)			
					Engine Speed malfunction (*Note 2)			
					Range Selector Position Switch	= D Range	1	
					P0705 (Transmission Range Switch Circuit)	= NOT DETECTED		
			1	1	P0706 (Transmission Range Switch Performance)	= NOT DETECTED	1	1

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description					Required	Illum.
					Garage Shift Control has been INACTIVE for this amount of time continuously Shift Control has been INACTIVE for this amount of time continuously The Input Speed signal is available from the Input Speed	T_GarageFin (*1) T_ShiftFin (*1)		
					Sensor The Output Speed signal is available from the Output Speed	= TRUE		
					Sensor ATF Temperature	= TRUE >= -20 [deg C]		
					Quick Stop Detection Flag (*Note 4)	= FALSE		
					Safe Gear Control has been INACTIVE for this amount of time continuously	tmr_inh_GE (*1)		
					The TCM is not commanding a neutral condition as a reaction to Safe Gear Control.	= TRUE		
Gear Ratio (2nd Gear)	P0732	Gear 2 Incorrect Ratio	Difference between actual Gear Ratio and 2nd Gear Ratio	> 20 [%]	Current Gear	= 2ND GEAR	12 sec (cumulatively)	1
					Output Speed Ignition Voltage Battery Voltage Engine Speed Engine Speed Signal Validity U0100 (Lost Communication with ECM/PCM "A") U0073 (CAN Bus-OFF) The TCM has completed the read operation of its non-volatile memory	>= 500 [rpm] > 9000 [mV] for 10 [msec] > 10.2 [V] < 32.0 [V] > 400 [RPM] = VALID = NOT DETECTED = NOT DETECTED (all 8 criteria for 2 [sec] continuously)		
					Emergency Mode (*4) Neutral Avoidance Control Solenoid Cut Condition (*Note 3) Time since Solenoid Cut (*Note 3) control has been INACTIVE P0974 (Shift Solenoid "A" Control Circuit High) P0973 (Shift Solenoid "A" Control Circuit Low) Status of all of the Gear Ratio malfunctions:	= NOT ACTIVE = NOT ACTIVE = NOT ACTIVE > 8 [sec] ALL Malfunctions = NOT DETECTED		
					Status of all of the Gear Ratio mainufcions: (P0967, P0971, P2721, P2730, P2739, P0963, P2763, P0966, P0970, P2720, P2729, P2738, P0962, P2764, P0778, P0798, P2716, P2725, P2734, P0748, P2761) P07C0 (Unput/Turbine Speed Sensor "A" Circuit High) P07BF (Input/Turbine Speed Sensor "A" Circuit No Signal) P077D (Output Speed Sensor ra" Circuit No Signal) P077D (Output Speed Sensor Circuit Low) P077C (Output Speed Sensor Circuit High) P0722 (Output Speed Sensor No Pulse) P0592 (System Voltage Low Supply 2) ("Note 1) P0563 (System Voltage Low Supply 2) ("Note 1) P0661 (Internal Control Module Memory Checksum Error) P0602 (Control Module Programming Error) P0604 (Internal Control Module Random Access Memory (RAM) Error) U0073 (CAN Bus-OFF) U0100 (Lost Communication with ECM/PCM "A") Accelerator Effective Position maffunction ("Note 2)			

Component / System	Fault Code	Monitor Strategy / Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
- Cycloni					Engine Actual Steady State Torque malfunction (*Note 2) Non-Transmission Regulated Steady State Torque malfunction (*Note 2) Engine Speed malfunction (*Note 2)			
					Range Selector Position Switch P0705 (Transmission Range Switch Circuit) P0706 (Transmission Range Switch Performance) Garage Shift Control has been INACTIVE for this amount of time continuously Shift Control has been INACTIVE for this amount of time continuously The Input Speed signal is available from the Input Speed Sensor The Output Speed signal is available from the Output Speed Sensor	= D Range = NOT DETECTED = NOT DETECTED T_GarageFin (*1) T_ShiftFin (*1) = TRUE = TRUE		
					ATF Temperature Quick Stop Detection Flag (*Note 4) Safe Gear Control has been INACTIVE for this amount of time continuously The TCM is not commanding a neutral condition as a reaction to Safe Gear Control.	>= -20 [deg C] = FALSE tmr_inh_GE (*1) = TRUE		
					AND the following conditions a			
					Difference between actual Gear Ratio and 3rd Gear Ratio Difference between actual Gear Ratio and 4th Gear Ratio	< 4 [%] for 1 [sec] continuously < 4 [%] for 1 [sec] continuously		
					Difference between actual Gear Ratio and 7th Gear Ratio	< 4 [%] < 4 [%] < 4 [%]		
					Difference between actual Gear Ratio and 8th Gear Ratio	for 1 [sec] continuously		
Gear Ratio (2nd Gear Stuck)	P0732	Gear 2 Incorrect Ratio	Difference between actual Gear Ratio and 3rd Gear Ratio OR Difference between actual Gear Ratio and 4th Gear Ratio	< 4 %	Current Gear Output Speed Input Torque	= 2ND GEAR >= 60 [rpm] >= 50 [Nm] OR <= -50 [Nm] (occur at least 1 time during detection)	5 sec	1
			OR Difference between actual Gear Ratio and 8th Gear Ratio	< 4 %	Ignition Voltage Battery Voltage Battery Voltage Engine Speed Engine Speed Signal Validity U0100 (Lost Communication with ECM/PCM "A") U0073 (CAN Bus-OFF) The TCM has completed the read operation of its non-volatile memory	> 9000 [mV] for 10 [msec] > 10.2 [V] <= 32.0 [V] > 400 [RPM] = VALID = NOT DETECTED = NOT DETECTED = NOT DETECTED (all 8 criteria for 2 [sec] continuously)		

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description					Required	Illum.
					Emergency Mode (*4) Neutral Avoidance Control Solenoid Cut Condition (*Note 3) Time since Solenoid Cut (*Note 3) control has been INACTIVE P0974 (Shift Solenoid "A" Control Circuit High) P0973 (Shift Solenoid "A" Control Circuit Low) Status of all of the Gear Ratio malfunctions: (P0967, P0971, P2721, P2730, P2739, P0963, P2763, P0966, P0970, P2720, P2729, P2738, P0962, P2764, P0778, P0798, P2716, P2725, P2729, P2738, P0962, P2764, P0778, P0798, P2716, P2725, P2729, P2738, P0962, P2764, P0778, P0798, P07C0 (Input/Turbine Speed Sensor "A" Circuit High) P075P (Input/Turbine Speed Sensor "A" Circuit No Signal) P077C (Output Speed Sensor Circuit High) P0772 (Output Speed Sensor Circuit High) P0772 (Output Speed Sensor Circuit High) P0723 (System Voltage Low Supply 2) (*Note 1) P0663 (System Voltage Low Supply 2) (*Note 1) P0604 (Internal Control Module Random Access Memory (RAM) Error) U0073 (CAN Bus-OFF) U0100 (Lost Communication with ECM/PCM "A") Accelerator Effective Position malfunction (*Note 2) Engine Actual Steady State Torque malfunction (*Note 2) Engine Speed malfunction (*Note 2)	= NOT ACTIVE = NOT ACTIVE > 8 [sec] ALL Malfunctions = NOT DETECTED		
					Range Selector Position Switch P0705 (Transmission Range Switch Circuit) P0706 (Transmission Range Switch Performance) Garage Shift Control has been INACTIVE for this amount of time continuously Shift Control has been INACTIVE for this amount of time continuously The Input Speed signal is available from the Input Speed Sensor The Output Speed signal is available from the Output Speed Sensor ATF Temperature Quick Stop Detection Flag (*Note 4) Safe Gear Control has been INACTIVE for this amount of time continuously	= D Range = NOT DETECTED = NOT DETECTED T_GarageFin (*1) T_ShiftFin (*1) = TRUE = TRUE >= -20 [deg C] = FALSE tmr_inh_GE (*1)		

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description					Required	Illum.
					The TCM is not commanding a neutral condition as a reaction to Safe Gear Control.	= TRUE		
Gear Ratio (3rd Gear)	P0733	Gear 3 Incorrect Ratio	Difference between actual Gear Ratio and 3rd	> 20 [%]	Current Coor		12 sec	1
Gear Ratio (3rd Gear)	P0733	Gear 3 Incorrect Ratio	Difference between actual Gear Ratio and 3rd Gear Ratio	> 20 [%]	Current Gear Output Speed Ignition Voltage Battery Voltage Battery Voltage Engine Speed Signal Validity U0073 (CAN Bus-OFF) The TCM has completed the read operation of its non-volatile memory Emergency Mode (*4) Neutral Avoidance Control Solenoid Cut Condition (*Note 3) Time since Solenoid Cut (*Note 3) control has been INACTIVE P0974 (Shift Solenoid *A* Control Circuit High) P0973 (Shift Solenoid *A* Control Circuit Low) Status of all of the Gear Ratio malfunctions: (P0967, P0971, P2721, P2730, P2739, P0963, P2763, P0966, P970, P2720, P2729, P2738, P0962, P2764, P0778, P0798, P2716, P2720, P2729, P2738, P0962, P2764, P0778, P0798, P2716, P07270, Cutput Turbine Speed Sensor *A* Circuit High) P0775 (Output Turbine Speed Sensor *A* Circuit No Signal) P0777 (Output Speed Sensor Circuit Low) P0771 (Input/Turbine Speed Sensor *A* Circuit No Signal) P0772 (Output Speed Sensor Circuit Low) P0772 (Output Speed Sensor No Pulse) P0582 (System Voltage Low Supply 2) (*Note 1) P0663 (Internal Control Module Memory Checksum Error) P0604 (Internal Control Module Random Access Memory (RAM) Error) U0073 (CAN Bus-OFF)	= 3RD GEAR >= 500 [rpm] > 9000 [mV] for 10 [msec] > 10.2 [V] < 32.0 [V] > 400 [RPM] = VALID = NOT DETECTED = NOT DETECTED (all 8 criteria for 2 [sec] continuously) = NOT ACTIVE = NOT ACTIVE = NOT ACTIVE = NOT ACTIVE > 8 [sec] ALL Malfunctions = NOT DETECTED	12 sec (cumulatively)	1
			Engine Speed malfunction (*Note 2) Range Selector Position Switch	= D Range				

Component / System	Fault Code	Monitor Strategy / Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
					P0705 (Transmission Range Switch Circuit) P0706 (Transmission Range Switch Performance) Garage Shift Control has been INACTIVE for this amount of time continuously Shift Control has been INACTIVE for this amount of time continuously The Input Speed signal is available from the Input Speed Sensor The Output Speed signal is available from the Output Speed Sensor ATF Temperature Quick Stop Detection Flag (*Note 4) Safe Gear Control has been INACTIVE for this amount of time continuously The TCM is not commanding a neutral condition as a reaction to Safe Gear Control.	= NOT DETECTED = NOT DETECTED T_GarageFin (*1) T_ShiftFin (*1) = TRUE = TRUE >= -20 [deg C] = FALSE tmr_inh_GE (*1) = TRUE		
					AND the following conditions a	< 4 [%]		
					Difference between actual Gear Ratio and 7th Gear Ratio	for 1 [sec] continuously		
Gear Ratio (3rd Gear Stuck)	P0733	Gear 3 Incorrect Ratio	Difference between actual Gear Ratio and 7th Gear Ratio	< 4 [%]	Current Gear	= 3RD GEAR	5 sec	1
				Output Speed	>= 60 [rpm]			
					Input Torque Ignition Voltage Battery Voltage Battery Voltage Engine Speed Signal Validity U0100 (Lost Communication with ECM/PCM "A") U0073 (CAN Bus-OFF) The TCM has completed the read operation of its non-volatile memory	>= 50 [Nm] OR <= -50 [Nm] (occur at least 1 time during detection) > 9000 [mV] for 10 [msec] > 10.2 [V] <= 32.0 [V] > 400 [RPM] = VALID = NOT DETECTED = NOT DETECTED = NOT DETECTED (all 8 criteria for 2 [sec] continuously)		
					Emergency Mode (*4) Neutral Avoidance Control Solenoid Cut Condition (*Note 3) Time since Solenoid Cut (*Note 3) control has been INACTIVE P0974 (Shift Solenoid *A" Control Circuit High) P0973 (Shift Solenoid *A" Control Circuit Low) Status of all of the Gear Ratio malfunctions: (P0967, P0971, P2721, P2730, P2739, P0963, P2763, P0966, P0970, P2720, P2729, P2738, P0962, P2764, P0778, P0798, P2716, P2725, P2734, P0748, P2761) P07C0 (Input/Turbine Speed Sensor *A" Circuit High) P0717 (Input/Turbine Speed Sensor *A" Circuit Low) P0717 (Output Speed Sensor Circuit Low) P0772 (Output Speed Sensor Circuit High) P0728 Sensor Sensor TA" Circuit High) P0729 (Dutput Speed Sensor Circuit High) P0729 (Dutput Speed Sensor Circuit High) P0720 (Dutput Speed Sensor Circuit High)	= NOT ACTIVE = NOT ACTIVE = NOT ACTIVE > 8 [sec] ALL Malfunctions = NOT DETECTED		

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description					Required	Illum.
					P0592 (System Voltage Low Supply 2) (*Note 1) P0563 (System Voltage High) P2533 (Ignition Switch Run/Start Position Circuit High) P0601 (Internal Control Module Memory Checksum Error) P0604 (Internal Control Module Random Access Memory (RAM) Error) U0073 (CAN Bus-OFF) U0100 (Lost Communication with ECM/PCM "A") Accelerator Effective Position malfunction (*Note 2) Engine Actual Steady State Torque malfunction (*Note 2) Engine Speed malfunction (*Note 2)			
					Range Selector Position Switch P0705 (Transmission Range Switch Circuit) P0706 (Transmission Range Switch Performance) Garage Shift Control has been INACTIVE for this amount of time continuously Shift Control has been INACTIVE for this amount of time continuously	= D Range = NOT DETECTED = NOT DETECTED T_GarageFin (*1) T_ShiftFin (*1)		
					The Input Speed signal is available from the Input Speed Sensor The Output Speed signal is available from the Output Speed Sensor	= TRUE = TRUE		
					ATF Temperature	>= -20 [deg C]		
					Quick Stop Detection Flag (*Note 4) Safe Gear Control has been INACTIVE for this amount of time continuously	= FALSE tmr_inh_GE (*1)		
					The TCM is not commanding a neutral condition as a reaction to Safe Gear Control.	= TRUE		
Gear Ratio (4th Gear)	P0734	Gear 4 Incorrect Ratio	Difference between actual Gear Ratio and 4th Gear Ratio	> 20 [%]	Current Gear Output Speed Ignition Voltage Battery Voltage Engine Speed Engine Speed Signal Validity U0100 (Lost Communication with ECM/PCM "A") U0073 (CAN Bus-OFF) The TCM has completed the read operation of its non-volatile memory	= 4TH GEAR >= 500 [rpm] > 9000 [mV] for 10 [msec] > 10.2 [V] < 32.0 [V] > 400 [RPM] = VALID = NOT DETECTED = NOT DETECTED = NOT DETECTED (all 8 criteria for 2 [sec] continuously)	12 sec (cumulatively)	1
					Emergency Mode (*4) Neutral Avoidance Control Solenoid Cut Condition (*Note 3)	= NOT ACTIVE = NOT ACTIVE = NOT ACTIVE		

Component / System	Fault Code	Monitor Strategy / Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL
-,					Time since Solenoid Cut (*Note 3) control has been INACTIVE	> 8 [sec]		
					P0974 (Shift Solenoid "A" Control Circuit High) P0973 (Shift Solenoid "A" Control Circuit Low) Status of all of the Gear Ratio malfunctions: (P0967, P0971, P2721, P2730, P2739, P0963, P2763, P0966, P0970, P2720, P2729, P2739, P0962, P2764, P0778, P0798, P2716, P2725, P2734, P0748, P2761) P07C0 (Input/Turbine Speed Sensor "A" Circuit High) P07BF (Input/Turbine Speed Sensor "A" Circuit Low) P0717 (Input/Turbine Speed Sensor "A" Circuit No Signal) P077D (Output Speed Sensor Circuit Low) P0772 (Output Speed Sensor Circuit High) P0722 (Output Speed Sensor No Pulse) P0583 (System Voltage Low Supply 2) ('Note 1) P0563 (System Voltage High) P0604 (Internal Control Module Memory Checksum Error) P0604 (Internal Control Module Programming Error) P0604 (Internal Control Module Random Access Memory (RAM) Error) U0073 (CAN Bus-OFF) U0100 (Lost Communication with ECM/PCM "A") Accelerator Effective Position malfunction ('Note 2) Engine Actual Steady State Torque malfunction ('Note 2) Engine Speed malfunction ("Note 2)	ALL Malfunctions = NOT DETECTED		
					Range Selector Position Switch P0705 (Transmission Range Switch Circuit) P0706 (Transmission Range Switch Performance) Garage Shift Control has been INACTIVE for this amount of time continuously Shift Control has been INACTIVE for this amount of time continuously The Input Speed signal is available from the Input Speed Sensor The Output Speed signal is available from the Output Speed Sensor ATF Temperature Quick Stop Detection Flag (*Note 4) Safe Gear Control has been INACTIVE for this amount of time continuously The TCM is not commanding a neutral condition as a reaction to Safe Gear Control.	= D Range = NOT DETECTED = NOT DETECTED T_GarageFin (*1) T_ShiftFin (*1) = TRUE = TRUE >= -20 [deg C] = FALSE tmr_inh_GE (*1) = TRUE		
					AND the following conditions a			
					Difference between actual Gear Ratio and 3rd Gear Ratio	< 4 [%] for 1 [sec] continuously		1

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description	1	1	I	< 4 [%]	Required	Illum
					Difference between actual Gear Ratio and 6th Gear Ratio	for 1 [sec] continuously		
					Difference between actual Gear Ratio and 7th Gear Ratio	< 4 [%] for 1 [sec] continuously		
ear Ratio (4th Gear Stuck)	P0734	Gear 4 Incorrect Ratio	Difference between actual Gear Ratio and 3rd Gear Ratio	< 4 %	Current Gear	= 4TH GEAR	5 sec	1
					Output Speed	>= 60 [rpm]		
	OR Difference between actual Gear Ratio and 6th Gear Ratio	< 4 %	Input Torque	>= 50 [Nm] OR <= -50 [Nm] (occur at least 1 time during detection)				
					Ignition Voltage Battery Voltage Battery Voltage Engine Speed Signal Validity U0100 (Lost Communication with ECM/PCM "A") U0073 (CAN Bus-OFF) The TCM has completed the read operation of its non-volatile memory	> 9000 [mV] for 10 [msec] > 10.2 [V] <= 32.0 [V] > 400 [RPM] = VALID = NOT DETECTED = NOT DETECTED (all 8 criteria for 2 [sec] continuously)		
					Emergency Mode (*4) Neutral Avoidance Control Solenoid Cut Condition (*Note 3) Time since Solenoid Cut (*Note 3) control has been INACTIVE	= NOT ACTIVE = NOT ACTIVE = NOT ACTIVE > 8 [sec]		
					P0974 (Shift Solenoid "A" Control Circuit High) P0973 (Shift Solenoid "A" Control Circuit Low) Status of all of the Gear Ratio malfunctions: (P0967, P0971, P2721, P2730, P2739, P0963, P2763, P0966, P0970, P2720, P2729, P2738, P0962, P2764, P0778, P0798, P2716, P2725, P2734, P0748, P2761) P07C0 (Input/Turbine Speed Sensor "A" Circuit High) P07BF (Input/Turbine Speed Sensor "A" Circuit No Signal) P077D (Output Speed Sensor Circuit Low) P077C (Output Speed Sensor Circuit High) P0722 (Output Speed Sensor Circuit High) P0752 (System Voltage Low Supply 2) ("Note 1) P0553 (System Voltage High) P0553 (System Voltage High) P0553 (Ignition Switch Run/Start Position Circuit High) P0601 (Internal Control Module Memory Checksum Error) P0602 (Control Module Programming Error) P0604 (Internal Control Module Random Access Memory (RAM) Error) U0073 (CAN Bus-OFF) U0100 (Lost Communication with ECM/PCM "A") Accelerator Effective Position malfunction ("Note 2) Engine Actual Steady State Torque malfunction ("Note 2) Non-Transmission Regulated Steady State Torque malfunction ("Note 2)	ALL Malfunctions = NOT DETECTED		

Component / System	Fault Code	Monitor Strategy / Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
System		Description			Range Selector Position Switch P0705 (Transmission Range Switch Circuit) P0706 (Transmission Range Switch Performance) Garage Shift Control has been INACTIVE for this amount of time continuously Shift Control has been INACTIVE for this amount of time	= D Range = NOT DETECTED = NOT DETECTED T_GarageFin (*1)		
					continuously The Input Speed signal is available from the Input Speed Sensor The Output Speed signal is available from the Output Speed Sensor ATF Temperature Quick Stop Detection Flag (*Note 4) Safe Gear Control has been INACTIVE for this amount of time continuously The TCM is not commanding a neutral condition as a reaction to Safe Gear Control.	T_ShiftFin (*1) = TRUE = TRUE >= -20 [deg C] = FALSE tmr_inh_GE (*1) = TRUE		
Gear Ratio (5th Gear)	P0735	Gear 5 Incorrect Ratio	Difference between actual Gear Ratio and 5th Gear Ratio	> 20 [%]	Current Gear Output Speed Ignition Voltage Battery Voltage Engine Speed Engine Speed Signal Validity U0100 (Lost Communication with ECM/PCM "A") U0073 (CAN Bus-OFF) The TCM has completed the read operation of its non-volatile memory	= 5TH GEAR >= 500 [rpm] > 9000 [mV] for 10 [msec] > 10.2 [V] <= 32.0 [V] > 400 [RPM] = VALID = VALID = NOT DETECTED = NOT DETECTED (all 8 criteria for 2 [sec] continuously)	12 sec (cumulatively)	1
					Emergency Mode (*4) Neutral Avoidance Control Solenoid Cut Condition (*Note 3) Time since Solenoid Cut (*Note 3) control has been INACTIVE P0974 (Shift Solenoid "A" Control Circuit High) P0973 (Shift Solenoid "A" Control Circuit Low) Status of all of the Gear Ratio malfunctions: (P0967, P0971, P2721, P2730, P2739, P0963, P2763, P0966, P0970, P2720, P2729, P2738, P0962, P2764, P0778, P0798, P2716, P2725, P2734, P0748, P2761) P07C0 (Input/Turbine Speed Sensor "A" Circuit High) P0717 (Input/Turbine Speed Sensor "A" Circuit Low) P0717 (Input/Turbine Speed Sensor "A" Circuit No Signal) P077D (Output Speed Sensor Circuit High) P0722 (Output Speed Sensor No Pulse) P0592 (System Voltage Low Supply 2) (*Note 1) P0563 (System Voltage High)	= NOT ACTIVE = NOT ACTIVE = NOT ACTIVE > 8 [sec] ALL Malfunctions = NOT DETECTED		

Component / System	Fault Code	Monitor Strategy / Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
eyeteni					P0601 (Internal Control Module Memory Checksum Error) P0602 (Control Module Programming Error) P0604 (Internal Control Module Random Access Memory (RAM) Error) U0073 (CAN Bus-OFF) U0100 (Lost Communication with ECM/PCM "A") Accelerator Effective Position malfunction (*Note 2) Engine Actual Steady State Torque malfunction (*Note 2) Engine Speed malfunction (*Note 2)			
					Range Selector Position Switch P0705 (Transmission Range Switch Circuit) P0706 (Transmission Range Switch Performance) Garage Shift Control has been INACTIVE for this amount of time continuously Shift Control has been INACTIVE for this amount of time continuously The Input Speed signal is available from the Input Speed Sensor The Output Speed signal is available from the Output Speed Sensor ATF Temperature Quick Stop Detection Flag (*Note 4) Safe Gear Control has been INACTIVE for this amount of time continuously The TCM is not commanding a neutral condition as a reaction to Safe Gear Control.	= D Range = NOT DETECTED = NOT DETECTED T_GarageFin (*1) T_ShiftFin (*1) = TRUE = TRUE = TRUE >= -20 [deg C] = FALSE tmr_inh_GE (*1) = TRUE		
					AND the following conditions a Difference between actual Gear Ratio and 6th Gear Ratio Difference between actual Gear Ratio and 7th Gear Ratio	< 4 [%] for 1 [sec] continuously < 4 [%] for 1 [sec] continuously < 4 [%]		
					Difference between actual Gear Ratio and 8th Gear Ratio	for 1 [sec] continuously		
ear Ratio (5th Gear Stuck)	P0735	Gear 5 Incorrect Ratio	Difference between actual Gear Ratio and 6th Gear Ratio	< 4 %	Current Gear	= 5TH GEAR	5 sec	1
		OR Difference between actual Gear Ratio and 7th Gear Ratio	< 4 %	Output Speed Input Torque	>= 60 [rpm] >= 50 [Nm] OR <= -50 [Nm] (occur at least 1 time during detection)			
			OR	< 4 %	Ignition Voltage Battery Voltage Battery Voltage Engine Speed Engine Speed Signal Validity	> 9000 [mV] for 10 [msec] > 10.2 [V] <= 32.0 [V] > 400 [RPM] = VALID		

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description					Required	Illum
					U0100 (Lost Communication with ECM/PCM "A") U0073 (CAN Bus-OFF) The TCM has completed the read operation of its non-volatile memory	= NOT DETECTED = NOT DETECTED (all 8 criteria for 2 [sec] continuously)		
					Emergency Mode (*4) Neutral Avoidance Control Solenoid Cut Condition (*Note 3) Time since Solenoid Cut (*Note 3) control has been INACTIVE	= NOT ACTIVE = NOT ACTIVE = NOT ACTIVE > 8 [sec]		
					P0974 (Shift Solenoid "A" Control Circuit High) P0973 (Shift Solenoid "A" Control Circuit Low) Status of all of the Gear Ratio malfunctions: (P0967, P0971, P2721, P2730, P2739, P0963, P2763, P0966, P0970, P2720, P2739, P0748, P2761) P07C0 (Input/Turbine Speed Sensor "A" Circuit High) P07BF (Input/Turbine Speed Sensor "A" Circuit No Signal) P0770 (Output Speed Sensor Circuit Low) P0777 (Output Speed Sensor Circuit High) P0722 (Output Speed Sensor Circuit High) P0592 (System Voltage Low Supply 2) ("Note 1) P0563 (System Voltage High) P0653 (Ignition Switch Run/Start Position Circuit High) P0604 (Internal Control Module Memory Checksum Error) P0604 (Internal Control Module Random Access Memory (RAM) Error) U0073 (CAN Bus-OFF) U0073 (CAN Bus-OFF) U0073 (CAN Bus-OFF) U0073 (Lost Communication with ECM/PCM "A") Accelerator Effective Position malfunction ("Note 2) Engine Actual Steady State Torque malfunction ("Note 2) Engine Speed malfunction ("Note 2)	ALL Malfunctions = NOT DETECTED		
					Range Selector Position Switch P0705 (Transmission Range Switch Circuit) P0706 (Transmission Range Switch Performance) Garage Shift Control has been INACTIVE for this amount of	= D Range = NOT DETECTED = NOT DETECTED		
					time continuously Shift Control has been INACTIVE for this amount of time continuously The Input Speed signal is available from the Input Speed Sensor The Output Speed signal is available from the Output Speed Sensor	T_GarageFin (*1) T_ShiftFin (*1) = TRUE = TRUE		
I					ATF Temperature	>= -20 [deg C]		

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description					Required	Illum
					Quick Stop Detection Flag (*Note 4) Safe Gear Control has been INACTIVE for this amount of time continuously The TCM is not commanding a neutral condition as a reaction to Safe Gear Control.	= FALSE tmr_inh_GE (*1) = TRUE		
	Torque Converter Clutch Circuit Performance/Stuck Off	Difference between Engine Speed and Input Speed: AND The time since SLU pressure has gone above a calibratable value: is greater than a calibratable time:	> 100 [rpm] >= 6290 [gf/cm^2] T_SLUFull (*6)	Ignition Voltage Battery Voltage Battery Voltage Engine Speed Engine Speed Engine Sceed Engine Sceed Engine Speed Signal Validity U0070 (CAN Bus-OFF) The TCM has completed the read operation of its non-volatile memory Emergency Mode (*4) Neutral Avoidance Control Solenoid Cut Condition (*Note 3) Time since Solenoid Cut (*Note 3) control has been INACTIVE P0974 (Shift Solenoid "A" Control Circuit High) P0973 (Shift Solenoid "A" Control Circuit Low) Status of all of the Gear Ratio malfunctions: (P0967, P0971, P2721, P2730, P2739, P0963, P2763, P0966, P0970, P2720, P2729, P2738, P0962, P2764, P0778, P0798,	> 9000 [mV] for 10 [msec] > 10.2 [V] <= 32.0 [V] > 400 [RPM] = VALID = NOT DETECTED = NOT DETECTED (all 8 criteria for 2 [sec] continuously) = NOT ACTIVE = NOT ACTIVE = NOT ACTIVE = NOT ACTIVE > 8 [sec] ALL Malfunctions = NOT DETECTED	12 sec (cumulatively)	2	
					P2716, P2725, P2734, P0748, P2761) P07C0 (Input/Turbine Speed Sensor "A" Circuit High) P07BF (Input/Turbine Speed Sensor "A" Circuit Low) P07T7 (Output Speed Sensor Circuit Low) P0777D (Output Speed Sensor Circuit High) P0772 (Output Speed Sensor Circuit High) P0772 (Output Speed Sensor No Pulse) P0552 (System Voltage Low Supply 2) ('Note 1) P0563 (System Voltage High) P2535 (Ignition Switch Run/Start Position Circuit High) P0664 (Internal Control Module Memory Checksum Error) P0604 (Internal Control Module Random Access Memory (RAM) Error) U0073 (CAN Bus-OFF) U0100 (Lost Communication with ECM/PCM "A") Accelerator Effective Position malfunction ('Note 2) Non-Transmission Regulated Steady State Torque malfunction ('Note 2)			
					Garage Shift Control has been INACTIVE for this amount of time continuously	T_GarageFin (*1)		

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description					Required	Illum.
					Shift Control has been INACTIVE for this amount of time continuously	T_ShiftFin (*1)		
					Range Selector Position Switch	= D Range		
					Time since shifting to D	= 8 [sec]		
					Engine Torque	>= 0 [Nm]		
					Engine Speed	< 4000 [rpm]		
					ATF Temperature	>= 20 [degC]		
					SLU Pressure:	>= 20 [deg0]		
					- Pressure Value:	PLUP_CLOSE_FAIL (*5)		
					- Time since meeting value criteria:	T_SLUFull (*6)		
					SL Solenoid Command	= ON		
					The Input Speed signal is available from the Input Speed			
					Sensor	= TRUE		
					The Output Speed signal is available from the Output Speed Sensor	= TRUE		
					P2770 (SL Solenoid B+ Short / Open) P2769 (SL Solenoid GND Short)	= NOT DETECTED = NOT DETECTED		
					P2763 (SLU Solenoid B+ Short / Open)			
					P2764 (SLU Solenoid GND Short) P2761 (SLU Feedback stuck)	= NOT DETECTED = NOT DETECTED		
					P0713 (Transmission Fluid Temperature Sensor "A" Circuit			
					High) P0712 (Transmission Fluid Temperature Sensor "A" Circuit	= NOT DETECTED		
					Low)	= NOT DETECTED		
Pressure Control Solenoid "A"	P0748	Pressure Control Solenoid "A"	sum_ie (*)	> 60000 [mA]	Ignition Voltage	> 9000 [mV] for 10 [msec] continuously	1 to 3 sec	1
Control Circuit (SLT Solenoid)		Electrical			Battery Voltage Battery Voltage	> 10.2 [V] <= 32.0 [V]	cumulatively	
					The TCM has completed the read operation of its non-volatile			
					memory	(all 4 criteria for 2 [sec] continuously)		
			(*) The first algorithm checks the cumulative		Battery Voltage	> 11 [V] for [> 500 msec]		
			sum of the difference of the linear solenoid		Linear Solenoid Feedback current	< 1358 [mA]		
			feedback current and commanded current. This sum, named "sum_ie", will be updated on every		Solenoid Cut Condition (*Note 3)	= NOT ACTIVE		
			clock cycle of the microprocessor (10 msec). If					
			the value of the sum becomes greater than a calibrated threshold, a malfunction will be		P0962 (Pressure Control Solenoid "A" Control Circuit Low)	= NOT DETECTED		
			confirmed.		P0963 (Pressure Control Solenoid "A" Control Circuit High)	= NOT DETECTED		
					Emergency Mode (*4)	= NOT ACTIVE		
	1		ie: Difference of "commanded current" and					1
	1		"feedback current" ie added to "sum_ie" every 10 msec					1
			sum_ie is cleared if at least one of the following					
			conditions are satisfied					
	1		1) Enable conditions are not satisfied					1
			2) -50mA =< ie =< 50mA"					
	1		3) Sign of ie is changed					1
	1		OR					

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description		•			Required	Illum.
			(*) The second algorithm checks the absolute value of the difference of the linear solenoid feedback current and commanded current over time. If the absolute value of the difference of the linear solenoid feedback current and commanded current exceeds a calibrated threshold for a calibrated period of time continuously, a malfunction will be detected.	> 50 [mA]	Ignition Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory Battery Voltage Linear Solenoid Feedback current Solenoid Cut Condition (*Note 3) P0962 (Pressure Control Solenoid "A" Control Circuit Low) P0963 (Pressure Control Solenoid "A" Control Circuit High) Emergency Mode (*4)	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously) > 11 [V] for [> 500 msec] < 1358 [mA] = NOT ACTIVE = NOT DETECTED = NOT DETECTED = NOT ACTIVE	2 sec	1
			lie h Abeelute velue of is					
			ie : Absolute value of ie ie: Difference between "commanded current" and "feedback current"					
Gear Ratio (7th Gear)	P076F	Gear 7 Incorrect Ratio	Difference between actual Gear Ratio and 7th Gear Ratio	> 20 [%]	Current Gear	= 7TH GEAR	12 sec (cumulatively)	1
					Output Speed Ignition Voltage Battery Voltage Engine Speed Engine Speed Signal Validity U0100 (Lost Communication with ECM/PCM "A") U0073 (CAN Bus-OFF) The TCM has completed the read operation of its non-volatile memory	>= 500 [rpm] > 9000 [mV] for 10 [msec] > 10.2 [V] < 32.0 [V] > 400 [RPM] = VALID = NOT DETECTED = NOT DETECTED (all 8 criteria for 2 [sec] continuously)		
					Emergency Mode (*4) Neutral Avoidance Control Solenoid Cut Condition (*Note 3) Time since Solenoid Cut (*Note 3) control has been INACTIVE	= NOT ACTIVE = NOT ACTIVE = NOT ACTIVE > 8 [sec]		
					P0974 (Shift Solenoid "A" Control Circuit High) P0973 (Shift Solenoid "A" Control Circuit Low) Status of all of the Gear Ratio malfunctions: (P0967, P0971, P2721, P2730, P2739, P0963, P2763, P0966, P0970, P2720, P2729, P2738, P0962, P2764, P0778, P0798, P2716, P2725, P2734, P0748, P2761) P07C0 (Input/Turbine Speed Sensor "A" Circuit High) P07BF (Input/Turbine Speed Sensor "A" Circuit No Signal) P077D (Output Speed Sensor "A" Circuit No Signal) P077D (Output Speed Sensor Carcuit High) P0722 (Output Speed Sensor Circuit High) P0752 (System Voltage Low Supply 2) ("Note 1) P0563 (System Voltage High) P2535 (Gipition Switch Run/Start Position Circuit High) P0604 (Internal Control Module Memory Checksum Error) P0604 (Internal Control Module Random Access Memory (RAM) Error)	ALL Malfunctions = NOT DETECTED		

Component / System	Fault Code	Monitor Strategy / Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					U0073 (CAN Bus-OFF) U0100 (Lost Communication with ECM/PCM "A") Accelerator Effective Position malfunction ("Note 2) Engine Actual Steady State Torque malfunction ("Note 2) Non-Transmission Regulated Steady State Torque malfunction (*Note 2) Engine Speed malfunction (*Note 2)			
					Range Selector Position Switch P0705 (Transmission Range Switch Circuit) P0706 (Transmission Range Switch Performance) Garage Shift Control has been INACTIVE for this amount of time continuously Shift Control has been INACTIVE for this amount of time continuously The Input Speed signal is available from the Input Speed Sensor The Output Speed signal is available from the Output Speed Sensor ATF Temperature Quick Stop Detection Flag (*Note 4) Safe Gear Control has been INACTIVE for this amount of time continuously The TCM is not commanding a neutral condition as a reaction to Safe Gear Control.	= D Range = NOT DETECTED = NOT DETECTED T_GarageFin (*1) T_ShiftFin (*1) = TRUE = TRUE >= -20 [deg C] = FALSE tmr_inh_GE (*1) = TRUE		
Neutral condition at D Range (C1	P0776	Pressure Control Solenoid "B" Stuck	Neutral Condition Decision (C1 cannot engage	<i></i>				1
no engagement)		OFF	Engine Speed – Input Speed	< 150 [rpm] > Output Speed x I_gear(*7) + 400 [rpm]	Ignition Voltage Battery Voltage Engine Speed Engine Speed Signal Validity U0100 (Lost Communication with ECM/PCM "A") U0073 (CAN Bus-OFF) The TCM has completed the read operation of its non-volatile memory	> 9000 [mV] for 10 [msec] > 10.2 [V] <= 32.0 [V] > 400 [RPM] = VALID = NOT DETECTED = NOT DETECTED (all 8 criteria for 2 [sec] continuously)	{ gearRpm(*8) >= 0 AND gearRpm <= 1500 } 3.3 sec { gearRpm(*8)	
					Emergency Mode (*4) Neutral Avoidance Control Solenoid Cut Condition (*Note 3) Time since Solenoid Cut (*Note 3) control has been INACTIVE P0974 (Shift Solenoid *A" Control Circuit High) P0973 (Shift Solenoid *A" Control Circuit Low) Status of all of the Gear Ratio malfunctions: (P0967, P0971, P2721, P2730, P2739, P0963, P2763, P0966, P0970, P2720, P2729, P2738, P0962, P2764, P0778, P0798, P2770 (freut/Turbics Cond Score *** (freut/Turbics)	= NOT ACTIVE = NOT ACTIVE = NOT ACTIVE = NOT ACTIVE > 8 [sec] ALL Malfunctions = NOT DETECTED	{gearpm(*8) >= 3001 {ND gearRpm <= 3000 } 1.3 sec {gearRpm(*8) >= 3001 } 0.8 sec	

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description		-			Required	Illun
					P07BF (Input/Turbine Speed Sensor "A" Circuit Hign) P07BF (Input/Turbine Speed Sensor "A" Circuit Low) P07T7 (Output Speed Sensor Circuit Low) P07T2 (Output Speed Sensor Circuit High) P0722 (Output Speed Sensor No Pulse) P0592 (System Voltage Low Supply 2) ("Note 1) P0563 (System Voltage Low Supply 2) ("Note 1) P0563 (System Voltage Low Supply 2) ("Note 1) P0662 (Control Module Programming Error) P0602 (Control Module Programming Error) P0604 (Internal Control Module Random Access Memory (RAM) Error) U0073 (CAN Bus-OFF) U0100 (Lost Communication with ECM/PCM "A") Accelerator Effective Position malfunction ("Note 2) Engine Actual Steady State Torque malfunction ("Note 2) Engine Speed malfunction ("Note 2)			
					ATF temperature Garage Shift Control (N to D) has been INACTIVE for this amount of time continuously Shift Control has been INACTIVE for this amount of time continuously Range Selector Position Switch Current gear	>= 0 [degC] T_GarageFin (*1) T_ShiftFin (*1) = D Range for 1000 [msec] continuously 1st OR 2nd OR 3rd OR 4th OR 5th		
					Output Speed	<= 500 [rpm]		
					Current lock up status	= OFF		
					Lockup type The Input Speed signal is available from the Input Speed Sensor	= LUP NO CONTROL = TRUE = NOT DETECTED		
					P0713 (Transmission Fluid Temperature Sensor "A" Circuit High) P0712 (Transmission Fluid Temperature Sensor "A" Circuit Low)	= NOT DETECTED		
					Quick Stop Detection Flag (*Note 4)	= FALSE		
					Prohibit Neutral Judgment flag (*)	= FALSE		
					 (*) Prohibit Neutral Judgment : The following Criteria is met, Prohibit Neutral Judgment flag = Clear counter_NfailD Criteria: 1 and 2 and 3 and 4 and 5 and 6, for 300 [msec] co 1. current Gear: 4th 2. RANGE_D(defined signal) 3. Slip Speed > 500 [pm] 4. Output Speed = 0 [pm] 			

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description					Required	Illum.
					5. Not shifting 6. Current gear != GEAR_1STEB Release condition			
					The following Criteria is met, Prohibit Neutral Judgment flag =	FALSE		
					Criteria: 1 or 2 or 3 1. RANGE_P, RANGE_R or RANGE_N 2. Output Speed > 0 [rpm] 3. Bestgear = 6th or 7th or 8th			
			Confirm C1 as Failed Element (Check C2 and C	I 3 to see if C1 has malfunctioned)			
			When the following conditions are ALL satisfied be met:	d, the criteria are considered to				
			Increment counter_NfailD					
			Input Speed	< 200 [rpm]				
			Engine Speed	> 600 [rpm]				
			Neutral condition detection in progress	Yes				
Pressure Control Solenoid "B"	P0777	Pressure Control Solenoid "B" Stuck ON	This fault is confirmed after a calibratable number of counts of the "SL1 Stuck ON"(*) failure counter:		Ignition Voltage Battery Voltage Battery Voltage Engine Speed	> 9000 [mV] for 10 [msec] > 10.2 [V] <= 32.0 [V] > 400 [RPM]	4 sec	1
			Number of counts:	= 4	Engine Speed Signal Validity U0100 (Lost Communication with ECM/PCM "A") U0073 (CAN Bus-OFF)	= VALID = NOT DETECTED = NOT DETECTED		
			(*) If the following conditions are met for a calibrated time period continuously, the algorithm will increment the "SL1 Stuck ON" failure counter:		The TCM has completed the read operation of its non-volatile memory	(all 8 criteria for 2 [sec] continuously)		
			Timer:	= 1000 [msec]				
			Current Gear	= 6th or 7th or 8th	Emergency Mode (*4)	= NOT ACTIVE = NOT ACTIVE		
			Difference between Actual Gear Ratio and Expected Gear Ratio: ATF Pressure Switch Command	< 4 [%] = ON	Neutral Avoidance Control Solenoid Cut Condition (*Note 3) Time since Solenoid Cut (*Note 3) control has been INACTIVE	= NOT ACTIVE = NOT ACTIVE > 8 [sec]		
			Flag_SLC1drain (*)	= ON	P0974 (Shift Solenoid "A" Control Circuit High) P0973 (Shift Solenoid "A" Control Circuit Low)	ALL Malfunctions = NOT DETECTED		
			Flag_SLC1drain (*) is determined to be ON when the following condition is true: SLC1 Pressure	<= 300 [gf/cm^2]	Status of all of the Gear Ratio malfunctions: (P0967, P0971, P2721, P2730, P2739, P0963, P2763, P0966, P0970, P2720, P2729, P2738, P0962, P2764, P0778, P0798, P2716, P2725, P2734, P0748, P2761)			
					DOZCO (Input/Turking Speed Separar #A# Circuit Lligh)			
			For the following time continuously:	= 1 ime_PSLarain (*12) (msec)	P07E0 (Input/Turbine Speed Sensor "A "Circuit Low) P07BF (Input/Turbine Speed Sensor "A" Circuit Low) P07T7 (Unput/Speed Sensor Circuit Low) P07T2 (Output Speed Sensor Circuit High) P0772 (Output Speed Sensor No Pulse) P0592 (System Voltage Low Supply 2) ("Note 1) P0563 (System Voltage High) P2535 (Ignition Switch Run/Start Position Circuit High) P0604 (Internal Control Module Memory Checksum Error) P0604 (Internal Control Module Random Access Memory			

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description					Required	Illum.
					(RAM) Error) U0073 (CAN Bus-OFF) U0100 (Lost Communication with ECM/PCM "A") Accelerator Effective Position malfunction ("Note 2) Engine Actual Steady State Torque malfunction ("Note 2) Non-Transmission Regulated Steady State Torque malfunction ("Note 2) Engine Speed malfunction ("Note 2)			
					Safe Gear Control has been INACTIVE for this amount of time continuously Range Selector Position Switch	tmr_inh_GE (*1) = D Range		
						-		
					Time since changing Range Selector Position to D	= 8000 [msec]		
					ATF temperature P0713 (Transmission Fluid Temperature Sensor "A" Circuit	>= -10 [degC] = NOT DETECTED		
					High) P0712 (Transmission Fluid Temperature Sensor "A" Circuit	= NOT DETECTED		
					Low) P0842 (Transmission Fluid Pressure Sensor/Switch "A" Circuit Low)	= NOT DETECTED		
					P0843 (Transmission Fluid Pressure Sensor/Switch "A" Circuit High	= NOT DETECTED		
					Garage Shift Control has been INACTIVE for this amount of time continuously	T_GarageFin (*1)		
					Shift Control has been INACTIVE for this amount of time continuously	T_ShiftFin (*1)		
					The Input Speed signal is available from the Input Speed	= TRUE		
					Sensor The Output Speed signal is available from the Output Speed Sensor	= TRUE		
					Quick Stop Detection Flag (*Note 4)	= FALSE		
					Safe Gear Control has been INACTIVE for this amount of time continuously	tmr_inh_GE (*1)		
					Engine Torque	>= 80 [Nm]		
					Output Speed	>= 60 [rpm]		
					The TCM is not commanding a neutral condition as a reaction to Safe Gear Control.	= TRUE		
Pressure Control Solenoid "B"	P0778	Pressure Control Solenoid "B"	oum ic (*)	> 60000 [m \]	Institute Voltage	> 9000 [mV] for 10 [msec] continuously	1 to 3 sec	4
Control Circuit (SL1 Solenoid)	FU//8	Electrical	sum_ie (*)	> 60000 [mA]	Ignition Voltage Battery Voltage Battery Voltage	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V]	(cumulatively)	1
					The TCM has completed the read operation of its non-volatile memory	(all 4 criteria for 2 [sec] continuously)		
			(*) The first algorithm checks the cumulative		Battery Voltage	> 11 [V] for [> 500 msec]		
			sum of the difference of the linear solenoid		Linear Solenoid Feedback current	< 1358 [mA]		
I	I	I	feedback current and commanded current. This	I			1	I

System	Code	Description	sum, named "sum_ie", will be updated on every clock cycle of the microprocessor (10 msec). If				Required	Illum.
			clock cycle of the microprocessor (10 msec). If	1				T
			the surpluse of the surpluse has seen as such that the second		Solenoid Cut Condition (*Note 3) P0966 (Pressure Control Solenoid "B" Control Circuit Low)	= NOT ACTIVE = NOT DETECTED		
			the value of the sum becomes greater than a calibrated threshold, a malfunction will be					
			confirmed.		P0967 (Pressure Control Solenoid "B" Control Circuit High)	= NOT DETECTED		
					Emergency Mode (*4)	= NOT ACTIVE		
			ie: Difference of "commanded current" and "feedback current"					
			ie added to "sum_ie" every 10 msec					
			sum_ie is cleared if at least one of the following conditions are satisfied					
			1) Enable conditions are not satisfied					
			2) -50mA =< ie =< 50mA"					
			3) Sign of ie is changed					
			OR					<u> </u>
			ie (*)	> 50 [mA]	Ignition Voltage	> 9000 [mV] for 10 [msec] continuously	2 sec	1
					Battery Voltage Battery Voltage	> 10.2 [V] <= 32.0 [V]		
					The TCM has completed the read operation of its non-volatile memory	(all 4 criteria for 2 [sec] continuously)		
			(*) The second algorithm checks the absolute		Battery Voltage	> 11 [V] for [> 500 msec]		
			value of the difference of the linear solenoid		Linear Solenoid Feedback current	< 1358 [mA]		
			feedback current and commanded current over time. If the absolute value of the difference of		Solenoid Cut Condition (*Note 3)	= NOT ACTIVE		
			the linear solenoid feedback current and commanded current exceeds a calibrated		P0966 (Pressure Control Solenoid "B" Control Circuit Low)	= NOT DETECTED		
			threshold for a calibrated period of time continuously, a malfunction will be detected.		P0967 (Pressure Control Solenoid "B" Control Circuit High)	= NOT DETECTED		
					Emergency Mode (*4)	= NOT ACTIVE		
			ie : Absolute value of ie					
			ie: Difference between "commanded current" and "feedback current"					
output Speed Sensor Circuit	P077C	Output Speed Sensor Circuit High	Output Speed Sensor Circuit Voltage	< 0.206 [V]	Ignition Voltage Battery Voltage	> 9000 [mV] for 10 [msec] continuously > 10.2 [V]	1 sec	1
					Battery Voltage	<= 32.0 [V]		
					The TCM has completed the read operation of its non-volatile memory	(all 4 criteria for 2 [sec] continuously)		
output Speed Sensor Circuit	P077D	Output Speed Sensor Circuit Low	Output Speed Sensor Circuit Voltage	> 2.727 [V]	Ignition Voltage	> 9000 [mV] for 10 [msec] continuously	1 sec	1
					Battery Voltage Battery Voltage	> 10.2 [V] <= 32.0 [V]		
					The TCM has completed the read operation of its non-volatile			
ressure Control Solenoid "C"	P0798	Pressure Control Solenoid "C"	sum_ie (*)	> 60000 [mA]	memory Ignition Voltage	(all 4 criteria for 2 [sec] continuously) > 9000 [mV] for 10 [msec] continuously	1 to 3 sec	1
control Circuit (SL2 Solenoid)		Electrical			Battery Voltage	> 10.2 [V]	cumulatively	
					Battery Voltage The TCM has completed the read operation of its non-volatile	<= 32.0 [V]		
					memory	(all 4 criteria for 2 [sec] continuously)		
			(*) The first algorithm checks the cumulative		Battery Voltage	> 11 [V] for [> 500 msec]		
			sum of the difference of the linear solenoid feedback current and commanded current. This		Linear Solenoid Feedback current	< 1358 [mA]		

Component / System	Fault Code	Monitor Strategy / Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
-,			sum, named "sum_ie", will be updated on every		Solenoid Cut Condition (*Note 3)	= NOT ACTIVE		
			clock cycle of the microprocessor (10 msec). If the value of the sum becomes greater than a calibrated threshold, a malfunction will be		P0970 (Pressure Control Solenoid "C" Control Circuit Low)	= NOT DETECTED		
			confirmed.		P0971 (Pressure Control Solenoid "C" Control Circuit High)	= NOT DETECTED		
					Emergency Mode (*4)	= NOT ACTIVE		
			ie: Difference of "commanded current" and "feedback current"					
			ie added to "sum_ie" every 10 msec sum_ie is cleared if at least one of the following conditions are satisfied					
			1) Enable conditions are not satisfied					
			2) -50mA =< ie =< 50mA"					
			3) Sign of ie is changed					
			OR	<u></u>				I
			ie (*)	> 50 [mA]	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V]	2 sec	1
					memory	(all 4 criteria for 2 [sec] continuously)		
			(*) The second algorithm checks the absolute value of the difference of the linear solenoid		Battery Voltage	> 11 [V] for [> 500 msec]		
			feedback current and commanded current over		Linear Solenoid Feedback current	< 1358 [mA]		
			time. If the absolute value of the difference of the linear solenoid feedback current and		Solenoid Cut Condition (*Note 3)	= NOT ACTIVE		
			commanded current exceeds a calibrated threshold for a calibrated period of time		P0970 (Pressure Control Solenoid "C" Control Circuit Low)	= NOT DETECTED		
			continuously, a malfunction will be detected.		P0971 (Pressure Control Solenoid "C" Control Circuit High)	= NOT DETECTED		
					Emergency Mode (*4)	= NOT ACTIVE		
			ie : Absolute value of ie					
			ie: Difference between "commanded current" and "feedback current"					
nput/Turbine Speed Sensor "A" Circuit	P07BF	Input/Turbine Speed Sensor "A" Circuit Low	Input Speed Sensor Circuit Voltage	< 0.206 V	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V]	1 sec	1
					memory	(all 4 criteria for 2 [sec] continuously)		
Input/Turbine Speed Sensor "A" Circuit	P07C0	Input/Turbine Speed Sensor "A" Circuit High	Input Speed Sensor Circuit Voltage	> 2.727 V	Ignition Voltage Battery Voltage Battery Voltage	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V]	1 sec	1
					The TCM has completed the read operation of its non-volatile memory	(all 4 criteria for 2 [sec] continuously)		
Gear Ratio (8th Gear)	P07D9	Gear 8 Incorrect Ratio	Difference between actual Gear Ratio and 8th Gear Ratio	> 20 [%]	Current Gear	= 8TH GEAR	12 sec (cumulatively)	1
					Output Speed Ignition Voltage Battery Voltage Battery Voltage Engine Speed	>= 500 [rpm] > 9000 [mV] for 10 [msec] > 10.2 [V] <= 32.0 [V] > 400 [RPM]		

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description					Required	Illun
					Engine Speed Signal Validity U0100 (Lost Communication with ECM/PCM "A") U0073 (CAN Bus-OFF) The TCM has completed the read operation of its non-volatile memory Emergency Mode (*4) Neutral Avoidance Control Solenoid Cut Condition (*Note 3) Time since Solenoid Cut (*Note 3) ontrol has been INACTIVE P0974 (Shift Solenoid "A" Control Circuit High) P0973 (Shift Solenoid "A" Control Circuit High) P0973 (Shift Solenoid "A" Control Circuit Low) Status of all of the Gear Ratio malfunctions: (P0967, P0971, P2721, P2739, P0963, P2763, P0966, P0970, P2720, P2729, P2738, P0962, P2764, P0778, P0798, P2716, P2725, P2734, P0748, P2761) P07C0 (Input/Turbine Speed Sensor "A" Circuit High) P07FD (Input/Turbine Speed Sensor "A" Circuit No Signal) P07TD (Output Speed Sensor "A" Circuit No Signal) P077D (Output Speed Sensor "Circuit High) P0752 (System Voltage Low Supply 2) (*Note 1) P0563 (System Voltage Low Supply 2) (*Note 1) P0660 (Internal Control Module Memory Checksum Error) P0604 (Internal Control Module Random Access Memory (RAM) Error) U0073 (CAN Bus-OFF) U0100 (Lost Communication with ECM/PCM "A") Accelerator Effective Position malfunction (*Note 2) Engine Actual Steady State Torque malfunction (*Note 2) Engine Speed malfunction (*Note 2)	= VALID = NOT DETECTED = NOT DETECTED (all 8 criteria for 2 [sec] continuously) = NOT ACTIVE = NOT ACTIVE = NOT ACTIVE > 8 [sec] ALL Malfunctions = NOT DETECTED		
					Range Selector Position Switch P0705 (Transmission Range Switch Circuit) P0706 (Transmission Range Switch Performance) Garage Shift Control has been INACTIVE for this amount of time continuously Shift Control has been INACTIVE for this amount of time continuously The Input Speed signal is available from the Input Speed Sensor The Output Speed signal is available from the Output Speed Sensor ATF Temperature	= D Range = NOT DETECTED = NOT DETECTED T_GarageFin (*1) T_ShiftFin (*1) = TRUE = TRUE >= -20 [deg C]		

Component / System	Fault Code	Monitor Strategy / Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Quick Stop Detection Flag (*Note 4) Safe Gear Control has been INACTIVE for this amount of time continuously The TCM is not commanding a neutral condition as a reaction to Safe Gear Control. AND the following conditions a	= FALSE tmr_inh_GE (*1) = TRUE re NOT satisfied		
					Difference between actual Gear Ratio and 6th Gear Ratio Difference between actual Gear Ratio and 7th Gear Ratio	< 4 [%] for 1 [sec] continuously < 4 [%] for 1 [sec] continuously		
Gear Ratio (8th Gear Stuck)	P07D9	Gear 8 Incorrect Ratio	Difference between actual Gear Ratio and 7th Gear Ratio	< 4 %	Current Gear Output Speed	= 8TH GEAR >= 60 [rpm]	5 sec	1
			OR Difference between actual Gear Ratio and 6th Gear Ratio	< 4 %	Input Torque	>= 50 [Nm] OR <= -50 [Nm] (occur at least 1 time during detection)		
					Ignition Voltage Battery Voltage Battery Voltage Engine Speed Signal Validity U0100 (Lost Communication with ECM/PCM "A") U0073 (CAN Bus-OFF) The TCM has completed the read operation of its non-volatile memory	> 9000 [mV] for 10 [msec] > 10.2 [V] <= 32.0 [V] > 400 [RPM] = VALID = NOT DETECTED = NOT DETECTED (all 8 criteria for 2 [sec] continuously)		
					Emergency Mode (*4) Neutral Avoidance Control Solenoid Cut Condition (*Note 3) Time since Solenoid Cut (*Note 3) control has been INACTIVE	= NOT ACTIVE = NOT ACTIVE = NOT ACTIVE > 8 [sec]		
					P0974 (Shift Solenoid "A" Control Circuit High) P0973 (Shift Solenoid "A" Control Circuit Low) Status of all of the Gear Ratio malfunctions: (P0967, P0971, P271, P2730, P2729, P0963, P2763, P0966, P0970, P2720, P2729, P2738, P0962, P2764, P0778, P0798, P2716, P2725, P2734, P0748, P2761) P07C0 (Input/Turbine Speed Sensor "A" Circuit High) P07BF (Input/Turbine Speed Sensor "A" Circuit No Signal) P077D (Output Speed Sensor Circuit Low) P077C (Output Speed Sensor Circuit High) P07222 (Output Speed Sensor Circuit High) P0722 (Output Speed Sensor Circuit High) P0752 (System Voltage Low Supply 2) ("Note 1) P0563 (System Voltage High) P2535 (Ignition Switch Run/Start Position Circuit High) P0604 (Internal Control Module Memory Checksum Error) P0604 (Internal Control Module Random Access Memory (RAM) Error) U0073 (CAN Bus-OFF) L0100 (In et Communication with ECM/PCM "A")	ALL Malfunctions = NOT DETECTED		

Component / System	Fault Code	Monitor Strategy / Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Accelerator Effective Position malfunction (*Note 2) Engine Actual Steady State Torque malfunction (*Note 2) Non-Transmission Regulated Steady State Torque malfunction (*Note 2) Engine Speed malfunction (*Note 2)			
					Range Selector Position Switch P0705 (Transmission Range Switch Circuit) P0706 (Transmission Range Switch Performance) Garage Shift Control has been INACTIVE for this amount of time continuously Shift Control has been INACTIVE for this amount of time continuously The Input Speed signal is available from the Input Speed Sensor The Output Speed signal is available from the Output Speed Sensor ATF Temperature Quick Stop Detection Flag (*Note 4) Safe Gear Control has been INACTIVE for this amount of time continuously The TCM is not commanding a neutral condition as a reaction	= D Range = NOT DETECTED = NOT DETECTED T_GarageFin (*1) T_ShiftFin (*1) = TRUE = TRUE >= -20 [deg C] = FALSE tmr_inh_GE (*1) = TRUE		
Tap Up Switch	P0815	Upshift Switch Circuit	"Platform Transmission Tap Up/Down Switch	= \$1 (Increment Switch Active)	to Safe Gear Control.	> 9000 [mV] for 3 sec continuously	34 sec Total	No MIL
			State" CAN Signal		Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory	 > 9000 [mV] for 10 [msec] continuously > 10.2 [V] < 32.0 [V] (all 4 criteria for 2 [sec] continuously) 	(4 sec for P, R, N-Range) (30 sec for D- Range)	, C"
					Diagnostic Service Request to Disable Normal Communication U0140 (Lost Communication with Body Control Module) P0826 (Up and Down Shift Switch Circuit) P1761 (Up and Down Shift Switch Signal Circuit) P0705 (Transmission Range Switch Circuit) P0706 (Transmission Range Switch Performance)	= NOT PRESENT = NOT DETECTED = NOT DETECTED = NOT DETECTED = NOT DETECTED = NOT DETECTED		
Tap Down Switch	P0816	Downshift Switch Circuit	"Platform Transmission Tap Up/Down Switch State" CAN Signal	= \$2 (Decrement Switch Active)	Ignition Voltage	> 9000 [mV] for 3 sec continuously	34 sec Total	No MIL "Special
					Ignition Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory Diagnostic Service Request to Disable Normal Communication	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously) = NOT PRESENT	(4 sec for P, R, N-Range) (30 sec for D- Range)	, C"
					U0140 (Lost Communication with Body Control Module)	= NOT DETECTED		

Component / System	Fault Code	Monitor Strategy / Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					P0826 (Up and Down Shift Switch Circuit) P1761 (Up and Down Shift Switch Signal Circuit) P0705 (Transmission Range Switch Circuit) P0706 (Transmission Range Switch Performance)	= NOT DETECTED = NOT DETECTED = NOT DETECTED = NOT DETECTED		
Tap Up/Down Switch	P0826	Up and Down Shift Switch Circuit	"Platform Transmission Tap Up/Down Switch State" CAN Signal	= \$3 (Illegal Up/Down Switch State Active)	Ignition Voltage Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory Diagnostic Service Request to Disable Normal Communication U0140 (Lost Communication with Body Control Module) P1761 (Up and Down Shift Switch Signal Circuit) P0706 (Transmission Range Switch Circuit) P0706 (Transmission Range Switch Performance)	 NOT DETECTED 9000 [mV] for 3 sec continuously 9000 [mV] for 10 [msec] continuously 10.2 [V] 32.0 [V] (all 4 criteria for 2 [sec] continuously) NOT PRESENT NOT DETECTED 	4 sec	No MIL "Special C"
Manual Mode Switch	P0827	Up and Down Shift Switch Circuit Low Voltage	Manual Mode Switch Signal Level (*) (*) The Manual Mode Switch signal level is determined as a percentage of Ignition Voltage (= Manual Mode Switch Voltage / Ignition Voltage [%])	< 5.0 [%]	Ignition Voltage Battery Voltage Battery Voltage Engine Speed Engine Speed Signal Validity U0100 (Lost Communication with ECM/PCM "A") U0073 (CAN Bus-OFF) The TCM has completed the read operation of its non-volatile memory Ignition Voltage P2534 (Ignition Voltage Low Supply) P2535 (Ignition Switch Run/Start Position Circuit High)	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] > 400 [RPM] = VALID = NOT DETECTED = NOT DETECTED (all 8 criteria for 2 [sec] continuously) 9 [V] <= IG <= 32 [V] = NOT DETECTED = NOT DETECTED	30 sec	No MIL "Special C"
Manual Mode Switch	P0828	Up and Down Shift Switch Circuit High Voltage	Manual Mode Switch Signal Level (*) (*) The Manual Mode Switch signal level is determined as a percentage of Ignition Voltage (= Manual Mode Switch Voltage / Ignition Voltage [%])	> 25.5 [%]	Ignition Voltage Battery Voltage Battery Voltage Engine Speed Engine Speed Signal Validity U0100 (Lost Communication with ECM/PCM "A") U0073 (CAN Bus-OFF) The TCM has completed the read operation of its non-volatile memory Ignition Voltage P2534 (Ignition Voltage Low Supply) P2535 (Ignition Switch Run/Start Position Circuit High)	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] > 400 [RPM] = VALID = NOT DETECTED = NOT DETECTED (all 8 criteria for 2 [sec] continuously) 9 [V] <= IG <= 32 [V] = NOT DETECTED = NOT DETECTED = NOT DETECTED	30 sec	No MIL "Special C"
Transmission Fluid Pressure Sensor/Switch "A" Circuit	P0842	Transmission Fluid Pressure Sensor/Switch "A" Circuit Low	Transmission Fluid Pressure Sensor Status	= ON	The following parameters must be met for a calibrated period of time. Ignition Voltage Battery Voltage Engine Speed Engine Speed Signal Validity U0100 (Lost Communication with ECM/PCM "A")	Time_SwONfailw (*2) > 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] > 400 [RPM] = VALID = NOT DETECTED	1 sec	2

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description					Required	Illum
					U0073 (CAN Bus-OFF) The TCM has completed the read operation of its non-volatile memory Emergency Mode (*4) Neutral Avoidance Control Solenoid Cut Condition (*Note 3) Time since Solenoid Cut (*Note 3) control has been INACTIVE P0974 (Shift Solenoid "A" Control Circuit High) P0973 (Shift Solenoid "A" Control Circuit Low) Status of all of the Gear Ratio malfunctions: (P0967, P0971, P2721, P2730, P2739, P0963, P2763, P0966, P0970, P2720, P2729, P2738, P0962, P2764, P0778, P0798, P2716, P2725, P2734, P0748, P2761) P07BC (Input/Turbine Speed Sensor "A" Circuit High) P07B7 (Input/Turbine Speed Sensor "A" Circuit No Signal) P077D (Output Speed Sensor Circuit Low) P0772 (Output Speed Sensor Circuit Low) P0772 (Output Speed Sensor Circuit High) P0722 (Output Speed Sensor Circuit High) P0752 (System Voltage Low Supply 2) (*Note 1) P0563 (System Voltage High) P0604 (Internal Control Module Memory Checksum Error) P0604 (Internal Control Module Random Access Memory (RAM) Error) U0073 (CAN Bus-OFF) U0100 (Lost Communication with ECM/PCM "A") Accelerator Effective Position malfunction (*Note 2) Non-Transmission Regulated Steady State Torque malfunction (*Note 2) Engine Actual Steady State Torque malfunction (*Note 2)	= NOT DETECTED (all 8 criteria for 2 [sec] continuously) = NOT ACTIVE = NOT ACTIVE = NOT ACTIVE > 8 [sec] ALL Malfunctions = NOT DETECTED		
					Garage Shift Control has been INACTIVE for this amount of time continuously Shift Control has been INACTIVE for this amount of time continuously ATF Temperature P0713 (Transmission Fluid Temperature Sensor "A" Circuit High) P0712 (Transmission Fluid Temperature Sensor "A" Circuit Low) Range Selector Position Switch Time Since Shifting to P,R, or N	T_GarageFin (*1) T_ShiftFin (*1) >= 20 [deg C] = NOT DETECTED = NOT DETECTED = P or R or N Range Time_SwDNFin (*2)		

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description					Required	Illum.
					The Input Speed signal is available from the Input Speed	= TRUE		
					Sensor The Output Speed signal is available from the Output Speed Sensor	= TRUE		
					Quick Stop Detection Flag (*Note 4)	= FALSE		
					Safe Gear Control has been INACTIVE for this amount of time			
					continuously	tmr_inh_GE (*1)		
					Gear Ratio Failure Status (P0731, P0732, P0733, P0734, P0735, P0729, P076F, P07D9)	ALL = NOT DETECTED		
					The TCM is not commanding a neutral condition as a reaction to Safe Gear Control.	= TRUE		
Transmission Fluid Pressure Sensor/Switch "A" Circuit	P0843	Transmission Fluid Pressure Sensor/Switch "A" Circuit High	Current Gear	= 1st, 2nd, 3rd, 4th, or 5th	The following parameters must be met for a calibrated period of	Time_SwOFFfailw (*2)	2 sec	2
Sensor/Switch A Circuit		Sensor/Switch A Circuit Figh	Difference between actual Gear Ratio and	< 4 %	time continuously. Ignition Voltage	> 9000 [mV] for 10 [msec] continuously	_	
			Expected Gear Ratio		Battery Voltage	> 10.2 [V]		
			ATF Pressure Command	>= 1600 [kPa]	Battery Voltage	<= 32.0 [V]		
			ATF Pressure Switch Status	= OFF	Engine Speed	> 400 [RPM]		
				-	Engine Speed Signal Validity			
			Engine Speed	> 500 [rpm]	U0100 (Lost Communication with ECM/PCM "A") U0073 (CAN Bus-OFF)	= NOT DETECTED = NOT DETECTED		
			Time since Engine Speed exceeded threshold	> 1000 [msec]	The TCM has completed the read operation of its non-volatile	= NOT DETECTED		
			above Output Speed	>= 60 [rpm]	memory	(all 8 criteria for 2 [sec] continuously)		
			Engine Torque without Acceleration	>= 80 [Nm]				
			Input Speed	<= 6000 [rpm]	Emergency Mode (*4)			
					Neutral Avoidance Control Solenoid Cut Condition (*Note 3)	= NOT ACTIVE = NOT ACTIVE		
					Time since Solenoid Cut (*Note 3)	> 8 [sec]		
					P0974 (Shift Solenoid "A" Control Circuit High) P0973 (Shift Solenoid "A" Control Circuit Low) Status of all of the Gear Ratio malfunctions: (P0967, P0971, P2721, P2730, P2739, P0963, P2763, P0966, P0970, P2720, P2729, P2739, P0962, P2764, P0778, P0798, P2716, P2725, P2734, P0748, P2761) P07C0 (Input/Turbine Speed Sensor "A" Circuit High) P07BF (Input/Turbine Speed Sensor "A" Circuit Low) P0717 (Input/Turbine Speed Sensor "A" Circuit No Signal) P077D (Output Speed Sensor Circuit High) P077C (Output Speed Sensor Circuit High) P0772 (Output Speed Sensor Circuit High) P0772 (Output Speed Sensor No Pulse) P0592 (System Voltage Low Supply 2) ("Note 1) P0663 (System Voltage Low Supply 2) ("Note 1) P0663 (System Voltage Low Supply 2) ("Note 1) P06601 (Internal Control Module Memory Checksum Error) P0604 (Internal Control Module Random Access Memory (RAM) Error) U0073 (CAN Bus-OFF) U0100 (Lost Communication with ECM/PCM "A") Accelerator Effective Position malfunction ("Note 2) Engine Actual Steady State Torque malfunction ("Note 2) Engine Speed malfunction ("Note 2)	ALL Malfunctions = NOT DETECTED		

Component / System	Fault Code	Monitor Strategy / Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Manual Mode Switch	P085F	Up and Down Shift Switch Circuit Stuck in Range	Manual Mode Switch Signal Level (*) (*) The Manual Mode Switch signal level is determined as a percentage of Ignition Voltage (= Manual Mode Switch Voltage / Ignition Voltage [%])	10.4 [%] < Manual Switch < 14.8 [%]	Range Selector Position Switch Garage Shift Control has been INACTIVE for this amount of time continuously Shift Control has been INACTIVE for this amount of time continuously ATF Temperature P0713 (Transmission Fluid Temperature Sensor "A" Circuit High) P0712 (Transmission Fluid Temperature Sensor "A" Circuit Low) The Input Speed signal is available from the Input Speed Sensor The Output Speed signal is available from the Output Speed Sensor Quick Stop Detection Flag ("Note 4) Safe Gear Control has been INACTIVE for this amount of time continuously Gear Ratio Failure Status (P0731, P0732, P0733, P0734, P0735, P0729, P076F, P07D9) The TCM is not commanding a neutral condition as a reaction to Safe Gear Control. Ignition Voltage Battery Voltage Battery Voltage Battery Voltage Battery Voltage Battery Voltage Battery Voltage Ingine Speed Signal Validity U0100 (Lost Communication with ECM/PCM "A") U0073 (CAN Bus-OFF) The TCM has completed the read operation of its non-volatile memory Ignition Voltage P2534 (Ignition Voltage Low Supply) P2535 (Ignition Switch Run/Start Position Circuit High)	= D Range T_GarageFin (*1) T_ShiftFin (*1) >= OT_Sw_det (*14) = NOT DETECTED = NOT DETECTED = TRUE = TRUE = FALSE tmr_inh_GE (*1) ALL = NOT DETECTED = TRUE > 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] > 400 [RPM] = VALID = NOT DETECTED = NOT DETECTED = NOT DETECTED (all 8 criteria for 2 [sec] continuously) 9 [V] <= IG <= 32 [V] = NOT DETECTED = NOT DETECTED = NOT DETECTED = NOT DETECTED = NOT DETECTED	30 sec	No MIL "Specia C"
Manual Mode Switch	P085F	Up and Down Shift Switch Circuit Stuck in Range	Manual Mode Switch Signal Level (*) (*) The Manual Mode Switch signal level is determined as a percentage of Ignition Voltage (= Manual Mode Switch Voltage / Ignition Voltage [%]) The time period is based on the Gear Selector Position: - for 4 sec continuously in P,R, or N range AND - for 30 sec continuously in D range	14.8 [%] <= Manual Switch < 25.5 [%]	Ignition Voltage Battery Voltage Engine Speed Signal Validity U0100 (Lost Communication with ECM/PCM "A") U0073 (CAN Bus-OFF) The TCM has completed the read operation of its non-volatile memory Ignition Voltage P2534 (Ignition Voltage Low Supply) P2535 (Ignition Switch Run/Start Position Circuit High) P0705 (Transmission Range Switch Performance)	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] > 400 [RPM] = VALID = NOT DETECTED = NOT DETECTED (all 8 criteria for 2 [sec] continuously) 9 [V] <= IG <= 32 [V] = NOT DETECTED = NOT DETECTED = NOT DETECTED = NOT DETECTED = NOT DETECTED	34 sec (cumulative between P/R/N and D range tests)	No MIL "Special C"

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description	1	1		1	Required	Illum.
Pressure Control Solenoid "A" Control Circuit (SLT Solenoid)	P0962	Pressure Control Solenoid "A" Control Circuit Low	Linear Solenoid Feedback Current	< 20mA	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory Solenoid Cut Condition (*Note 3) P0963 (Pressure Control Solenoid *A* Control Circuit High)	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously) = NOT ACTIVE = NOT DETECTED for [1 sec]	500 msec	1
Pressure Control Solenoid "A"	P0963	Pressure Control Solenoid "A" Control	Linear Solenoid Feedback Current	>= 1358mA	Ignition Voltage	> 9000 [mV] for 10 [msec] continuously	500 msec	1
Control Circuit (SLT Solenoid)	10303	Circuit High			Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory P0962 (Pressure Control Solenoid "A" Control Circuit Low)	 a) a contract of the contract of		
Pressure Control Solenoid "B" Control Circuit (SL1 Solenoid)	P0966	Pressure Control Solenoid "B" Control Circuit Low	Linear Solenoid Feedback Current	< 20mA	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory Solenoid Cut Condition (*Note 3) P0967 (Pressure Control Solenoid *B* Control Circuit High)	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously) = NOT ACTIVE = NOT DETECTED for [1 sec]	500 msec	1
Pressure Control Solenoid "B" Control Circuit (SL1 Solenoid)	P0967	Pressure Control Solenoid "B" Control Circuit High	Linear Solenoid Feedback Current	>= 1358mA	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously)	500 msec	1
					P0966 (Pressure Control Solenoid "B" Control Circuit Low)	= NOT DETECTED for [1 sec]		
Pressure Control Solenoid "C" Control Circuit (SL2 Solenoid)	P0970	Pressure Control Solenoid "C" Control Circuit Low	Linear Solenoid Feedback Current	< 20mA	Ignition Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory Solenoid Cut Condition (*Note 3) P0971 (Pressure Control Solenoid *C* Control Circuit High)	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously) = NOT ACTIVE = NOT DETECTED for [1 sec]	500 msec	1
Pressure Control Solenoid "C" Control Circuit (SL2 Solenoid)	P0971	Pressure Control Solenoid "C" Control Circuit High	Linear Solenoid Feedback Current	>= 1358mA	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory P0970 (Pressure Control Solenoid "C" Control Circuit Low)	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously) = NOT DETECTED for [1 sec]	500 msec	1
Shift Solenoid *A* Control Circuit (SR solenoid)	P0973	Shift Solenoid "A" Control Circuit Low	Comparison of SR solenoid Commanded State to Actual State (*) The TCM software does not directly determine the Actual State of the solenoid. This is done by the solenoid driver hardware. The software iust reads the state as ON or OFF.	Actual State is "OFF" when Commanded State is "ON"	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory SR Solenoid Command	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously) = ON	500 msec	1

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description		1			Required	Illum.
			The solenoid driver determines the state is ON at Battery Voltage - 1 [V]		Time elapsed since last solenoid state change	> 10 msec		
Shift Solenoid "A" Control Circuit (SR solenoid)	P0974	Shift Solenoid "A" Control Circuit High	Comparison of SR solenoid Commanded State to Actual State (*) The TCM software does not directly determine the Actual State of the solenoid. This is done by the solenoid driver hardware. The software just reads the state as ON or OFF. The solenoid driver determines the state is ON at Battery Voltage - 1 [V]	Actual State is "ON" when Commanded State is "OFF"	Ignition Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory SR Solenoid Command Time elapsed since last solenoid state change	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously) = OFF > 10 msec	500 msec	1
Transmission Control Module (TCM)	P16F3	Control Module Redundant Memory Performance	Downshift commanded (*) (*) The solenoid patterns for the currently engaged gear, target gear, and minimum allowed gear (which is dependent on the vehicle speed) are compared, and the downshift to be commanded would cause unintended vehicle deceleration.	< Minimum Safe Gear (*)	P0606 (Control Module Processor) - Solenoid Cut Malfunction Solenoid Cut Request	= NOT DETECTED = INACTIVE	150 msec	1
Un-usual shifting with Max Pressure Pressure Control Solenoid "B" Control Circuit (SL1 Solenoid) Pressure Control Solenoid "C" Control Circuit (SL2 Solenoid) Pressure Control Solenoid "D" Control Circuit (SL3 Solenoid) Pressure Control Solenoid "E" Control Circuit (SL4 Solenoid) Pressure Control Solenoid "F"	P170A P170B P170C P170D P170E	Pressure Control Solenoid Valve "2" Max Pressure Not Achieved Pressure Control Solenoid Valve "3" Max Pressure Not Achieved Pressure Control Solenoid Valve "4" Max Pressure Not Achieved Pressure Control Solenoid Valve "5" Max Pressure Not Achieved Pressure Control Solenoid Valve "6" Max Pressure Not Achieved	Each component (C1, C2, C3, C4, and B1) diagnosed has its own unique error counter, which will diagnose the failed component if the malfunction is detected. These counters are shared between all of the algorithms. If any one of those counters becomes equal to a calibrated total value, the malfunction will be confirmed and a DTC will be stored. There are (7) unique algorithms which run simultaneously in order to attempt to detect a MAX pressure malfunction. These algorithms are fairly complex; therefore they have been described in detail in section 5.		Ignition Voltage Battery Voltage Engine Speed Signal Validity U0100 (Lost Communication with ECM/PCM "A") U0073 (CAN Bus-OFF) The TCM has completed the read operation of its non-volatile memory	> 9000 [mV] for 10 [msec] > 10.2 [V] <= 32.0 [V] > 400 [RPM] = VALID = NOT DETECTED = NOT DETECTED (all 8 criteria for 2 [sec] continuously)	(Shift time dependent) 300 msec to 2 sec, 5 times cumulatively.	1
			count_fail_SLC1MAX_usft (*) count_fail_SLC2MAX_usft (*) count_fail_SLC3MAX_usft (*) count_fail_SLC4MAX_usft (*) count_fail_SLB1MAX_usft (*) (*):refer to conditions A-1 to E below	>= 5 >= 5 >= 5	Emergency Mode (*4) Neutral Avoidance Control Solenoid Cut Condition (*Note 3) Time since Solenoid Cut (*Note 3) control has been INACTIVE P0974 (Shift Solenoid *A* Control Circuit High) P0973 (Shift Solenoid *A* Control Circuit Low) Status of all of the Gear Ratio malfunctions: (P0967, P0971, P2721, P2730, P2739, P0963, P2763, P0966, P0970, P2720, P2729, P2738, P0962, P2764, P0778, P0798, P2716, P2725, P2734, P0748, P2761) P07C0 (Input/Turbine Speed Sensor *A* Circuit High) P07FF (Input/Turbine Speed Sensor *A* Circuit No Signal)	= NOT ACTIVE = NOT ACTIVE = NOT ACTIVE > 8 [sec] ALL Malfunctions = NOT DETECTED		

Component / System	Fault Code	Monitor Strategy / Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
System	Code	Description			P077D (Output Speed Sensor Circuit Low) P077Z (Output Speed Sensor No Pulse) P0522 (Duput Speed Sensor No Pulse) P0592 (System Voltage Low Supply 2) (*Note 1) P0563 (System Voltage Low Supply 2) (*Note 1) P0535 (gnition Switch Run/Start Position Circuit High) P0601 (Internal Control Module Memory Checksum Error) P0604 (Internal Control Module Random Access Memory (RAM) Error) U0100 (Lost Communication with ECM/PCM "A") Accelerator Effective Position malfunction (*Note 2) Engine Actual Steady State Torque malfunction (*Note 2) Non-Transmission Regulated Steady State Torque malfunction (*Note 2) Engine Speed malfunction (*Note 2) Garage Shift Control has been INACTIVE for this amount of time continuously Range Selector Position Switch Wheel Spin Detected Output Speed ATF temperature The Input Speed signal is available from the Input Speed	T_GarageFin (*1) = D Range = FALSE >= 300 [rpm] >= -100 [degC] = TRUE	Required	Illum.
					Sensor The Output Speed signal is available from the Output Speed Sensor Safe Gear Control has been INACTIVE for this amount of time continuously	= TRUE tmr_inh_GE (*1)		
			Unusual Shifting Toot A 4. Un shift with Tis w	n (C1 C2 C4 an B4 materia		1	-	
			Unusual Shifting Test A-1: Up-shift with Tie-u If a pressure control malfunction exists during ar to release the element commanded to disengage possible to detect when the transmission takes a the up-shift (Input Speed change from current gengagement pressure is sufficient.	n up-shift, it may be impossible e. Such a malfunction is an excessively long time to start				
			When the following conditions are ALL satisfied, be met. Based on the Upshift that was occurring incremented as follows:		-			
			for up-shifts (2-8, 3-7, 4-6, 5-6, 5-7, 5-8)	count_fail_SLC1MAX_usft	4			
			for up-shifts (3-4, 3-5, 7-8)	count_fail_SLC3MAX_usft				
	1		for up-shifts (4-5, 6-7, 6-8)	count_fail_SLC4MAX_usft				
			for up-shifts (2-3, 2-4, 2-5)	count_fail_SLB1MAX_usft				
			During any of the following Up-Shifts	(2-8, 3-7, 4-6, 5-6, 5-7, 5-8, 3- 4, 3-5, 7-8, 4-5, 6-7, 6-8, 2-3, 2 4, 2-5)				

Component / System	Fault Code	Monitor Strategy / Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
-,			Shift Control for Torque Phase B has begun	= TRUE				
			Time since beginning of Torque Phase B	>= TimeTrp_B (*10)				
			Applied Element Command Pressure	> 2.5 [kg/cm^2]				
			Shifting does not begin despite of shifting commanded. (No change in inRpm eventhough the shift command is made)	= TRUE				
			Max of engine flare ratio	<= 50 [rpm]				
			The gear ratio before shift control began is normal (*A) OR The gear ratio at the beginning of the shift is normal (*B)	= TRUE				
			Input Torque	>= 50 [Nm] OR				
				<= -50 [Nm]				
			(*A) This condition is met if the following is true:					
			Difference between actual Gear Ratio and expected Gear Ratio (*B) This condition is met if the following is true:	< 4 [%]				
			Difference between actual Gear Ratio and expected Gear Ratio	< 8 [%]				
			Unusual Shifting Test A-2: Down-shift with Ti				-	
			If a pressure control malfunction exists during a to release an element which is supposed to dise possible to detect when the transmission takes a a down-shift (Input Speed change from current g engagement pressure is sufficient.	down-shift, it may be impossible engage. Such a malfunction is an excessively long time to start				
			When the following conditions are ALL satisfied, be met. Based on the Down-shift that was occu incremented as follows:					
			for down-shifts (5-2, 5-3, 5-4, 6-4,7-3, 8-2)	count_fail_SLC2MAX_usft				
			for down-shifts (3-2, 7-5, 7-6)	count_fail_SLC3MAX_usft				
			for down-shifts (4-2, 4-3, 6-5)	count_fail_SLC4MAX_usft				
			for down-shifts (8-5, 8-6, 8-7)	count_fail_SLB1MAX_usft				
			During any of the following Down-Shifts	(3-2, 4-2, 4-3, 5-2, 5-3, 5-4, 6- 4, 6-5, 7-3, 7-5, 7-6, 8-2, 8-5, 8- 6, 8-7)				
			After "Start of initial release pressure control phase"	= TRUE				
			Release Pressure Control Phase Duration	>= Time_failA_down1 (*10) AND >= Time_failA_down2 (*10)				
			Applied Element Command Pressure	> 3.0 [kg/cm^2] when Input Torque with No Acceleration < 100 [Nm]				
			Shifting does not begin despite of shifting commanded. (No change in inRpm eventhough the shift command is made)	= TRUE				

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description					Required	Illum.
			Min of engine flare ratio	>= -50 [rpm]				
			The gear ratio before shift control began is normal (*A)	= TRUE				
			OR					
			The gear ratio at the beginning of the shift is normal (*B)					
			Input Torque	>= 50 [Nm]				
				OR				
				<= -50 [Nm]				
			(*A) This condition is met if the following is true:					
			Difference between actual Gear Ratio and expected Gear Ratio	< 4%				
			(*B) This condition is met if the following is true:					
			Difference between actual Gear Ratio and	< 8 [%]				
			expected Gear Ratio					
							-	
			Unusual Shifting Test B-1: Up-shift with Engir The TL80SN 8-Speed transmission is equipped		sed)		-	
			any effects of falsely engaged brakes or clutches	s. However, during some shift				
			types if an element is falsely engaged, the torque clutches and/or brakes will be disrupted.	e transfer from the expected				
			clutches and/or blakes will be disrupted.					
			When ALL of the conditions of a state are satisfi	ied, the function then moves to				
			the next state. Based on the Up-shift that was o	occurring, the associated counter				
			is incremented as follows:					
			for up-shifts (6-7, 6-8)	count_fail_SLC1MAX_usft				
			for up-shifts (7-8)	count_fail_SLC4MAX_usft				
			for up-shifts (3-4, 3-5, 4-5)	count_fail_SLB1MAX_usft				
				•				
			State 1 (Start Detection due to Deviation from E:	xpected Transmission Input				
			Speed) If ALL conditions are met:					
			- Begin the "Time Since State 1" timer					
			- Proceed to State 2 During any of the following single clutch to	(6-7, 6-8, 7-8, 3-4, 3-5, 4-5)				
			clutch Up-shifts					
			Input Speed - (Output Speed x Gear Ratio of current gear before shifting)	>= flare_fail_up (*11)				
			NOT in multiplex shifting	= TRUE				
			State 2 (Determine the Fault Type or check for In	nput Speed Deviation Correction				
)					
			Criteria 2-1: if ALL conditions are met: - EXIT the B-1 Algorithm					
			Input Speed - (Output Speed x Gear Ratio of	<= flare_fail_up (*11) - 200				
			current gear before shifting)	[rpm]				
			TCM currently commanding a Clutch-to-Clutch	= FALSE				
I	1 1		Up-shift	1		I	I	I

Component / System	Fault Code	Monitor Strategy / Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illun
oystem		Decemption	Criteria 2-2: if ALL conditions are met: - Increment count_fail_SLB1MAX_usft - Start the "Exit Unusual Shifting Test B-1" timer					
			- Proceed to State 3 The TCM is commanding a (3-4, 3-5, or 4-5 up- shift)	= TRUE				
			"Time Since State 1" timer	> Time324 (*10) [sec]				
			Input Speed Acceleration Time since the start of the apply pressure	> 5000 [rpm/sec] for 0.03 [sec] < 1.0 [sec]				
			control Criteria 2-3: if ALL conditions are met:	1.0 [300]				
			Increment count_fail_SLC1MAX_usft Start the "Exit Unusual Shifting Test B-1" timer Proceed to State 3					
			The TCM is commanding a (6-7 or 6-8 up-shift)	= TRUE				
			"Time Since State 1" timer Input Speed Acceleration	> Time324 (*10) [sec] > 5000 [rpm/sec]				
			Time since the start of the apply pressure control	for 0.03 [sec] < 1.0 [sec]				
			Criteria 2-4: if ALL conditions are met: - Start the "Exit Unusual Shifting Test B-1" timer - Proceed to State 3					
			The TCM is commanding a (7-8 up-shift)	= TRUE				
			"Time Since State 1" timer	> Time324 (*X) [sec]				
			Input Speed Acceleration	> 5000 [rpm/sec] for 0.03 [sec]				
			Time since the start of the apply pressure control Criteria 2-5: if condition (A) AND (condition (B) C	< 1.0 [sec] DR (C)) are met:				
			- EXIT the B-1 Algorithm					
			(A) "Time Since State 1" timer	> TimeFailB (*10) [sec]				
			(B) "Release Element Pressure at Flare Start"	> 2.0 [kg/cm^2]				
			(C) Applied Element Commanded Pressure	> 2.0 [kg/cm^2]				
			State 3 (Conclude Malfunction Detection and Re if ALL conditions are met: - Exit the B-1 Algorithm	sume Normal Operations)				
			"Exit Unusual Shifting Test B-1" timer	> TimeFailB (*10) [sec]				
			Unusual Shifting Test B-2: Down-shift with En	gine Flare (B1 not released)		•		1
			The TL80SN 8-Speed transmission is equipped any effects of falsely engaged brakes or clutches types if an element is falsely engaged, the torque clutches and/or brakes will be disrupted. A symp large Input Speed Deviation (*1) (i.e. engine flare	with failsafe valves to mitigate s. However, during some shift e transfer from the expected otom of such a malfunction is a				

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MI
System	Code	Description				1	Required	Illur
			State 1 (Start Detection due to Deviation from E. Speed)	xpected Transmission Input				
			Criteria 1-1: if ALL conditions are met: If ALL conditions are met: - Begin the "Time Since State 1" timer - Proceed to State 2					
			During the following Down-shift	(4-3)				
			Time since the start of the apply pressure control	< 1.0 [sec]				
			NOT in multiplex shifting	= TRUE				
			Input Speed - (Output Speed x Gear Ratio of gear expected after the shift)	>= 500 [rpm]				
			Input Speed Acceleration	> 5000 [rpm/sec] for 0.03 [sec]				
			The gear ratio before shift control began is normal (*A) OR	= TRUE				
			The gear ratio at the beginning of the shift is normal (*B)					
			(*A) This condition is met if the following is true:					
			Difference between actual Gear Ratio and expected Gear Ratio	< 4%				
			(*B) This condition is met if the following is true:					
			Difference between actual Gear Ratio and expected Gear Ratio	< 8 [%]				
			Criteria 1-2: if ALL conditions are met:					
			If ALL conditions are met: - Begin the "Time Since State 1" timer - Proceed to State 2					
			During the following Down-shift	(5-4, 5-3)				
			Time since the start of the apply pressure control	< 1.0 [sec]				
			NOT in multiplex shifting	= TRUE				
			Input Speed - (Output Speed x Gear Ratio of gear expected after the shift)	>= 500 [rpm]				
			Input Speed Acceleration	> 5000 [rpm/sec] for 0.03 [sec]				
			The gear ratio at the beginning of the shift indicates 8th gear	= TRUE				
			State 2 (Increment the malfunction counter or wa	ait for the shift to complete)				
			Criteria 2-1: if ALL conditions are met: - Start the "Exit Unusual Shifting Test B-2" timer - Increment count_fail_SLB1MAX_usft - Proceed to State 3					
			"Time Since State 1" timer	> Time324 (*10) [sec]				
			Criteria 2-2: if condition (A) AND (condition (B) C - Exit the B-2 Algorithm	OR (C)) are met:				

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description			-		Required	Illum.
			(A) During the following Down-shift	(4-3)				
			(B) The shift has completed	= TRUE				
			(C) Input Speed - (Output Speed x Gear Ratio of gear expected after the shift)	< 500 [rpm]				
			Criteria 2-3: if condition (A) AND (condition (B) (- Exit the B-2 Algorithm					
			(A) During the following Down-shift	(5-4, 5-3)				
			(B) The shift has completed	= TRUE				
			(C) Input Speed - (Output Speed x Gear Ratio of gear expected after the shift)	< 500 [rpm]				
			State 3 (Conclude Malfunction Detection and Re if ALL conditions are met: - Exit the B-2 Algorithm	esume Normal Operations)				
			"Exit Unusual Shifting Test B-2" timer	> Time423B (*10) [sec]				
			Unusual Shifting Test B-3: Down-shift with Er			•		
			The TL80SN 8-Speed transmission is equipped any effects of falsely engaged brakes or clutcher types if an element is falsely engaged, the torqu clutches and/or brakes will be disrupted. A sym large Input Speed Deviation (*1) (i.e. engine flare	s. However, during some shift e transfer from the expected ptom of such a malfunction is a				
			State 1 (Start Detection due to Deviation from E Speed)	xpected Transmission Input				
			Criteria 1-1: if ALL conditions are met: If ALL conditions are met: - Begin the "Time Since State 1" timer - Proceed to State 2					
			During the following Down-shift	(8-7, 8-6, 7-6)				
			Time since the start of the apply pressure control	< 1.0 [sec]				
			NOT in multiplex shifting	= TRUE				
			Input Speed - (Output Speed x Gear Ratio of gear expected after the shift)	>= 300 [rpm]				
			Input Speed Acceleration	> 5000 [rpm/sec] for 0.03 [sec]				
			The gear ratio before shift control began is normal (*A) OR	= TRUE				
			The gear ratio at the beginning of the shift is normal (*B)					
			(*A) This condition is met if the following is true:					
			Difference between actual Gear Ratio and expected Gear Ratio (*B) This condition is met if the following is true:	< 4 [%]				
			Difference between actual Gear Ratio and expected Gear Ratio	< 8 [%]				

Component / System	Fault Code	Monitor Strategy / Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
		·	State 2 (Increment the malfunction counter or wa	ait for the shift to complete)				
			Criteria 2-1: if ALL conditions are met: - Start the "Exit Unusual Shifting Test B-3" timer - Increment count_fail_SLC1MAX_usft - Proceed to State 3					
			"Time Since State 1" timer	> Time857a (*10) [sec]				
			Criteria 2-2: if condition (A) AND (condition (B) C - Exit the B-3 Algorithm	DR (C)) are met:				
			(A) During the following Down-shift	(8-7, 8-6, 7-6)				
			(B) The shift has completed	= TRUE				
			(C) Input Speed - (Output Speed x Gear Ratio of gear expected after the shift)	< 300 [rpm]				
			State 3 (Conclude Malfunction Detection and Re if ALL conditions are met: - Exit the B-3 Algorithm	sume Normal Operations)				
			"Exit Unusual Shifting Test B-3" timer	> Time857b (*X) [sec]				
			Unusual Shifting Test B-4: Down-shift with En	gine Flare (C3 not released)			-	
			The TL80SN 8-Speed transmission is equipped any effects of falsely engaged brakes or clutches types if an element is falsely engaged, the torque clutches and/or brakes will be disrupted. A symp large Input Speed Deviation (*1) (i.e. engine flare	b. However, during some shift transfer from the expected botom of such a malfunction is a				
			State 1 (Start Detection due to Deviation from E: Speed)	xpected Transmission Input				
			Criteria 1-1: if ALL conditions are met: If ALL conditions are met: - Begin the "Time Since State 1" timer - Proceed to State 2					
			During the following Down-shift	(5-4)				
			Time since the start of the apply pressure control	< 1.0 [sec]				
			NOT in multiplex shifting	= TRUE				
			Input Speed - (Output Speed x Gear Ratio of gear expected after the shift)	>= 300 [rpm]				
			Input Speed Acceleration	> 5000 [rpm/sec] for 0.03 [sec]				
			The gear ratio at the beginning of the shift is 7th					
			gear					
			State 2 (Increment the malfunction counter or wa	ait for the shift to complete)				
			Criteria 2-1: if ALL conditions are met: - Start the "Exit Unusual Shifting Test B-4" timer - Increment count_fail_SLC3MAX_usft - Proceed to State 3					
			"Time Since State 1" timer	> Time54a (*10) [sec]				

Component / System	Fault Code	Monitor Strategy / Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
		•	Criteria 2-2: if condition (A) AND (condition (B) - Exit the B-4 Algorithm	OR (C)) are met:				
			During the following Down-shift	(5-4)				
			(B) The shift has completed	= TRUE				
			(C) Input Speed - (Output Speed x Gear Ratio of gear expected after the shift)	< 300 [rpm]				
			State 3 (Conclude Malfunction Detection and R if ALL conditions are met: - Exit the B-4 Algorithm	esume Normal Operations)				
			"Exit Unusual Shifting Test B-4" timer	> Time54b (*X) [sec]				
			Unusual Shifting Test E: Gear Ratio Malfunc					
			Note: To confirm if a shift ratio is fulfilled, the for 1 - Actual Gear Ratio / Expected Gear Ratio					
			If all of the following conditions are met: - Increment count_fail_SLC2MAX_usft					
			During the following shifts	(1-2, 1-3, 1-4, 1-5)				
			5th gear ratio fulfilled at the beginning of the shift for 1.0 sec	= TRUE				
			Input Torque	<= -50 [Nm] OR				
				>= 50 [Nm]				
			Applied Element Command Pressure	> 2.5 [kg/cm^2]				
			If all of the following conditions are met: - Increment count_fail_SLC2MAX_usft					
			During the following shifts	(2-8)				
			8th gear ratio fulfilled at the beginning of the shift for 1.0 sec	= TRUE				
			Input Torque	<= -50 [Nm] OR				
				>= 50 [Nm]				
			If all of the following conditions are met: - Increment count_fail_SLC2MAX_usft					
			During the following shifts	(3-7)				
			7th gear ratio fulfilled at the beginning of the shift for 1.0 sec	= TRUE				
			Input Torque	<= -50 [Nm] OR				
				>= 50 [Nm]				
			If all of the following conditions are met: - Increment count_fail_SLC2MAX_usft					
			During the following shifts	(4-6)				
			6th gear ratio fulfilled at the beginning of the shift for 1.0 sec	= TRUE				
			Input Torque	<= -50 [Nm]				
				OR >= 50 [Nm]				

Component / System	Fault Code	Monitor Strategy / Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
System	Coue	Description	If all of the following conditions are met:				Requireu	mum.
			- Increment count_fail_SLC3MAX_usft					
			During the following shifts	(1-2, 1-3, 1-4, 1-5, 2-3, 2-4, 2-				
				5, 4-5, 4-3, 4-2, 4-1, 2-1, 2-				
			3rd gear ratio fulfilled at the beginning of the	1EB, 1EB-1, 1-1EB) = TRUE				
			shift for 1.0 sec	= IRUE				
			Input Torque	<= -50 [Nm] OR				
				>= 50 [Nm]				
			Applied Element Command Pressure	> 2.5 [kg/cm^2]				
			(this condition only applies to the following shifts (1-2, 1-3, 1-4, 1-5)					
			If all of the following conditions are met:					
			- Increment count_fail_SLC3MAX_usft					
			During the following shifts	(5-6, 5-7, 5-8, 6-5, 6-7, 6-8, 8-				
			7th gear ratio fulfilled at the beginning of the	7, 8-6, 8-5, 8-2) = TRUE				
			shift for 1.0 sec					
			Input Torque	<= -50 [Nm] OR				
				>= 50 [Nm]				
			If all of the following conditions are met: - Increment count_fail_SLC4MAX_usft					
			During the following shifts	(1-2, 1-3, 1-4, 1-5, 2-3, 2-4, 2- 5, 2-1, 2-1EB, 1EB-1, 1-1EB)				
			4th gear ratio fulfilled at the beginning of the shift for 1.0 sec	= TRUE				
			Input Torque	<= -50 [Nm]				
				OR >= 50 [Nm]				
			Applied Element Command Pressure	> 2.5 [kg/cm^2]				
			(this condition only applies to the following shifts (1-2, 1-3, 1-4, 1-5)					
			If all of the following conditions are met: - Increment count_fail_SLC4MAX_usft	•				
			During the following shifts	(5-6, 5-7, 5-8, 8-7, 8-6, 8-5)				
			6th gear ratio fulfilled at the beginning of the shift for 1.0 sec	= TRUE				
			Input Torque	<= -50 [Nm]				
				OR >= 50 [Nm]				
			If all of the following conditions are met:					
			- Increment count_fail_SLB1MAX_usft					
			During the following shifts	(1-2, 1-3, 1-4, 1-5, 1EB-1, 1- 1EB)				
			2nd gear ratio fulfilled at the beginning of the shift for 1.0 sec	= TRUE				
			Input Torque	<= -50 [Nm] OR				
				>= 50 [Nm]				

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description		1		1	Required	Illum.
			Applied Element Command Pressure (this condition only applies to the following shifts (1-2, 1-3, 1-4, 1-5)	> 2.5 [kg/cm^2]				
			If all of the following conditions are met: - Increment count_fail_SLB1MAX_usft					
			During the following shifts	(5-6, 5-7, 5-8)	-			
			8th gear ratio fulfilled at the beginning of the shift for 1.0 sec	= TRUE				
			Input Torque	<= -50 [Nm] OR				
				>= 50 [Nm]				
Lateral Acceleration Sensor Signal	P175F	Acceleration Sensor Signal message	The "Longitude/Latitude Acceleration Sensor	= 5 counts	Ignition Voltage	> 9000 [mV] for 3 sec continuously	250 msec	No MIL
(Rolling Count)		Counter Incorrect	Value Alive Rolling Count" CAN signal is not updated for a calibratable number of counts consecutively.		Ignition Voltage Battery Voltage Battery Voltage	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V]		"Special C"
					The TCM has completed the read operation of its non-volatile			
					memory	(all 4 criteria for 2 [sec] continuously)		
					Diagnostic Service Request to Disable Normal Communication			
Tan Uz (Daver Quitab	D4704	Lie and Davie Ohift Quitch Qianal		E acusta	U0140 (Lost Communication with Body Control Module)	= NOT DETECTED	150	NI- MIL
Tap Up/Down Switch (Rolling Count)	P1761	Up and Down Shift Switch Signal Circuit	The "Platform Transmission Tap Up/Down Switch Status Alive Rolling Count" CAN signal is	= 5 counts	Ignition Voltage Ignition Voltage	> 9000 [mV] for 3 sec continuously > 9000 [mV] for 10 [msec] continuously	150 msec	No MIL "Special
			not updated for a calibratable number of counts consecutively.		Battery Voltage	> 10.2 [V]		C"
			consecutively.		Battery Voltage The TCM has completed the read operation of its non-volatile	<= 32.0 [V]		
					memory	(all 4 criteria for 2 [sec] continuously)		
					Diagnostic Service Request to Disable Normal Communication	= NOT PRESENT		
					U0140 (Lost Communication with Body Control Module)	= NOT DETECTED		
Ignition Switch Run/Start Position Circuit	P2534	Ignition Switch Run/Start Position Circuit Low	Ignition Voltage	< 9 [V]	Battery Voltage	>= 9 [V]	20 sec	1
Circuit		Circuit Low			The TCM is not operating out of a service mode			
					The TCM has completed the read operation of its non-volatile memory			
					CAN Based Engine Controller Run Crank Terminal Status	= Active		
					CAN Based Engine Running Signal	= TRUE		
					U0073 (CAN Bus-OFF)	= NOT DETECTED		
					U0100 (Lost Communication with ECM/PCM "A")	= NOT DETECTED		
					BUS OFF State from CAN controller	= Not Received		
					Receiving ECM CAN frame	= TRUE		
Ignition Switch Run/Start Position Circuit	P2535	Ignition Switch Run/Start Position Circuit High	Ignition Voltage	> 9 [V]	Battery Voltage	>= 9 [V]	3 sec	1
					The TCM is not operating out of a service mode			
					The TCM has completed the read operation of its non-volatile memory			
					CAN Based Engine Controller Run Crank Terminal Status	= Inactive		
					CAN Based Engine Running Signal	= FALSE		
					U0073 (CAN Bus-OFF)	= NOT DETECTED		
					U0100 (Lost Communication with ECM/PCM "A")	= NOT DETECTED		
					BUS OFF State from CAN controller	= Not Received		

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description					Required	Illum.
					Receiving ECM CAN frame	= TRUE		
Pressure Control Solenoid "D" Control Circuit (SL3 Solenoid)	P2716	Pressure Control Solenoid "D" Electrical	sum_ie (*)	> 60000 [mA]	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously)	1 to 3 sec cumulatively	1
	 (*) The first algorithm checks the cumulative sum of the difference of the linear solenoid feedback current and commanded current. This sum, named "sum_ie", will be updated on every clock cycle of the microprocessor (10 msec). If the value of the sum becomes greater than a calibrated threshold, a malfunction will be confirmed. ie: Difference of "commanded current" and "feedback current" ie added to "sum_ie" every 10 msec sum_ie is cleared if at least one of the following conditions are satisfied 1) Enable conditions are not satisfied 2) -50mA = < ie = < 50mA" 3) Sign of ie is changed 		Battery Voltage Linear Solenoid Feedback current Solenoid Cut Condition (*Note 3) P2720 (Pressure Control Solenoid *D* Control Circuit Low) P2721 (Pressure Control Solenoid *D* Control Circuit High) Emergency Mode (*4)	> 11 [V] for [> 500 msec] < 1358 [mA] = NOT ACTIVE = NOT DETECTED = NOT DETECTED = NOT ACTIVE				
			(*) The second algorithm checks the absolute value of the difference of the linear solenoid feedback current and commanded current over time. If the absolute value of the difference of the linear solenoid feedback current and commanded current exceeds a calibrated threshold for a calibrated period of time continuously, a malfunction will be detected.	> 50 [mA]	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory Battery Voltage Linear Solenoid Feedback current Solenoid Cut Condition (*Note 3) P2720 (Pressure Control Solenoid *D* Control Circuit Low) P2721 (Pressure Control Solenoid *D* Control Circuit High) Emergency Mode (*4)	 > 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously) > 11 [V] for [> 500 msec] < 1358 [mA] = NOT ACTIVE = NOT DETECTED = NOT DETECTED = NOT DETECTED = NOT ACTIVE 	2 sec	1
Pressure Control Solenoid "D" Control Circuit (SL3 Solenoid)	P2720	Pressure Control Solenoid "D" Control Circuit Low	ie : Absolute value of ie ie: Difference between "commanded current" and "feedback current" Linear Solenoid Feedback Current	< 20mA	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory Solenoid Cut Condition ('Note 3)	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously) = NOT ACTIVE	500 msec	1

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description		1		1	Required	Illum.
					P2721 (Pressure Control Solenoid "D" Control Circuit High)	= NOT DETECTED for [1 sec]		
Pressure Control Solenoid "D" Control Circuit (SL3 Solenoid)	P2721	Pressure Control Solenoid "D" Control Circuit High	Linear Solenoid Feedback Current	>= 1358mA	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously)	500 msec	1
					P2720 (Pressure Control Solenoid "D" Control Circuit Low)	= NOT DETECTED for [1 sec]		
ressure Control Solenoid "E" P2725 ontrol Circuit (SL4 Solenoid)	Pressure Control Solenoid *E* Electrical	sum_ie (*)	> 60000 [mA]	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously)	1 to 3 sec cumulatively	1	
			(*) The first algorithm checks the cumulative		Battery Voltage	> 11 [V] for [> 500 msec]		
			sum of the difference of the linear solenoid feedback current and commanded current. This		Linear Solenoid Feedback current	< 1358 [mA]		
			sum, named "sum_ie", will be updated on every clock cycle of the microprocessor (10 msec). If	ry	Solenoid Cut Condition (*Note 3)	= NOT ACTIVE		
		the value of the sum becomes greater than a		P2729 (Pressure Control Solenoid "E" Control Circuit Low)	= NOT DETECTED			
		calibrated threshold, a malfunction will be confirmed. P2730 (Pressure Control Solenoid "E" Control Circuit High) = NOT DETECTED						
					Emergency Mode (*4)	= NOT ACTIVE		
			 ie: Difference of "commanded current" and "feedback current" ie added to "sum_ie" every 10 msec sum_ie is cleared if at least one of the following conditions are satisfied 1) Enable conditions are not satisfied 2) -50mA =< ie =< 50mA" 3) Sign of ie is changed 					
			OR					1
			 (*) The second algorithm checks the absolute value of the difference of the linear solenoid feedback current and commanded current over time. If the absolute value of the difference of the linear solenoid feedback current and commanded current exceeds a calibrated threshold for a calibrated period of time continuously, a malfunction will be detected. 	> 50 [mA]	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory Battery Voltage Linear Solenoid Feedback current Solenoid Cut Condition (*Note 3) P2729 (Pressure Control Solenoid "E" Control Circuit Low) P2730 (Pressure Control Solenoid "E" Control Circuit High) Emergency Mode (*4)	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously) > 11 [V] for [> 500 msec] < 1358 [mA] = NOT ACTIVE = NOT DETECTED = NOT DETECTED = NOT DETECTED = NOT ACTIVE	2 sec	1
			ie : Absolute value of ie ie: Difference between "commanded current" and "feedback current"					

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description					Required	Illum.
Pressure Control Solenoid "E" Control Circuit (SL4 Solenoid)	P2729	Pressure Control Solenoid "E" Control Circuit Low	Linear Solenoid Feedback Current	< 20mA	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory Solenoid Cut Condition (*Note 3) P2730 (Pressure Control Solenoid "E" Control Circuit High)	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously) = NOT ACTIVE = NOT DETECTED for [1 sec]	500 msec	1
Pressure Control Solenoid "E" Control Circuit (SL4 Solenoid)	P2730	Pressure Control Solenoid "E" Control Circuit High	Linear Solenoid Feedback Current	>= 1358mA	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory P2729 (Pressure Control Solenoid "E" Control Circuit Low)	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously) = NOT DETECTED for [1 sec]	500 msec	1
Pressure Control Solenoid "F" Control Circuit (SL5 Solenoid)	P2734	Pressure Control Solenoid "F" Electrical	 (*) The first algorithm checks the cumulative sum of the difference of the linear solenoid feedback current and commanded current. This sum, named "sum_ie", will be updated on every clock cycle of the microprocessor (10 msec). If the value of the sum becomes greater than a calibrated threshold, a malfunction will be confirmed. ie: Difference of "commanded current" and "feedback current" 	> 60000 [mA]	Ignition Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory Battery Voltage Linear Solenoid Feedback current Solenoid Cut Condition (*Note 3) P2738 (Pressure Control Solenoid "F" Control Circuit Low) P2739 (Pressure Control Solenoid "F" Control Circuit High) Emergency Mode (*4)	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously) > 11 [V] for [> 500 msec] < 1358 [mA] = NOT ACTIVE = NOT DETECTED = NOT DETECTED = NOT DETECTED	1 to 3 sec cumulatively	1
			Teedoack current ie added to "sum_ie" every 10 msec sum_ie is cleared if at least one of the following conditions are satisfied 1) Enable conditions are not satisfied 2) -50mA =< ie =< 50mA" 3) Sign of ie is changed OR ie (*)	> 50 [mA]	Ignition Voltage	> 9000 [mV] for 10 [msec] continuously	2 sec	1
			(*) The second algorithm checks the absolute value of the difference of the linear solenoid feedback current and commanded current over time. If the absolute value of the difference of the linear solenoid feedback current and commanded current exceeds a calibrated threshold for a calibrated period of time continuously, a malfunction will be detected.		Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory Battery Voltage Linear Solenoid Feedback current Solenoid Cut Condition (*Note 3) P2738 (Pressure Control Solenoid *F* Control Circuit Low) P2739 (Pressure Control Solenoid *F* Control Circuit High)	> 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously) > 11 [V] for [> 500 msec] < 1358 [mA] = NOT ACTIVE = NOT DETECTED = NOT DETECTED		

Component / System	Fault Code	Monitor Strategy / Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
System	Code	Description			Emergency Mode (*4)	= NOT ACTIVE	Required	
			ie : Absolute value of ie ie: Difference between "commanded current" and "feedback current"		Energency wode (4)			
Pressure Control Solenoid "F" Control Circuit (SL5 Solenoid)	P2738	Pressure Control Solenoid "F" Control Circuit Low		< 20mA	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory Solenoid Cut Condition (*Note 3) P2739 (Pressure Control Solenoid "F" Control Circuit High)	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously) = NOT ACTIVE = NOT DETECTED for [1 sec]	500 msec	1
Pressure Control Solenoid "F" Control Circuit (SL5 Solenoid)	P2739	Pressure Control Solenoid "F" Control Circuit High	Linear Solenoid Feedback Current	>= 1358mA	Ignition Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory P2738 (Pressure Control Solenoid "F" Control Circuit Low)	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously) = NOT DETECTED for [1 sec]	500 msec	1
Torque Converter Clutch Pressure Control Solenoid Control Circuit (SLU Solenoid)	P2761	Torque Converter Clutch Pressure Control Solenoid Control Circuit/Open	 sum_ie (*) (*) The first algorithm checks the cumulative sum of the difference of the linear solenoid feedback current and commanded current. This sum, named "sum_ie", will be updated on every clock cycle of the microprocessor (10 msec). If the value of the sum becomes greater than a calibrated threshold, a malfunction will be confirmed. ie: Difference of "commanded current" and "feedback current" ie added to "sum_ie" every 10 msec sum_ie is cleared if at least one of the following conditions are satisfied 1) Enable conditions are not satisfied 2) -50mA =< ie << 50mA 3) Sign of ie is changed 	> 60000 [mA]	Ignition Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory Battery Voltage Linear Solenoid Feedback current Solenoid Cut Condition (*Note 3) P2764 (Torque Converter Clutch Pressure Control Solenoid Control Circuit Low) P2763 (Torque Converter Clutch Pressure Control Solenoid Control Circuit High) Emergency Mode (*4)	 > 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously) > 11 [V] for [> 500 msec] < 1358 [mA] = NOT ACTIVE = NOT DETECTED = NOT DETECTED = NOT ACTIVE 	1 to 3 sec cumulatively	1
			OR ie (*) (*) The second algorithm checks the absolute	> 50 [mA]	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory Battery Voltage	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously) > 11 [V] for [> 500 msec]	2 sec	1

	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
Code	Description					Required	Illum.
		feedback current and commanded current over		Linear Solenoid Feedback current	< 1358 [mA]		
		time. If the absolute value of the difference of		Solenoid Cut Condition (*Note 3)	= NOT ACTIVE		
		commanded current exceeds a calibrated		P2764 (Torque Converter Clutch Pressure Control Solenoid Control Circuit Low)	= NOT DETECTED		
		continuously, a malfunction will be detected.		P2763 (Torque Converter Clutch Pressure Control Solenoid Control Circuit High)	= NOT DETECTED		
				Emergency Mode (*4)	= NOT ACTIVE		
		ie : Absolute value of ie					
		ie: Difference between "commanded current" and "feedback current"					
P2763	Torque Converter Clutch Pressure Control Solenoid Control Circuit High	Linear Solenoid Feedback Current	>= 1358mA	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V]	500 msec	1
				memory P2764 /Torque Converter Clutch Pressure Control Solepoid			
				Control Circuit Low)	= NOT DETECTED for [1 sec]		
P2764	Torque Converter Clutch Pressure Control Solenoid Control Circuit Low	Linear Solenoid Feedback Current	< 20mA	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory	> 10.2 [V] <= 32.0 [V]	500 msec	1
				P2763 (Torque Converter Clutch Pressure Control Solenoid	= NOT DETECTED for [1 sec]		
P2769	Torque Converter Clutch Circuit Low	Comparison of SL solenoid Commanded State to Actual State (*) The TCM software does not directly determine the Actual State of the solenoid. This is done by the solenoid driver hardware. The	Actual State is "OFF" when Commanded State is "ON"	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously)	500 msec	2
		software just reads the state as ON or OFF. The solenoid driver determines the state is ON at Battery Voltage - 1 [V]		SL Solenoid Command Time elapsed since last solenoid state change	= ON > 10 msec		
P2770	Torque Converter Clutch Circuit High	to Actual State (*) The TCM software does not directly	Commanded State is "OFF"	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory	> 10.2 [V] <= 32.0 [V]	500 msec	2
		is done by the solenoid driver hardware. The software just reads the state as ON or OFF.		SL Solenoid Command	= OFF		
		at Battery Voltage - 1 [V]		Time elapsed since last solenoid state change	> 10 msec		
U0073	CAN Bus-OFF	Bus Off malfunction is received from the CAN controller	11 times continuously	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously)	10 sec	1
	P2763 P2764 P2769 P2770	P2763 Torque Converter Clutch Pressure Control Solenoid Control Circuit High P2764 Torque Converter Clutch Pressure Control Solenoid Control Circuit Low P2769 Torque Converter Clutch Circuit Low P2770 Torque Converter Clutch Circuit High	P2763 Torque Converter Clutch Pressure Control Solenoid Control Circuit High Linear Solenoid Feedback Current P2764 Torque Converter Clutch Pressure Control Solenoid Control Circuit High Linear Solenoid Feedback Current P2769 Torque Converter Clutch Pressure Control Solenoid Control Circuit High Linear Solenoid Feedback Current P2769 Torque Converter Clutch Pressure Control Solenoid Control Circuit High Linear Solenoid Feedback Current P2769 Torque Converter Clutch Circuit High Linear Solenoid Feedback Current P2769 Torque Converter Clutch Circuit Low Comparison of SL solenoid Commanded State to Actual State (*) The TCM software does not directly determine the Actual State as ON or OFF. The solenoid driven radware. The software just reads the state as ON or OFF. The solenoid driven radware. The software just reads the state as ON or OFF. The solenoid driven radware. The software just reads the state of the solenoid. This is done by the solenoid Commanded State to Actual State (*) The TCM software does not directly determine the Actual State of the solenoid. This is done by the solenoid driven radware. The software just reads the state as ON or OFF. The solenoid driven radware. The software just reads the state is ON or OFF. The solenoid driven radware. The software just reads the state is ON or OFF. The solenoid driven radware. The software just reads the state is ON or OFF. The solenoid driven radware. The software just reads the state is ON or OFF. The solenoid driven radware. The software just reads the state as ON or OFF.	P2764 Torque Converter Clutch Pressure Control Solenoid Control Circuit Low Linear Solenoid Feedback current to Actual State is "OFF" when Control Solenoid Control Circuit Low >= 1358mA P2763 Torque Converter Clutch Pressure Control Solenoid Control Circuit Low Linear Solenoid Feedback Current and "feedback Current" >= 1358mA P2764 Torque Converter Clutch Pressure Control Solenoid Control Circuit Low Linear Solenoid Feedback Current <= 20mA	P2760 Unser Sciencid Feedback current Selencid Current and commanded current or inserts analytic manual current and freedback current Selected Current Current Pressure Control Solenoid Control Circuit High P2760 Torque Converter Clutch Pressure Linear Sciencid Feedback Current Sel 158mA ghtten Voltage P2764 Torque Converter Clutch Pressure Linear Sciencid Feedback Current Sel 158mA ghtten Voltage P2764 Torque Converter Clutch Pressure Linear Sciencid Feedback Current Sel 158mA ghtten Voltage P2764 Torque Converter Clutch Pressure Linear Sciencid Feedback Current Sel 158mA ghtten Voltage P2769 Torque Converter Clutch Pressure Linear Sciencid Commanded State Attual State is "OPF" when Control Sciencid Commanded State is "OPF" when Control Sciencid Pressure Control	P2761 Comple Converter Cluich Pressure Control Second Current and Preschade Current Current Second Current Cluice Pressure Current Second Current Current Second Current Cluice Pressure Current Second Current Current Current Second Current	P276 Forgue Converter Clubb Pressue Control Soleroid Internet due of a subtrade control bit large value of a subtrade therein of a subtrade control bit large value of a subtrade therein of a subtrade control bit large value of a subtrade therein of a subtrade control bit large value of a subtrade therein of a subtrade control bit large value of a subtrade therein of a subtrade value of a bit large value of a subtrade therein of a subtrade value of a bit large value of

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description					Required	Illum.
Engine Control Module (ECM)	U0100	Lost Communication with ECM/PCM	CAN frame: "PTEI Engine Torque Status"	= NOT RECEIVED	Ignition Voltage	> 9000 [mV] for 5 sec continuously	4 sec	1
					Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile	> 9000 [mV] > 10.2 [V] <= 32.0 [V]		
					memory	(all 4 criteria for 5 [sec] continuously)		
					U0073 (CAN Bus-OFF)	= NOT DETECTED		
					Diagnostic Service Request to Disable Normal Communication	= NOT PRESENT		
Anti-Lock Brake System (ABS) Module	U0121	Lost Communication with Anti-Lock Brake System (ABS) Control Module	CAN frame: "PPEI Chassis General Status 1"	= NOT RECEIVED	Ignition Voltage	> 9000 [mV] for 5 sec continuously	4 sec	No MIL "Special
					Ignition Voltage	> 9000 [mV]		C"
					Battery Voltage	> 10.2 [V]		
					Battery Voltage The TCM has completed the read operation of its non-volatile	<= 32.0 [V]		
					memory	(all 4 criteria for 5 [sec] continuously)		
					U0073 (CAN Bus-OFF)	= NOT DETECTED		
					Diagnostic Service Request to Disable Normal Communication	= NOT PRESENT		
Body Control Module (BCM)	U0140	Lost Communication with Body Control		= NOT RECEIVED	Ignition Voltage	> 9000 [mV] for 5 sec continuously	4 sec	No MIL
		Module	"PPEI_Platform_Trans_Requests"		Ignition Voltage	> 9000 [mV]		"Special
					Battery Voltage	> 10.2 [V]		Ŭ
					Battery Voltage The TCM has completed the read operation of its non-volatile	<= 32.0 [V]		
					memory	(all 4 criteria for 5 [sec] continuously)		
					U0073 (CAN Bus-OFF)	= NOT DETECTED		
					Diagnostic Service Request to Disable Normal Communication	= NOT PRESENT		

				ATF Tem	perature		ĺ
			< -20 degC	>= -20 degC > -10 degC	>= -10 degC < 20 degC	>= 20 degC	
(*1)	T_GarageFin	Delay Time after Garage Shift Control	50000	8000	2000	1000	[msec]
	T_ShiftFin	Delay Time after Shifting Control	50000	2000	1000	500	[msec]
	T_C1ctrlFin	Delay Time after C1 OFF control	8000	8000	2000	1000	[msec]
	T_C3ctrlFin	Delay Time after C3 OFF control	8000	8000	2000	1000	[msec]
	tmr_inh_GE	Delay Time after Gear Hold function has been activated	50000	2000	1000	500	[msec]

			ATF Ten	nperature	1
			< 40 degC	>= 40 degC	1
(*2)	Time_SwOFFfailw	All Window conditions must be met for the following time, continuously	4000	2000	[msec]
	Time_SwONfailw	All Window conditions must be met for the following time, continuously	4000	2000	[msec]
	Time_SwDNFin	Delay Time after shifting to P, R, or N position	7000	3000	[msec]

(*3)	otcal_map	Calibrated threshold for the calculated heat load sum. Value is determined
		through linear interpolation of the initial ATF Temperature at Power On

(*4)

 Emergency Mode
 Indicates that a serious malfunction has occurred and the transmission has stopped operating normally. In order to allow continued driving, the transmission will default to a safe operational state which is designed to prevent damage to the powertrain and vehicle occupants. As this condition will affect emissions, the MIL will always be illuminated when emergency mode is active. Also referred to as a failure induced "Limp home" or "Limp in" mode by some manufacturers.

The following tables lists all malfunctions in which an Emergency Mode is entered upon their detection.

DTC	Monitor Description	Emergency Mode
		(^)
P0563	System Voltage High	3
P0601	Internal Control Module Memory Checksum Error	3
P0602	Control Module Programming Error	3
P0604	Internal Control Module Random Access Memory (RAM) Error	3
P0717	Input/Turbine Speed Sensor "A" Circuit No Signal	3
P0722	Output Speed Sensor Circuit No Signal	2
P0729	Gear 6 Incorrect Ratio	2
P0731	Gear 1 Incorrect Ratio	2
P0732	Gear 2 Incorrect Ratio	2
P0733	Gear 3 Incorrect Ratio	2

	P0734	Gear 4 Incorrect Ratio	2
	P0735	Gear 5 Incorrect Ratio	2
	P0748	Pressure Control Solenoid "A" Electrical	1
Γ	P076F	Gear 7 Incorrect Ratio	2
Γ	P0776	Pressure Control Solenoid "B" Stuck OFF	2
Γ	P0777	Pressure Control Solenoid "B" Stuck ON	2
	P0778	Pressure Control Solenoid "B" Electrical	1
	P077C	Output Speed Sensor Circuit High	3
	P077D	Output Speed Sensor Circuit Low	3
	P0798	Pressure Control Solenoid "C" Electrical	1
ſ	P07BF	Input/Turbine Speed Sensor "A" Circuit High	3
ſ	P07C0	Input/Turbine Speed Sensor "A" Circuit Low	3
	P07D9	Gear 8 Incorrect Ratio	2
	P0962	Pressure Control Solenoid "A" Control Circuit Low	1
	P0963	Pressure Control Solenoid "A" Control Circuit High	1
ſ	P0966	Pressure Control Solenoid "B" Control Circuit Low	1
	P0967	Pressure Control Solenoid "B" Control Circuit High	1
ſ	P0970	Pressure Control Solenoid "C" Control Circuit Low	1
ſ	P0971	Pressure Control Solenoid "C" Control Circuit High	1
ſ	P0973	Shift Solenoid "A" Control Circuit Low	3
ſ	P0974	Shift Solenoid "A" Control Circuit High	3
ſ	P170A	Unusual Shifting - SL1 MAX Pressure Failure	2
Γ	P170B	Unusual Shifting - SL2 MAX Pressure Failure	2
	P170C	Unusual Shifting - SL3 MAX Pressure Failure	2
Γ	P170D	Unusual Shifting - SL4 MAX Pressure Failure	2
	P170E	Unusual Shifting - SL5 MAX Pressure Failure	2
	P2534	Ignition Switch Run/Start Position Circuit Low	3
Γ	P2716	Pressure Control Solenoid "D" Electrical	1
	P2720	Pressure Control Solenoid "D" Control Circuit Low	1
ſ	P2721	Pressure Control Solenoid "D" Control Circuit High	1
ſ	P2725	Pressure Control Solenoid "E" Electrical	1
ſ	P2729	Pressure Control Solenoid "E" Control Circuit Low	1
ſ	P2730	Pressure Control Solenoid "E" Control Circuit High	1
ľ	P2734	Pressure Control Solenoid "F" Electrical	1
ľ	P2738	Pressure Control Solenoid "F" Control Circuit Low	1
ſ	P2739	Pressure Control Solenoid "F" Control Circuit High	1

14 OBDG06B TCM Supporting Tables (8Spd)

P2761	Torque Converter Clutch Pressure Control Solenoid Control Circuit/Open	3
P2763	Torque Converter Clutch Pressure Control Solenoid Control Circuit High	3
P2764	Torque Converter Clutch Pressure Control Solenoid Control Circuit Low	3
U0073	CAN Bus-OFF	3
U0100	Lost Communication with ECM/PCM "A"	3

(*) Emergency Mode	Final Gear State
1	3rd or 6th Gear (one might not be possible due to failed component)
2	4th Gear
3	3rd Gear

*5	PLUP_CLOSE_FAIL	= Minimum of the follo	wing values:			[gf/cm^2]	
		1 (6290				
			= Maximum of the fo				
		2	1 2	P_RelayV 0.8 * 0.576 * P		-	
			2	0.0 0.370 F	_Secle + 000	1	
			LF3	LFX			
		(*) P_RelayV_Keep	900	750			
		L		·			
					ATF Ter	mperature	
					< 20 degC	>= 20 degC	
*6	T_SLUFull	Time since SLU Press	ure met PLUP_CLO	SE_FAIL (*5) criteria	10	3	[sec]
-				SE_FAIL (*5) criteria	10	3	[sec]
*6 *7	T_SLUFull I_gear	Time since SLU Press 1st Gear Ratio at RAN		SE_FAIL (*5) criteria	10	3	[sec]
-			GE D		10	3	[sec]
*7	I_gear	1st Gear Ratio at RAN	GE D t Speed x I_gear (*9))	10	3	[sec]

						OilTemp [degC]		
				~-20	-19 ~ -1	0~19	20-64	65 ~
*10			< -10	5000	3000	2000	1000	800
			-10 ~ 40	5000	3000	3000	1900	1000
	Time_failA_up1 [msec] Ir	nput Torque [Nm]	40 ~ 100	5000	3000	1000	800	600
			100 ~ 250	5000	3000	1000	500	300

		> 250	5000	3000	1000	500	300
		< -10	5000	1400	1200	1000	800
		-10 ~ 40	5000	1600	1400	1200	1100
Time_failA_down1 [msec]	Input Torque [Nm]	40 ~ 100	5000	1600	1400	1200	1100
		100 ~ 250	5000	1600	1400	1200	1100
		> 250	5000	1600	1400	1200	1000
		NO_S0 (*)	5000	1600	1400	1200	1000
		NO_S1	5000	1600	1400	1200	1000
Fime_failA_down2 [msec]	Output Speed [rpm]	NO_S2	5000	1600	1400	1200	1000
		NO_S3	5000	1400	1200	1000	800
		NO_S4	5000	1400	1200	1000	800
	Output Speed [rpm]	NO_S0 (*)	3000	2800	2500	2200	2000
		NO_S1	3000	2800	2500	2200	2000
Time_failA_down2 C [msec]		NO_S2	3000	2800	2500	2200	2000
		NO_S3	3000	2800	2500	2200	2000
		NO_S4	3000	2800	2500	2200	2000
Time54a [msec]	msec	-	5000	500	200	100	100
Time857a [msec]	msec	-	5000	500	200	100	100
Time423a [msec]	msec	-	5000	500	200	100	100
Time324 [msec]	msec	-	5000	500	200	100	100
Time fail B [msec]	msec	-	5000	2000	500	500	500
Time324b [msec]	msec	-	2000	2000	1000	1000	1000
Time423b [msec]	msec	-	2000	2000	1000	1000	1000
Time857b [msec]	msec	-	2000	2000	1000	1000	1000
Time54b [msec]	msec	-	2000	2000	1000	1000	1000

(*) During Upshifts [rpm]

1	NO_S0	NO_S1	NO_S2	NO_S3	NO_S4
	1200	2400	3600	4800	6000

During Downshifts [rpm]

NO_S0	NO_S1	NO_S2	NO_S3	NO_S4
750	1500	2500	3750	5250

During the following Up-shifts									
*11	flare_fail_up [rpm]	6-7	6-8	3-4	3-5	4-5	7-8	All others	remarks
		300	300	500	500	500	300	500	for LFX
		500	500	1000	1000	1000	500	1000	for LF3

*12	Time_PSLdrain [msec]	LF3	LFX
		1500	500

*13	Difference_Temp_Map	Engine Off Time [hrs]	0	1	2	3	4	5	6	7+
		Temp Difference [degC]	43	43	43	43	43	43	43	43

*14	OT_Sw_det [degC]	LF3	LFX
		-10	40

Notes

vehicle electrical charging sys confirmed. Additionally, the To functioning normally. Below th the effect a low voltage conditi	1 CARB has given approval for the diagnostic algorithm P0592 (System Voltage Low Supply 2) (*Note 1) to be detected and confirmed by the vehicle electrical charging system. The TCM treats this as a Type C diagnostic and stores a service DTC when this malfunction is confirmed. Additionally, the TCM has an algorithm to detect when the System Voltage is critically low (< 9 [V]), and is no longer capable of functioning normally. Below this critically low voltage threshold, it is necessary to disable some diagnostics based on this algorithm, due to the effect a low voltage condition has on the ability of the TCM to control the transmission. Therefore, the TCM relies on the vehicle charging system to illuminate the MIL and alert the driver to this low voltage condition.				
are diagnosed by the ECM, wh	Invalid CAN signals, which are transmitted by the ECM. The components from which these signals are derived hich will store an emissions related DTC code, and illuminate the MIL, as necessary when a malfunction occurs. Therefore no DTCs are stored by the TCM when they are detected.				
Note 3 Solenoid Cut Condition	When an ISO26262 Functional Safety related malfunction occurs, the TCM performs a Solenoid Cut, which cuts all current to the solenoids as a safe state reaction, putting the transmission into a default state (3rd or 7th gear, depending on vehicle speed).				
Note 4 Quick Stop Detection Flag	This flag is intended to prevent misdetection of any malfunctions which could be caused by air in the ATF pick-up due to high gravitational forces. This flag will be set to TRUE if the conditions necessary for Quick Stop Detection are met. It is sufficient to say this flag will only become TRUE if the driver is braking heavily and the vehicle is rapidly decelerating. At all other times the value of this flag will be FALSE.				