COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
Transmission Fluid Temperature Sensor Circuit Range/Performance	P0711	This test detects performance of the transmission fluid temperature sensor by comparing changes in temperature from start up and between samples to calibration values.	For Case 1 (Stuck sensor after cold start-up) Start-up temperature change for a time AND Vehicle speed for a time	<= 2 deg. C >= 100 seconds >= 8 KPH >= 300 seconds.	All Cases No MIL-on DTCs for this drive cycle No Fault Pending DTCs for this drive cycle	P0716 P0717 P0721 P0722 P0742 P0716 P0717 P0721 P0722	Case 1: 75 seconds	B
			For Case 2 (Stuck sensor after warm start-up) Start-up temperature change for a time AND Vehicle speed for a time	<= 3 deg. C >= 100 seconds >= 8 KPH >= 300 seconds.	No Pass DTCs for this drive cycle No MIL-on DTC for this drive cycle OR No Fault Active DTC	P0711 P0711 P0711	Case 2: 75 seconds	
			For Case 3 (Noisy sensor) Change from previous temperature for	>= 20 deg. C 14 events in < 7 seconds.	Components powered AND Battery Voltage	> 9 V and < 18 V	Case 3: 7 seconds	
			For Case 4 (Doesn't warm up to at least 20 deg. C) Time Enabled Criteria met AND transmission fluid temperature Time Enabled Criteria is determined by a lookup table ranging from to	< 20 deg. C. 250 seconds when start-up temperature is >= 20 deg. C 2200 seconds when start-up temperature is <= -40 deg. C.	Engine Speed FOR Start-up transmission fluid temperature is available Transmission fluid temperature ECT is not defaulted	> 200 RPM and < 7500 RPM 5 seconds > -39 deg. C and < 149 deg. C	Case 4: Min. 250 seconds	
			For Case 5 (Reasonableness at start-up):		For Case 1 (Stuck sensor after cold start-up),		Case 5:	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			At start-up (with no abnormal powerdown condition),		Start-up transmission fluid temperature	> -40 deg. C and < 21 deg. C.	2 seconds	
			engine speed	> 500 RPM				
			AND					
			engine coolant temperature	> -39 deg. C and < 50 deg. C	TCC Slip	>= 120 RPM	250 ms	
			for a time	>= 2 seconds	for a time	>= 300 seconds		
			AND		engine coolant temperature	>= 70 deg. C		
					AND			
			((ABS(IAT-ECT)	<= 6 deg. C	engine coolant temperature change from start-up	>= 15 deg. C		
			AND					
			(ECT-TFT))	> 40 deg. C	For Case 2 (Stuck sensor after warm start-up),			
			OR					
			(ABS(IAT-ECT)	> 6 deg. C	Start-up transmission fluid temperature	> 115 deg. C and < 150 deg. C.		
			AND		TCC Slip	>= 120 RPM		
			(ECT-TFT)))	> 60 deg. C.	for a time	>= 300 seconds		
					engine coolant temperature	>= 70 deg. C		
					AND			
					engine coolant temperature change from start-up	>= 55 deg. C		
					For Case 4 (Doesn't warm up to at least 20 deg. C),			
					net engine torque	>= 150 Nm and <= 1492 Nm		
					vehicle speed	>= 22 KPH and <= 512 KPH		
					%throttle	>= 10.5% and <= 100%		
					engine speed	>= 500 RPM and <= 6500 RPM		
					engine coolant temperature	>= -39 deg. C and <= 149 deg. C		
					For Case 5 (Reasonableness at start-up):			
					Intake Air Temperature is not defaulted			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
Transmission Fluid Temperature Sensor Circuit Low Input	P0712	Out of range low.	transmission fluid temperature for a time	>=150 deg. C > 2.5 seconds.	No MIL-on DTCs for this drive cycle Components powered AND Battery Voltage Engine Speed for	P0711 P0712 P0713 > 9 V and < 18 V > 200 RPM and < 7500 RPM 5 seconds	2.5 seconds 250 ms	B
Transmission Fluid Temperature Sensor Circuit High Input	P0713	Out of range high.	transmission fluid temperature for a time	<= -45 deg. C > 2.5 seconds	No MIL-on DTCs for this drive cycle Components powered AND Battery Voltage Engine Speed for IF Engine run time THEN Engine Coolant Temperature AND not defaulted for a time	P0711 P0712 P0713 > 9 V and < 18 V > 200 RPM and < 7500 RPM 5 seconds <= 600 seconds must be > 20 deg. C >= 20 seconds.	2.5 seconds 250 ms	B
Speed Sensors								
Input/Turbine Speed Sensor Circuit Range/Performance	P0716	This test detects large changes in Input Speed and noisy Input Speed by comparing to calibration values.	For Case 1: (Unrealistically large changes in input speed) Change of Input Speed between samples for	>= 800 RPM >= 0.15 seconds	All cases No MIL-on DTCs for this drive cycle	P0716 P0717 P0721	For Case 1: 0.15 s For Case 2: 2 s	A

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			For Case 2: (Noisy Input Speed)			P0722	For Case 3:	
			For sample size 80				1 s	
			IF the change in Input Speed <= -800 RPM		No Fault Pending DTCs for this drive cycle.	P0721 P0722	25 ms	
			THEN the Low Counter is incremented.					
			IF the change in Input Speed >= 800 RPM		Shifting complete			
			THEN the High Counter is incremented.					
					For Case 1 (Unrealistically large changes in input speed) and Case 2 (Noisy Input Speed),			
			This test fails if both the Low Counter and the High Counter >= 5		Input Speed > 200 RPM			
			OR		for >= 0.5 seconds			
			High Counter >= 5					
					For Case 3 (Wires to speed sensors swapped),			
			For Case 3: (Wires to speed sensors swapped)		Input speed > 100 RPM			
			Increment counter when range attained and range commanded are neutral for a time <= 3.5 seconds		Engine speed > 100 RPM			
			AND					
			when ratio of engine speed and input speed >= 3		Hydraulic system pressurized			
			Arm test when counter >=20		Enables met			
			OR		AND			
			when time > 3.5 seconds		No MIL-on DTCs P0716			
					P0717			
			Malfunction is reported when, for a time > 0.5 seconds		for a time >= 0.2 seconds			
			the range commanded is NOT neutral					
			AND					
			the on-coming clutch control is complete					
			AND					
			input speed > 100 RPM					
			AND					
			engine speed > 100 RPM					

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
Input/Turbine Speed Sensor Circuit No Signal	P0717	This test detects unrealistically low value of input/turbine speed or unrealistically large changes in input/turbine speed.	For Case 1: (Unrealistically large change in input speed) Failure pending if change in transmission input speed For Case 2: (Unrealistically low value of input speed) Failure pending if transmission input speed This test fails if input speed AND output speed for a time	>= 800 RPM < 61 RPM < 61 RPM > 500 RPM > 1 second.	All Cases No MIL-on DTCs for this drive cycle Reverse-to-Neutral shift not in process Shifting complete Engine is running Range attained is not neutral Transmission fluid temperature For Case 2: (Unrealistically low input speed) No MIL-on DTCs for this drive cycle No Fault Pending DTCs Transmission output speed OR Transmission output speed AND Engine Speed	P0717 > -25 deg. C P0729 P0731 P0732 P0733 P0734 P0735 P0736 P0721 P0722 P0721 P0722 >= 150 RPM >= 150 RPM >= 400 RPM	1 second 25 ms	A
Output Speed Sensor Circuit Range/Performance	P0721	This test detects a noisy output speed sensor or circuit by detecting large changes in output	For Case 1: (Unrealistically large change in output speed)		No MIL-on DTCs for this drive cycle	P0716	For Case 1: 0.15 s	A

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
		speed.	Change in output speed for a time For Case 2: (Noisy output speed) For sample size IF the change in output speed THEN the Low Counter is incremented. IF the change in output speed THEN the High Counter is incremented. Test fails if both the Low Counter and the High Counter OR the Low Counter OR the High Counter	>= 500 RPM >= 0.15 seconds 80 <= -500 RPM >= 500 RPM >= 5 >= 5 >= 5	 No Fault Pending DTCs for this drive cycle Output Speed for a time Shift complete AND range attained	P0717 P0721 P0722 P0716 P0717 > 200 RPM >= 0.5 seconds NOT neutral	For Case 2: 2 seconds 25 ms	
Output Speed Sensor Circuit No Signal	P0722	This test detects unrealistically low value of output speed or unrealistically large change in output speed.	For Case 1: (Unrealistically large change in output speed) Failure pending if change in output speed Failure sets if range attained is Neutral. For Case 2: (Unrealistically low value of output speed) Failure pending if output speed Failure sets if not monitoring for low speed neutral and output speed AND range for a time Failure sets if not monitoring for low speed neutral and output speed AND	 >= 600 RPM < 61 RPM < 61 RPM 3rd, 4th, 5th, or 6th > 1 second < 61 RPM	All Cases No MIL-on DTCs for this drive cycle. For Case 1: (Unrealistically large change in output speed) Test enabled when output speed for a time Test disabled when output speed for a time For Case 2: (Unrealistically low value of output speed) No MIL-on DTCs for this drive cycle.	P0721 >= 600 RPM >= 1 seconds <= 600 RPM > 1 seconds P0731 P0732 P0733	1 second 25 ms	A

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			((net engine torque OR net engine torque) OR (turbine speed AND range)) for a time	< -100 Nm > 100 Nm > 1500 RPM 2nd >= 4 seconds.	 No Fault Pending DTCs for this drive cycle Engine is running Shift not in process Range attained is not Neutral Reverse to Neutral shift not in process Transmission fluid temperature Transmission input speed Not waiting for Manual Selector Valve to attain forward range PRNDL State	P0734 P0735 P0736 P0716 P0717 P0716, P0717 > -25 deg. C >= 1050 RPM NOT D4 NOT Transitional D4 NOT Transitional N		
Range Verifiication								
Gear 1 Incorrect Ratio	P0731	This test verifies transmission operating ratio while 1st range is commanded by comparing computed ratio to the commanded ratio.	Pending failure occurs when accumulated event timer Timer accumulates when transmission is in range AND output speed AND	>= 2 second forward or reverse >= 100 RPM	No MIL-on DTCs for this drive cycle.	P0877 P0878 P0721 P0722 P0716	2.25 seconds 25 ms	A

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			gear slip	> 100 RPM		P0717		
					No Fault Pending DTC for this drive cycle.	P0717		
			In response to pending failure, a diagnostic response range is commanded. During this command, this test fails if Abs(Converter Slip) for	>= 230 RPM > 10 samples.	No range switch response active			
					Hydraulic System Pressurized			
					Shift complete			
					Output speed >= 200 RPM			
					No hydraulic default condition present			
					Normal powertrain shutdown not in process			
					Normal powertrain initialization is complete			
Gear 2 Incorrect Ratio	P0732	This test verifies transmission operating ratio while 2nd range is commanded by comparing computed ratio to the commanded ratio.	Pending failure occurs when accumulated event timer	>= 2 second	No MIL-on DTCs for this drive cycle.	P0877	2.25 seconds 25 ms	A
			Timer accumulates when transmission is in range AND	forward or reverse		P0878		
			output speed AND	>= 100 RPM		P0721 P0722 P0716		
			gear slip	> 100 RPM		P0717		
					No Fault Pending DTC for this drive cycle.	P0717		
			In response to pending failure, a diagnostic response range is commanded. During this command, this test fails if Abs(Converter Slip) for	>= 230 RPM > 10 samples.	No range switch response active			
					Hydraulic System Pressurized			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Shift complete			
					Output speed >= 200 RPM			
					No hydraulic default condition present			
					Normal powertrain shutdown not in process			
					Normal powertrain initialization is complete			
Gear 3 Incorrect Ratio	P0733	This test verifies transmission operating ratio while 3rd range is commanded by comparing computed ratio to the commanded ratio.	Pending failure occurs when accumulated event timer Timer accumulates when transmission is in range AND output speed AND gear slip In response to pending failure, a diagnostic response range is commanded. During this command, this test fails if Abs(Converter Slip) for	>= 2 second forward or reverse >= 100 RPM > 100 RPM >= 230 RPM > 10 samples.	No MIL-on DTCs for this drive cycle. No Fault Pending DTC for this drive cycle. No range switch response active Hydraulic System Pressurized Shift complete Output speed >= 200 RPM No hydraulic default condition present Normal powertrain shutdown not in process	P0877 P0878 P0721 P0722 P0716 P0717 P0717	2.25 seconds 25 ms	A

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Normal powertrain initialization is complete			
Gear 4 Incorrect Ratio	P0734	This test verifies transmission operating ratio while 4th range is commanded by comparing computed ratio to the commanded ratio.	Pending failure occurs when accumulated event timer Timer accumulates when transmission is in range AND output speed AND gear slip	>= 2 second forward or reverse >= 100 RPM > 100 RPM	No MIL-on DTCs for this drive cycle.	P0877 P0878 P0721 P0722 P0716 P0717	2.25 seconds 25 ms	A
			In response to pending failure, a diagnostic response range is commanded. During this command, this test fails if Abs(Converter Slip) for	>= 230 RPM > 10 samples.	No Fault Pending DTC for this drive cycle.	P0717		
					No range switch response active			
					Hydraulic System Pressurized			
					Shift complete			
					Output speed	>= 200 RPM		
					No hydraulic default condition present			
					Normal powertrain shutdown not in process			
					Normal powertrain initialization is complete			
Gear 5 Incorrect Ratio	P0735	This test verifies transmission operating ratio while 5th range is commanded by comparing computed ratio to the commanded ratio.	Pending failure occurs when accumulated event timer Timer accumulates when transmission is in range AND output speed AND gear slip	>= 2 second forward or reverse >= 100 RPM > 100 RPM	No MIL-on DTCs for this drive cycle.	P0877 P0878 P0721 P0722 P0716 P0717	2.25 seconds 25 ms	A

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			In response to pending failure, a diagnostic response range is commanded. During this command, this test fails if Abs(Converter Slip) for	>= 230 RPM > 10 samples.	No Fault Pending DTC for this drive cycle. No range switch response active Hydraulic System Pressurized Shift complete Output speed No hydraulic default condition present Normal powertrain shutdown not in process Normal powertrain initialization is complete	P0717 >= 200 RPM		
Reverse Incorrect Ratio	P0736	This test verifies transmission range while reverse range is commanded by comparing computed ratio to the commanded ratio.	Accumulated event timer Timer accumulates when forward or reverse transmission range AND output speed AND gear slip	>= 2 seconds >= 100 RPM > 100 RPM	No MIL-on DTCs for this drive cycle. No Fault Pending DTC for this drive cycle. No range switch response active Hydraulic System Pressurized Shift complete	P0877 P0878 P0721 P0722 P0716 P0717 P0717	2 seconds 25 ms	A

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Output speed >= 200 RPM			
					No hydraulic default condition present			
					Normal powertrain shutdown not in process			
					Normal powertrain initialization is complete			
Gear 6 Incorrect Ratio	P0729	This test verifies transmission operating ratio while 6th range is commanded by comparing computed ratio to the commanded ratio.	Pending failure occurs when accumulated event timer Timer accumulates when transmission is in range AND output speed AND gear slip	>= 2 second forward or reverse >= 100 RPM > 100 RPM	No MIL-on DTCs for this drive cycle.	P0877 P0878 P0721 P0722 P0716 P0717	2.25 seconds 25 ms	A
			In response to pending failure, a diagnostic response range is commanded. During this command, this test fails if Abs(Converter Slip) for	>= 230 RPM > 10 samples.	No Fault Pending DTC for this drive cycle.	P0717		
					No range switch response active			
					Hydraulic System Pressurized			
					Shift complete			
					Output speed >= 200 RPM			
					No hydraulic default condition present			
					Normal powertrain shutdown not in process			
					Normal powertrain initialization is complete			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
Torque Converter Clutch								
Torque Converter Clutch Circuit Performance or Stuck Off	P0741	This test detects the torque converter being stuck off (unlocked).	TCC Slip >= 80 RPM for a time >= 15 seconds.		No MIL-on DTCs for this drive cycle.	P2761 P2763 P2764 P0721 P0722 P0716 P0717	15 s 100 ms	B
					No Fault Pending DTCs for this drive cycle.	P2761 P2763 P2764 P0721 P0722 P0716 P0717		
					Components powered AND			
					Battery Voltage	> 9 V and < 18 V		
					Engine Speed	> 200 RPM and < 7500 RPM		
					for	5 seconds		
					Must be in forward range			
					% Throttle	> 10 % and <= 90 %		
					Transmission fluid temperature	> 5 deg. C and < 130 deg. C		
					Time Since Range Change	>= 6 seconds		
					AND			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					TCC apply is complete TCC pressure >= 1000 kPa			
Torque Converter Clutch Circuit Stuck On	P0742	This test detects the torque converter being stuck on (locked).	Case 1: (High Torque condition) Set fault pending when throttle >= 70% AND net engine torque >= 275 Nm. Report malfunction when fault pending exists continuously for a time >= 2 seconds. Case 2: (High Acceleration condition) Set fault pending when output shaft acceleration >= 100 RPM/second Report malfunction when fault pending exists continuously for a time >= 5 seconds. Case 3: (Accel/Decel/Accel condition) Report malfunction when output acceleration event is followed by output deceleration event and followed by another output acceleration event. An output acceleration event occurs when output shaft acceleration >= 40 RPM/second for a time >= 4 seconds An output deceleration event occurs when output shaft acceleration is <=-40 RPM/second for a time >= 2.5 seconds.		No MIL-on DTCs for this drive cycle. No Fault Pending DTCs for this drive cycle. Components powered AND Battery Voltage > 9 V and < 18 V Engine Speed > 200 RPM and < 7500 RPM for 5 seconds	P2761 P2763 P2764 P0721 P0722 P0716 P0717 U0100 P2761 P2763 P2764 P0721 P0722 P0716 P0717 U0100	Case 1 2 s Case 2 5 s Case 3 10.5 s 100 ms	B

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Must be in forward range			
					TCC is off			
					TCC Slip	>=-20 RPM and <= 20 RPM		
					% Throttle	>= 25%		
					Net Engine Torque	>= 175 Nm		
					Engine speed	<= 3500 RPM		
					Input speed	<= 3500 RPM		
					Output speed	>= 100 RPM		

Pressure Switches								
Pressure Switch Solenoid 1 Circuit Low	P0842	This test compares the commanded valve position to the PS1 pressure switch feedback. (part of S1 valve integrity test)	Pending failure occurs when PS1 pressure switch indicates stroked for a time	> 0.08 seconds	S1 valve is destroked		100 ms 25 ms	A
			IF a main pressure dropout is suspected or detected, THEN time limit increases to times	0.125 seconds and 30 seconds, respectively	NOT Cold initialization unless transmission fluid temperature	> -25 deg. C		
					Shutdown is NOT in process			
			In response to the pending failure, S1 valve is retried by triggering S1 valve command to stroked and back to destroked. If PS1 pressure switch continues to indicate stroked, then one of three malfunction cases exists:					
			For Case 1 (electrical malfunction), SS1 Circuit Low reports failure, also.	P0793				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			For Case 2 (mechanical malfunction), Shift Solenoid 1 (SS1) Valve Performance – Stuck On reports failure, also.	P0752				
			For Case 3 (intermittent malfunction), SS1 valve retry attempted AND PS1 pressure switch continues to indicate stroked.	15 times				
Shift Solenoid 1 (SS1) Valve Performance – Stuck Off	P0751	This test compares the change of state of the valve command to the change of state of the PS1 pressure switch feedback. (part of the S1 valve timeout test)	S1 valve is commanded from destroked to stroked and the PS1 pressure switch indication remains destroked for a time WITH transmission fluid temperature (Time increases as temperature decreases with maximum time at transmission fluid temperature)	>= 5 seconds >= 0 deg. C 12 seconds <= -40 deg. C	S1 valve commanded from destroked to stroked.		5 seconds 25 ms	A
Shift Solenoid 1 (SS1) Valve Performance – Stuck On	P0752	This test compares the change of state of the valve command to the change of state of the PS1 pressure switch feedback. (part of the S1 valve timeout test).	S1 valve commanded from stroked to destroked and the PS1 pressure switch indication remains stroked for a time WITH transmission fluid temperature (Time increases as temperature decreases with maximum time at	> 6.6 seconds >= 0 deg. C. 11 seconds	S1 valve changes from stroked to destroked		6.6 seconds 25 ms	A

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			transmission fluid temperature)	<= -40 deg. C				
Pressure Switch Solenoid 1 Circuit High	P0843	This test compares the commanded valve position to the PS1 pressure switch feedback. (part of S1 valve integrity test)	Pending failure occurs when PS1 pressure switch indicates destroked for a time	> 0.07 seconds	S1 valve is stroked		70 ms	A
			IF a main pressure dropout is suspected or detected, then time limit increases to times	5 seconds and 30 seconds, respectively.)	NOT Cold initialization unless transmission fluid temperature	> -25 deg. C	25 ms	
			In response to the pending failure, S1 valve is retried by triggering S1 valve command to destroked and back to stroked. If the PS1 pressure switch continues to indicate destroked, then one of three malfunction cases exists.		Shutdown NOT in process			
			For Case 1 (electrical malfunction), SS1 Control Circuit Low reports failure, also.	P0793				
			For Case 2 (mechanical malfunction), Shift Solenoid 1 (SS1) Valve Performance – Stuck Off reports failure, also.	P0751				
			For Case 3 (intermittent malfunction), S1 valve retry attempted AND PS1 pressure switch continues to indicate destroked.	15 times				
Pressure Switch Solenoid 2 Circuit Low	P0847	This test compares the					40 ms	A

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
		commanded valve position to the PS2 pressure switch feedback (part of the S2 valve integrity test).	Pending failure occurs when PS2 pressure switch indicates stroked for a time	> 0.04004 seconds	S2 valve is destroked		25 ms	
			IF a main pressure dropout is suspected or detected, THEN time limit increases to times	0.04 seconds and 30 seconds, respectively.	NOT Cold initialization unless transmission fluid temperature	> -25 deg. C		
			In response to the pending failure, S2 valve is retried by triggering S2 valve command to stroked and back to destroked. If PS2 pressure switch continues to indicate stroked, then one of three malfunction cases exists.		Shutdown is NOT in process			
			For Case 1 (electrical malfunction), SS2 Control Circuit Low reports failure, also.	P0976				
			For Case 2 (mechanical malfunction), Shift Solenoid 2 Valve Performance – Stuck On reports failure, also.	P0757				
			For Case 3 (intermittent malfunction), S2 valve retry attempted AND PS2 pressure switch continues to indicate stroked.	2 times				
Shift Solenoid 2 Valve Performance – Stuck Off	P0756	This test compares the change of state of the valve command to the change of state of the PS2 pressure switch feedback (part of the S2 valve timeout test).	If the S2 valve is commanded from destroked to stroked and the PS2 pressure switch indication remains destroked for a time WITH transmission fluid temperature	>= 5 seconds >= 0 deg. C.	S2 valve commanded from destroked to stroked.		5 seconds 25 ms	A

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			(Time increases as temperature decreases with maximum time at transmission fluid temperature)	12 seconds <= -40 deg. C.				
Shift Solenoid 2 Valve Performance – Stuck On	P0757	This test compares the commanded valve position to the PS2 pressure switch feedback (part of the S2 valve timeout test).	S2 valve commanded from stroked to destroked and the PS2 pressure switch does not indicate destroked for a time WITH transmission fluid temperature (Time increases as temperature decreases with maximum time at transmission fluid temperature)	>= 6.4 seconds >= 0 deg. C. 15 seconds <= -40 deg. C.	S2 valve changes from stroked to destroked		6.4 seconds 25 ms	A
Pressure Switch Solenoid 2 Circuit High	P0848	This test compares the commanded valve position to the PS2 pressure switch feedback (part of the S2 valve integrity test).	Pending failure occurs when PS2 pressure switch indicates destroked for a time IF a main pressure dropout is suspected or detected, THEN time limit increases to times In response to the pending failure, S2 valve is retried by triggering S2 valve command to destroked and back to stroked. If PS2 pressure switch continues to indicate destroked, then one of three malfunction cases exists. For Case 1 (electrical malfunction), SS2 Control Circuit Low reports failure, also.	> 0.30 seconds 5 seconds and 30 seconds, respectively.) P0976	S2 valve is stroked NOT Cold initialization unless transmission fluid temperature Shutdown NOT in process	> -25 deg. C	300 ms 25 ms	A

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			For Case 2 (mechanical malfunction), 　Shift Solenoid 2 Valve Performance – Stuck Off reports failure. also.	P0756				
			For Case 3 (intermittent malfunction), 　　S2 valve retry attempted AND PS2 pressure switch continues to indicate destroked.	2 times				
Pressure Switch Solenoid 3 Circuit Low	P0872	This test compares the commanded valve position to the PS3 pressure switch feedback. (part of S3 valve integrity test)	Pending failure occurs when PS3 pressure switch indicates stroked for a time	> 0.0195 seconds	S3 valve is destroked		20 ms 25 ms	A
			IF a main pressure dropout is suspected or detected, THEN time limit increases to		NOT Cold initialization unless transmission fluid temperature	> -25 deg. C		
			In response to the pending failure, S3 valve is retried by triggering S3 valve command to stroked and back to destroked. If PS3 pressure switch continues to indicate stroked, then one of three malfunction cases exists.	0.125 seconds and 30 seconds, respectively	Shutdown is NOT in process			
			For Case 1 (electrical malfunction), 　SS3 Control Circuit Low reports failure, also.	P0979				
			For Case 2 (mechanical malfunction), 　Shift Solenoid 3 Valve Performance – Stuck On reports failure. also.	P0762				
			For Case 3 (intermittent malfunction), 　　S3 valve retry attempted	2 times				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			AND PS3 pressure switch continues to indicate stroked.					
Shift Solenoid 3 Valve Performance – Stuck Off	P0761	This test compares the change of state of the valve command to the change of state of the PS3 pressure switch feedback. (part of the S3 valve timeout test)	If the S3 valve is commanded from destroked to stroked and the PS3 pressure switch indication remains destroked for a time WITH transmission fluid temperature (Time increases as temperature decreases with maximum time at transmission fluid temperature)	>= 5 seconds >= 0 deg. C. 12 seconds <= -40 deg. C.	S3 valve commanded from destroked to stroked.		5 seconds 25 ms	A
Shift Solenoid 3 Valve Performance – Stuck On	P0762	This test compares the commanded valve position to the PS3 pressure switch feedback (part of the S3 valve timeout test).	S3 valve commanded from stroked to destroked and the PS3 pressure switch does not indicate destroked for a time WITH transmission fluid temperature (Time increases as temperature decreases with maximum time at transmission fluid temperature)	> 6.6 seconds >= 0 deg. C. 15 seconds >= -40 deg. C.	S3 valve changes from stroked to destroked		6.6 seconds 25 ms	A
Pressure Switch Solenoid 3 Circuit High	P0873	This test compares the commanded valve position to the pressure switch PS3 feedback. (part of S3 valve integrity test)	Pending failure occurs when PS3 pressure switch indicates destroked for a time	> 0.30 seconds	S3 valve is stroked NOT Cold initialization unless transmission fluid temperature	> -25 deg. C	300 ms 25 ms	A

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			IF a main pressure dropout is suspected or detected, THEN time limit increases to times	5 seconds and 30 seconds, respectively	Shutdown NOT in process			
			In response to the pending failure, S3 valve is retried by triggering S3 valve command to destroked and back to stroked. If PS3 pressure switch continues to indicate destroked, then one of the three malfunction cases exists.					
			For Case 1 (electrical malfunction), SS3 Control Circuit Low reports failure, also.	P0979				
			For Case 2 (mechanical malfunction), Shift Solenoid 3 Valve Performance – Stuck Off reports failure, also.	P0761				
			For Case 3 (intermittent malfunction), S3 valve retry attempted AND PS3 pressure switch continues to indicate destroked.	2 times				
Pressure Switch Reverse Circuit Low	P0877	This test detects Reverse Pressure Switch closed indication by comparing the Reverse Pressure Switch state to the PRNDL switch state.	Case 1: (Forward range) For a sample size (if dropouts detected, use sample size), PRNDL is P, D1, D2, D3, D4, D5, D6, T8, or T4	100 samples 200 samples	No MIL-on DTCs for this drive cycle. No Fault Pending DTCs for this drive cycle	P0877 P0878 P0708 P0708	3 s 50 ms	A

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			AND RPS indicates Reverse for a time >= 1 seconds (if dropouts detected, use time). 30 seconds Case 2: (Range indefinite) For a sample size, 20 samples net engine torque >= 100 Nm AND PRNDL is indefinitely D3 or another forward range for a time > 1 second		Engine is Running Components powered AND Battery Voltage > 9 V and < 18 V Engine Speed > 200 RPM and < 7500 RPM for 5 seconds Transmission Fluid Temperature >= 0 deg. C Hydraulic System is Pressurized Reverse Pressure Switch State REVERSE indicates			
Pressure Switch Reverse Circuit High	P0878	This test detects the Reverse Pressure switch being stuck in the open position by comparing to the PRNDL switch state and detects the Reverse Pressure switch stuck open at shutdown.	For Case 1: (RPS State and PRNDL State do not agree) For sample size 40 samples PRNDL is REVERSE AND RPS indicates not Reverse after a time >= 1 second For Case 2: (RPS Shutdown Test) If RPS indicates not Reverse for a time > 40 seconds at transmission fluid temperature 0 deg. C. This time varies with 25 seconds transmission fluid temperature, from time at transmission fluid temperature > 35 deg. C to time 60 seconds		For All Cases: Transmission Fluid Temperature >= 0 deg. C For Case 1: (RPS State and PRNDL State do not agree) No MIL-on DTCs for this drive cycle No Fault Pending DTC for this drive cycle. Battery Voltage > 9 V and < 18 V No range switch response active	P0877 P0878 P0708 P0708	Case 1: 3 s Case 2: 60 s 50 ms	A

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			at transmission fluid temperature	< -20 deg. C.	For Case 2: (RPS Shutdown Test)			
					Ignition Key State is	NOT RUN		
					Engine Stopped or Stalled			
					End of Trip timer	>= 5 seconds		
					Engine had been cranking or running this drive cycle			
					Engine speed	< 50 RPM		
					Turbine speed	< 50 RPM		
					Output speed	< 50 RPM		
On-coming/Off-going Ratio								
Pressure Control Solenoid 1 Controlled Clutch Stuck Off	P2723	This test determines if the on-coming clutch energized by Pressure Control Solenoid 1 engages during a forward range shift.	Pending failure occurs when accumulated event timer (For rough road conditions, use)	>= 2 seconds 2 seconds	No MIL-on DTCs for this drive cycle.	P0721 P0722 P0716 P0717 P0877 P0878	2.25 s 25 ms	A
			Timer accumulates when transmission is shifting, output speed	>= 60 RPM				
			AND commanded gear slip speed	> 75 RPM				
			(For rough road conditions, use)	150 RPM.	Output Speed	>= 125 RPM		
					Turbine Speed	>= 60 RPM		
			In response of pending failure, a diagnostic response range is commanded. During this command, this test fails if ABS(Converter slip)	>= 230 RPM	Hydraulic System Pressurized			
			for sample size	> 10 samples	Normal powertrain shutdown not in process			
					Normal or Cold powertrain initialization is complete			
					No range switch response active			
					No Cold Mode operation			
					No abusive garage shift to 1st range detected			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					On-coming clutch control enabled Power downshift abort to previous range NOT active			
Pressure Control Solenoid 2 Controlled Clutch Stuck Off	P0776	This test determines if the on-coming clutch energized by Pressure Control Solenoid 2 engages during a forward range shift.	Pending failure occurs when accumulated event timer (For rough road conditions, use) Timer accumulates when transmission is shifting, output speed AND commanded gear slip speed (For rough road conditions, use) In response of pending failure, a diagnostic response range is commanded. During this command, this test fails if ABS(Converter slip) for sample size	>= 2 seconds 2 seconds >= 60 RPM > 75 RPM 150 RPM. >= 230 RPM > 10 samples	No MIL-on DTCs for this drive cycle. Output Speed Turbine Speed Hydraulic System Pressurized Normal powertrain shutdown not in process Normal or Cold powertrain initialization is complete No range switch response active No Cold Mode operation No abusive garage shift to 1st range detected On-coming clutch control enabled Power downshift abort to previous range NOT active	P0721 P0722 P0716 P0717 P0877 P0878 >= 125 RPM >= 60 RPM	2.25 s 25 ms	A
Pressure Control Solenoid 1 Controlled Clutch Stuck On	P2724	This test determines if the off-going clutch energized by Pressure Control solenoid 1 remains engaged during a forward range shift.	Accumulated fail timer for forward range upshift; OR accumulated fail timer for direction change shifts;	>= 0.2998 seconds >= 3.0 seconds	No MIL-on DTCs for this drive cycle.	P0721 P0722 P0716 P0717	3 s 25 ms	A

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			OR accumulated fail timer	>= 0.500 seconds		P0877		
			for forward range closed throttle downshift;			P0878		
			OR accumulated fail timer	>= 1.0 second	No Fault Pending DTC for this drive cycle.	P0717		
			for forward downshifts above closed throttle.					
					Output Speed	>= 200 RPM		
			Fail timer accumulates during range to range shifts when attained gear slip speed	<= 25 RPM	Turbine Speed	>= 200 RPM		
					Normal powertrain shutdown not in process			
					Normal or Cold powertrain initialization is complete			
					No range switch response active			
					No Cold Mode operation			
					No abusive garage shift to 1st range detected			
Pressure Control Solenoid 2 Controlled Clutch	P0777	This test determines if the off-going clutch energized by Pressure Control solenoid 2 remains engaged during a forward range shift.					3 s	A
Stuck On			Accumulated fail timer	>= 0.2998 seconds	No MIL-on DTCs for this drive cycle.	P0721	25 ms	
			for forward range upshift;			P0722		
			OR accumulated fail timer	>= 3.0 seconds		P0716		
			for direction change shifts;			P0717		
			OR accumulated fail timer	>= 0.500 seconds		P0877		
			for forward range closed throttle downshift;			P0878		
			OR accumulated fail timer	>= 1.0 second	No Fault Pending DTC for this drive cycle.	P0717		
			for forward downshifts above closed throttle.					
					Output Speed	>= 200 RPM		
			Fail timer accumulates during range to range shifts when attained gear slip speed	<= 25 RPM	Turbine Speed	>= 200 RPM		
					Normal powertrain shutdown not in process			
					Normal or Cold powertrain initialization is complete			
					No range switch response active			
					No Cold Mode operation			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					No abusive garage shift to 1st range detected			
PRNDL/IMS								
Transmission Range Sensor High Input	P0708	This test monitors the transmission range switch for invalid input conditions and parity errors occurring over consecutive ignition cycles.	For Case 1 (No Information):		Components powered		Case 1: 1 s	A
			Illegal electrical state for a time >= 1 second		AND Battery Voltage > 9 V and < 18 V		Case 2: 5th occurrence	
			For Case 2 (Long-term Parity): There are 3 counters for long-term parity. These counters are updated at the end of each drive cycle, immediately prior to TCM shutdown.		Engine Speed > 200 RPM and < 7500 RPM		100 ms	
			For Counter 1, increment counter IF Parity Error Detected; decrement counter IF No Parity Error Detected AND No Motion Detected.		for 5 seconds			
			IF Counter 1 >= 15 counts THEN report failure.					
			For Counter 2, increment counter IF Parity Error Detected AND (No Valid Drive Detected OR No Valid Park/Neutral Detected) AND Motion Detected; decrement counter IF No Parity Error Detected AND Valid Park/Neutral Detected AND Valid Drive Detected AND Motion Detected.					
			IF Counter 2 >= 5 counts THEN report failure.					

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			For Counter 3, increment Counter 3 IF Parity Error Detected while in Reverse AND No Valid Reverse Detected AND Motion Detected. Decrement Counter 3 IF No Parity Error Detected AND Valid Reverse Detected AND Motion Detected.					
			IF Counter 3,	>= 10 counts				
			THEN report failure.					
			Where					
			Parity Error Detected is defined as a failure of the 4-bit PRNDL input such that the sum of those bits yields an odd result for a time;	>= 30 seconds;				
			Motion Detected is defined as output speed for a time;	>= 200 RPM >= 10 seconds				
			Valid Drive Detected is defined as the 4-bit DL indicates Valid Drive for a time;	>= 3 seconds				
			Valid Park Detected is defined as the 4-bit PRNDL indicates Valid Park for a time and output speed;	>= 0.2 seconds <= 20 RPM				
			Valid Reverse Detected is defined as the 4-bit PRNDL indicates Valid Reverse for a time;	>= 15 seconds;				
			Valid Neutral Detected is defined as the 4-bit PRNDL indicates Valid Neutral for a time and output speed OR for a time.	>= 0.2 seconds <= 20 RPM OR >= 3 seconds				
Transmission Range Sensor Circuit Range/Performance	P0706	This test monitors the transmission range switch inputs at engine start to determine that it is indicating a valid starting position (Park or Neutral).	For sample size, PRNDL C input is closed OR PRNDL P is NOT closed.	> 7 samples	No MIL-on DTC for this drive cycle. Battery voltage	P0706 > 9V and < 18V	200 ms 25 ms	B

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Powertrain State is READY or CRANKING Engine speed	> 100 RPM and < 350 RPM.		
Solenoid Electrical								
Main Modulation/Line Pressure Control Solenoid Control Circuit Open	P0960	This test detects solenoid electrical open circuit malfunctions.	Fault pending is set a single hardware fault occurrence. IF hardware fault is present for a sample size. THEN initiate intrusive test by opening low side driver. IF engine is cranking or running and intrusive test indicates no short to ground exists for a sample size. THEN report malfunction.	>= 200 samples >= 3 samples	No MIL-on DTC for this drive cycle Components powered AND Battery Voltage High side driver 1 enabled	P0657 P0658 P0659 > 9 V and < 18 V	5075 ms 25 ms	A
Main Modulation/Line Pressure Control Solenoid Control Circuit Low	P0962	This test detects solenoid electrical ground circuit malfunctions.	Fault pending is set at single electrical hardware fault to ground occurrence. IF the electrical open test is enabled and an electrical hardware fault to ground is present for a sample size. THEN initiate intrusive test by opening low side driver. IF engine is cranking or running and hardware fault is present for a sample size. THEN report malfunction.	>= 200 samples >= 2 samples	No MIL-on DTC for this drive cycle Components powered AND Battery Voltage High side driver 1 enabled	P0657 P0658 P0659 > 9 V and < 18 V	5050 ms 25 ms	A

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
Main Modulation/Line Pressure Control Solenoid Control Circuit High	P0963	This test detects solenoid electrical short to power circuit malfunctions.	Short to power is present for a sample size	3 consecutive samples	No MIL-on DTC for this drive cycle Components powered AND Battery Voltage High side driver 1 enabled	P0657 P0658 P0659 > 9 V and < 18 V	75 ms 25 ms	A
Pressure Control Solenoid 2 Control Circuit Open	P0964	This test detects solenoid electrical open circuit malfunctions.	Fault pending is set a single hardware fault occurrence. IF hardware fault is present for a sample size THEN initiate intrusive test by opening low side driver. IF engine is cranking or running and intrusive test indicates no short to ground exists for a sample size. THEN report malfunction.	>= 6 samples >= 3 samples	No MIL-on DTC for this drive cycle Components powered AND Battery Voltage Extended cranking for a time OR battery voltage OR battery voltage High side driver 2 enabled	P2669 P2670 P2671 > 9V and < 18V. <= 4 seconds <= 7 V >= 10 V	225 ms 25 ms	A
Pressure Control Solenoid 2 Control Circuit Low	P0966	This test detects solenoid electrical ground circuit malfunctions.	Fault pending is set at single electrical hardware fault to ground occurrence.		No MIL-on DTC for this drive cycle	P2669	200 ms 25 ms	A

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			IF the electrical open test is enabled and an electrical hardware fault to ground is present for a sample size. THEN initiate intrusive test by opening low side driver. IF engine is cranking or running and hardware fault is present for a sample size. THEN report malfunction.	>= 6 samples >= 2 samples	Components powered AND Battery Voltage > 9V and < 18V. Extended cranking for a time <= 4 seconds OR battery voltage <= 7 V OR battery voltage >= 10 V High side driver 2 enabled	P2670 P2671		
Pressure Control Solenoid 2 Control Circuit High	P0967	This test detects solenoid electrical short to power circuit malfunctions.	Short to power is present for a sample size	3 consecutive samples	No MIL-on DTC for this drive cycle Components powered AND Battery Voltage > 9V and < 18V. Extended cranking for a time <= 4 seconds OR battery voltage <= 7 V OR battery voltage >= 10 V	P2669 P2670 P2671 P0967	75 ms 25 ms	A

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					High side driver 2 enabled			
Pressure Control Solenoid 1 Control Circuit Open	P2727	This test detects solenoid electrical open circuit malfunctions.	Fault pending is set a single hardware fault occurrence. IF hardware fault is present for a sample size THEN initiate intrusive test by opening low side driver. IF engine is cranking or running and intrusive test indicates no short to ground exists for a sample size. THEN report malfunction.	>= 5 samples >= 3 samples	No MIL-on DTC for this drive cycle Components powered AND Battery Voltage > 9V and < 18V. Extended cranking for a time OR battery voltage OR battery voltage High side driver 1 enabled	P0657 P0658 P0659 <= 4 seconds <= 7 V >= 10 V	200 ms 25 ms	A
Pressure Control Solenoid 1 Control Circuit Low	P2729	This test detects solenoid electrical ground circuit malfunctions.	Fault pending is set at single electrical hardware fault to ground occurrence. IF the electrical open test is enabled and an electrical hardware fault to ground is present for a sample size. THEN initiate intrusive test by opening low side driver. IF engine is cranking or running and hardware fault is present for a sample size. THEN report malfunction.	>= 5 samples >= 2 samples	No MIL-on DTC for this drive cycle Components powered AND Battery Voltage > 9V and < 18V.	P0657 P0658 P0659	175 ms 25 ms	A

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Extended cranking for a time <= 4 seconds OR battery voltage <= 7 V OR battery voltage >= 10 V High side driver 1 enabled			
Pressure Control Solenoid 1 Control Circuit High	P2730	This test detects solenoid electrical short to power circuit malfunctions.	Short to power is present for a sample size	3 consecutive samples	No MIL-on DTC for this drive cycle Components powered AND Battery Voltage > 9V and < 18V. Extended cranking for a time <= 4 seconds OR battery voltage <= 7 V OR battery voltage >= 10 V High side driver 1 enabled	P0657 P0658 P0659 P2730	75 ms 25 ms	A
Shift Solenoid 1 Control Circuit Open	P0972	This test detects solenoid electrical open circuit malfunctions.	Fault pending is set a single hardware fault occurrence. IF hardware fault is present for a sample size THEN initiate intrusive test by opening low side driver.		No MIL-on DTC for this drive cycle	P2669 P2670 P2671	325 ms 25 ms	A

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			IF engine is cranking or running and intrusive test indicates no short to ground exists for a sample size. THEN report malfunction.	>= 10 samples	Components powered AND Battery Voltage > 9V and < 18V.			
				>= 3 samples	High side driver 2 enabled			
Shift Solenoid 1 Control Circuit Low	P0973	This test detects solenoid electrical ground circuit malfunctions.	Fault pending is set at single electrical hardware fault to ground occurrence. IF the electrical open test is enabled and an electrical hardware fault to ground is present for a sample size. THEN initiate intrusive test by opening low side driver. IF engine is cranking or running and hardware fault is present for a sample size, THEN report malfunction.	>= 10 samples >= 2 samples	No MIL-on DTC for this drive cycle Components powered AND Battery Voltage > 9V and < 18V. High side driver 2 enabled	P2669 P2670 P2671	300 ms 25 ms	A
Shift Solenoid 1 Control Circuit High	P0974	This test detects solenoid electrical short to power circuit malfunctions.	Short to power is present for a sample size	3 consecutive samples	No MIL-on DTC for this drive cycle Components powered AND Battery Voltage > 9V and < 18V.	P2669 P2670 P2671 P0974	75 ms 25 ms	A

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					High side driver 2 enabled			
Shift Solenoid 2 Control Circuit Open	P0975	This test detects solenoid electrical open circuit malfunctions.	Fault pending is set a single hardware fault occurrence. IF hardware fault is present for a sample size THEN initiate intrusive test by opening low side driver. IF engine is cranking or running and intrusive test indicates no short to ground exists for a sample size. THEN report malfunction.	>= 10 samples >= 3 samples	No MIL-on DTC for this drive cycle Components powered AND Battery Voltage > 9V and < 18V. High side driver 2 enabled	P2669 P2670 P2671	325 ms 25 ms	A
Shift Solenoid 2 Control Circuit Low	P0976	This test detects solenoid electrical ground circuit malfunctions.	Fault pending is set at single electrical hardware fault to ground occurrence. IF the electrical open test is enabled and an electrical hardware fault to ground is present for a sample size. THEN initiate intrusive test by opening low side driver. IF engine is cranking or running and hardware fault is present for a sample size, THEN report malfunction.	>= 10 samples >= 2 samples	No MIL-on DTC for this drive cycle Components powered AND Battery Voltage > 9V and < 18V. High side driver 2 enabled	P2669 P2670 P2671	300 ms 25 ms	A
Shift Solenoid 2 Control Circuit High	P0977	This test detects solenoid electrical short to power circuit malfunctions.	Short to power is present for a sample size	3 consecutive samples	No MIL-on DTC for this drive cycle	P2669 P2670 P2671	75 ms 25 ms	A

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Components powered AND Battery Voltage > 9V and < 18V. High side driver 2 enabled	P0977		
Shift Solenoid 3 Control Circuit Low	P0979	This test detects solenoid electrical ground circuit malfunctions.	Fault pending is set a single hardware fault occurrence. If engine is cranking or running and hardware fault is present for sample size. then report malfunction.	>= 6 samples	No MIL-on DTC for this drive cycle Components powered AND Battery Voltage > 9V and < 18V. High side driver 2 enabled Commanded gear	P2669 P2670 P2671 P0979 P0980 > 9V and < 18V. NOT Reverse Trim, NOT 5th, NOT 6th	250 ms 25 ms	A
Shift Solenoid 3 Control Circuit High	P0980	This test detects solenoid electrical short to power circuit malfunctions.	Short to power is present for a sample size	3 consecutive samples	No MIL-on DTC for this drive cycle Components powered AND Battery Voltage	P2669 P2670 P2671 P0980 > 9V and < 18V.	75 ms 25 ms	A

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					High side driver 2 enabled			
					Commanded gear	NOT Reverse Trim, NOT 5th, NOT 6th		
Actuator Supply 1 (HSD1) Voltage Open	P0657	This test detects if the voltage measured at the HSD1 detection circuit shows that multiple low side detection circuits indicate open, but the high side detection circuit indicates high voltage.	Report malfunction when the engine is running or cranking AND the number of failure events.	>= 3.	No MIL-on DTCs for this drive cycle	P0657	75 ms 25 ms	A
			A failure event occurs when the number of failed solenoids connected to HSD1 AND	>= 2	HSD1 is commanded ON.			
			HSD1 voltage	>= 6V	Components powered AND			
					Battery Voltage	> 9V and < 18V.		
					If engine is cranking, then crank time OR	< 4 seconds		
					battery voltage	> 10V		
Actuator Supply 1 (HSD1) Voltage Low	P0658	This test detects low voltage when high voltage is expected indicating a short to ground at the circuit.	Report malfunction when short to ground is detected for a number of events AND the engine is running or cranking.	>= 3 times	No MIL-on DTC for this drive cycle	P0658	75 ms 25 ms	A
					HSD1 is commanded ON.			
					Components powered AND			
					Battery Voltage	> 9V and < 18V.		
					If engine is cranking, then crank time OR	< 4 seconds		
					battery voltage	> 10V		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
Actuator Supply 1 (HSD1) Voltage High	P0659	This test detects if the voltage measured at the HSD 1 detection circuit indicates high during initialization (when the circuit is off)	During initialization, report malfunction when the number of failure events A failure event occurs when HSD1 voltage	>= 3 times >= 6V	During initialization		75 ms 25 ms	A
Actuator Supply2 (HSD2) Voltage Open	P2669	This test detects if the voltage measured at the HSD2 detection circuit shows that multiple low side detection circuits indicate open, but the high side detection circuit indicates high voltage.	Report malfunction when the engine is running or cranking AND the number of failure events. A failure event occurs when the number of failed solenoids connected to HSD1 AND HSD1 voltage	>= 3. >= 2 >= 6V	No MIL-on DTC for this drive cycle HSD2 is commanded ON. Components powered AND Battery Voltage If engine is cranking, then crank time OR battery voltage	P2669 > 9V and < 18V. < 4 seconds > 10V	75 ms 25 ms	A
Actuator Supply2 (HSD2) Voltage Low	P2670	This test detects low voltage when high voltage is expected indicating a short to ground at the circuit.	Report malfunction when short to ground is detected for a number of events AND the engine is running or cranking.	>= 3 times	No MIL-on DTC for this drive cycle HSD2 is commanded ON. Components powered AND Battery Voltage If engine is cranking, then crank time	P2670 > 9V and < 18V. < 4 seconds	75 ms 25 ms	A

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					OR battery voltage > 10V			
Actuator Supply 2 (HSD2) Voltage High	P2671	This test detects if the voltage measured at the HSD 2 detection circuit indicates high during initialization (when the circuit is off)	During initialization, report malfunction when the number of failure events A failure event occurs when HSD1 voltage	>= 3 times >= 6V	During initialization		75 ms 25 ms	A
TCC Pressure Control Solenoid Control Circuit Open	P2761	This test detects torque converter solenoid electrical open circuit malfunctions.	Fault pending is set a single hardware fault occurrence. IF hardware fault is present for a sample size THEN initiate intrusive test by opening low side driver. IF engine is cranking or running and intrusive test indicates no short to ground exists for a sample size. THEN report malfunction.	>= 120 samples >= 3 samples	No MIL-on DTC for this drive cycle Components powered AND Battery Voltage High side driver 1 enabled	P0657 P0658 P0659 > 9V and < 18V	3075 ms 25 ms	B
TCC Pressure Control Solenoid Control Circuit High	P2763	This test detects solenoid electrical short to power circuit malfunctions.	Short to power is present for a sample size	3 consecutive samples	No MIL-on DTC for this drive cycle Components powered AND Battery Voltage High side driver 1 enabled	P0657 P0658 P0659 P2763 > 9V and < 18V	75 ms 25 ms	B

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
TCC Pressure Control Solenoid Control Circuit Low	P2764	This test detects solenoid electrical ground circuit malfunctions.	Fault pending is set at single electrical hardware fault to ground occurrence. IF the electrical open test is enabled and an electrical hardware fault to ground is present for a sample size, THEN initiate intrusive test by opening low side driver. IF engine is cranking or running and hardware fault is present for a sample size, THEN report malfunction.	>= 120 samples >= 2 samples	No MIL-on DTC for this drive cycle Components powered AND Battery Voltage High side driver 1 enabled	P0657 P0658 P0659 > 9V and < 18V	3050 ms 25 ms	B
Miscellaneous								
4 Wheel Drive Low Switch Circuit Malfunction	P2771	This test detects abnormal conditions for the four-wheel drive indication switch input by comparing switch state range to calculated range.	For Case 1: (Stuck Off) This test fails when, for number of occurrences, the transfer case 4WD switch indicates High range and the calculated transfer case range is Low range for a time. For Case 2 (Stuck On) This test fails when,for number of occurrences, the transfer case 4WD switch indicates Low range and the calculated transfer case range is High range for a time	>= 200 occurrences >= 5 seconds >= 200 occurrences >= 5 seconds.	No MIL-on DTCs for this drive cycle. No Fault Active DTCs for this drive cycle No Fault Pending DTCs for this drive cycle Output Speed Transfer Case	P2771 P0721 P0722 P2771 P0721 P0722 P0721 P0722 > 60 RPM NOT neutral	9 sec 25 ms	B

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Transmission fluid temperature Engine Speed Shift complete AND range attained	> 20 deg. C and < 130 deg. C > 200 RPM and < 7500 RPM not neutral		
Transmission Component Slipping	P0894	This test detects the number of turbine slip events during the Neutral Locked Turbine (NLT) request from engine controller.	For this ignition cycle, when the number of Neutral Locked Turbine (NLT) Slip events, then report fail. Where number of NLT Slip events for this ignition cycle = Number of accumulated NLT Slip events – Number of NLT Slip events from previous ignition cycles. And, where number of accumulated NLT Slip events is incremented when commanded gear or attained gear is NLT AND turbine speed for a time	>= 3 > 50 RPM > 3 seconds.	Components powered AND Battery Voltage Engine Speed for	 > 9 V and < 18 V > 200 RPM and < 7500 RPM 5 seconds	9 sec 25 ms	B
Ignition Switch Run/Start Circuit	P2534	Out of range low.	Ignition voltage for a time	< 5 volts >= 30 seconds	No MIL-on DTC for this drive cycle Components powered AND Battery Voltage Engine Speed for	P2534 > 9 V and < 18 V > 200 RPM and < 7500 RPM 5 seconds	30 sec 100 ms	A
GMLAN Bus Reset Counter Overrun	U0073	This test detects if the GMLAN bus is off for a calibration duration.	CANB_bus is off for a time	>= 3 seconds	Components powered AND		3 sec 100 ms	B

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Battery Voltage > 9 V and < 18 V Engine Speed > 200 RPM and < 7500 RPM for 5 seconds			
GMLAN ECM Controller State of Health Failure	U0100	This test detects CAN (GMLAN) bus failures by detecting State of Health failures in GMLAN message $191 from ECM.	Case 1 (x out of y): The failure counter increments when a State of Health (SOH) failure is detected. A SOH failure occurs when message is missing. When the failure counter is a number of samples out of a number of samples, report fail. Case 2 (intermittent): Report fail, when the failure counter and number of samples out of number of samples for 5 consecutive sample windows	>= 5 samples 7 samples > 0 counts < 5 samples 7 samples	Components powered AND Battery Voltage > 9 V and < 18 V Engine Speed > 200 RPM and < 7500 RPM for 5 seconds Ignition Key State RUN GMLAN message $191 is received from ECM Enable criteria met for a time > 3 seconds	For Case 1: 700 ms For Case 2: 3.5 seconds 100 ms	B
Upshift Switch Circuit	P0815	This test detects the upshift switch ON.	Case 1 (PRNDL state is N, P or R): PRNDL state is unchanged for a time >= 2.5 seconds AND upshift switch state ON for a time >= 3 seconds. Case 2 (PRNDL state is forward range): PRNDL state is unchanged		No MIL-on DTCs for this drive cycle. Components powered AND Battery Voltage > 9 V and < 18 V Engine Speed > 200 RPM and < 7500 RPM for 5 seconds	P0826 P0708 Case 1: 5.5 seconds Case 2: 602.5 seconds 100 ms	C

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			for a time >= 2.5 seconds AND upshift switch state ON for a time >= 600 seconds.					
Downshift Switch Circuit	P0816	This test detects the downshift switch ON.	Case 1 (PRNDL state is N, P or R): PRNDL state is unchanged for a time >= 2.5 seconds AND downshift switch state ON for a time. >= 3 seconds. Case 2 (PRNDL state is forward range): PRNDL state is unchanged for a time >= 2.5 seconds AND downshift switch state ON for a time >= 600 seconds.		No MIL-on DTCs for this drive cycle. Components powered AND Battery Voltage Engine Speed	P0826 P0708 > 9 V and < 18 V > 200 RPM and < 7500 RPM for 5 seconds	Case 1: 5.5 seconds Case 2: 602.5 seconds 100 ms	C
Up and Down Shift Switch Circuit	P0826	This test detects upshift/downshift switch circuit at an illegal state.	Switch state is ILLEGAL for a time >= 10 seconds.		No MIL-on DTCs for this drive cycle. Components powered AND Battery Voltage Engine Speed	P0826 > 9 V and < 18 V > 200 RPM and < 7500 RPM for 5 seconds	10 seconds 100 ms	C