

2002 trucks with V6 or V8 gasoline engines
4L60-E, 4L80-E TRANSMISSION DIAGNOSTIC PARAMETERS

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SENSED PARAMETER	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA AND THRESHOLD VALUE(S)	SECONDARY PARAMETERS AND ENABLE CONDITIONS	TIME LENGTH AND FREQUENCY	MIL ILLUMINATION TYPE
Vehicle Speed Sensor - Low input	P0502	0 RPM to 6000 RPM This DTC detects a low vehicle speed when the vehicle has a large engine speed in a drive gear range.	Output Speed < 150 rpm	- Gear Range is not Park/Neutral - No TPS high or low DTC's set - No Map Sensor DTC's set - No PSA DTC set - Vacuum: 0 to 105 KPA - No engine torque default - Engine Torque: 40 to 400 ft-lbs - Throttle Position > 12% - Engine Speed > 3000 RPM	3 seconds Continuous	DTC Type B
Vehicle Speed Sensor - Intermittent	P0503	0 RPM to 6000 RPM This DTC detects an unrealistic large drop in vehicle speed.	In P/N : Output Speed drop > 8192 RPM Not P/N : Output Speed drop >1300 RPM	- Time since last Gear Range Change > 6 Seconds - Engine Speed >450 rpm - No Output Speed rise > 600 rpm within 2 seconds - No PSA DTC set - Time since 4WDL State Change > 6 seconds	In park or neutral 409 seconds Not in park or neutral 3 seconds	DTC Type B
Trans Fluid Temp Sensor Circuit - Performance Test	P0711	0.24V to 5.0V The DTC detects an unrealistically large change in transmission temperature or a value which remains constant for a period of time in which a measurable amount of change is expected.	1) Failure 1 is true for ≥ 409 seconds 2) Failure 2 happens ≥ 14 times in 7 seconds.	- System Voltage: 10 and 18 volts - No VSS DTC's - Raw TTS counts: 10 to 251 - No DTC 1870 - Trans Temp at startup: -40 C to 21 C - Engine Running ≥ 409 sec. - Vehicle Speed ≥ 5 mph for ≥ 409 sec. cumulative this ignition cycle. - Torque Converter Slip ≥ 120 rpm for ≥ 409 sec. cumulative this ignition cycle. - Coolant Temp ≥ 70 C and has changed by ≥ 50 C since startup. 1) Trans Temp has not changed ≥ 2.25 C (absolute value) since startup 2) Trans Temp changes ≥ 20 C (absolute value) in 200 msec.	1) 409 seconds 2) 7 seconds continuous	DTC Type C
Trans Fluid Temp Sensor Circuit - Low input (high temp)	P0712	0.24V to 5.0V The DTC detects a continuous short to ground in the TTS signal circuit or the TTS sensor	Raw TTS count < 10	- System Voltage: 10 to 18 volts - Ignition "on"	10 seconds Continuous	DTC Type C
Trans Fluid Temp. Sensor Circuit - High Input (Low temp)	P0713	0.24V to 5.0V The DTC detects a continuous open or short to high in the TTS signal circuit or the TTS sensor	Raw TTS counts > 250	- System Voltage: 10 to 18 volts - Ignition "on"	400 seconds Continuous	DTC Type C

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TCC Enable Solenoid Electrical	P0740	0V to 12V This DTC detects a continuous open or short to ground in the TCC circuit or the TCC solenoid	Fail Counter > 43 Counts out of 50 Total Counts	- System Voltage: 10 to 18 volts - Engine Speed > 450 rpm for 5 seconds and not in fuel cutoff	Continuous	DTC Type B
TCC System Stuck OFF	P0741	This DTC detects high torque converter slip when the TCC is commanded on.	TCC slip > 130 RPM	Engine Speed > 450 rpm for 6 seconds and not in fuel cutoff -Gear Range is D2, D3, or D4 -No PSA DTC set - No TPS high or low DTC's - No VSS DTC's - No TCC Enable Sol. DTC's - No TCC Control Sol. DTC's - No TCC stuck on P0742 DTC - No Range change within 6 sec - Trans temp.; 20 C to 150 C - Throttle Position: 20% to 99% - Gear ratio: 0.89 to 1.02 - TCC is commanded on for 5 seconds - TCC duty cycle >= 75%	20 seconds Continuous	DTC Type B
TCC System Stuck ON	P0742	This DTC detects low torque converter slip when the TCC is commanded off.	TCC Slip: -20 to +20 RPM Fail Counter >= 2	- Engine Speed > 450 rpm for 6 seconds and not in fuel cutoff - No Range change within 5 sec. - No TP high or low sensor DTC's - No VSS DTC's - No TCC Enable Sol. DTC's - No TCC Control Sol. DTC's -No PSA DTC set - No Engine Torque Default - Eng Torque: 50 to 400 ft-lbs - Vacuum: 0 to 105 kPa - Commanded Gear is not 1st -Gear Range is D4 - Trans temp.; 20 C to 130 C - Throttle Position: 17% to 45% - TCC is commanded off - Engine Speed: 1000 to 3000 rpm - Speed Ratio: 0.64 to 1.35 - Vehicle Speed: 15 to 50 mph	5 seconds Continuous	DTC Type B

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Shift Solenoid A Performance	P0751	This DTC detects abnormal shift patterns: Stuck OFF: 2-2-3-3 pattern	Fail Counter >= 2. The fail counter is incremented when the following fail cases are true: Stuck OFF: 1 and 2	<p>General</p> <ul style="list-style-type: none"> -Engine Speed > 450rpm for 5 seconds and not in fuel cutoff -Gear range is D4 -Ignition voltage: 10 to 18 volts -Transfer case ratio in 4wd low: 0.9 to 1.2 -Transfer case ratio in 4wd high: .6 to 2.85 -Transmission output speed >= 150 rpm -No TP high or low DTC's -No VSS low or intermittent DTC's -No Solenoid electrical DTC's -No DTC 742 -No PSA DTC set <p>-Trans Temp.: 20 C to 130 C</p> <p>Fail Case 1</p> <ul style="list-style-type: none"> - 1st gear commanded >= 2.0 seconds - TPS >= 10% - Engine torque: 50 to 400 ft lbs - Modeled speed ratio >= 0.35 - Gear ratio: 1.2 to 1.8 <p>Fail Case 2</p> <ul style="list-style-type: none"> - 4th gear commanded >= 1.0 seconds - TPS >= 10% - Engine torque: 50 to 400 ft lbs - Modeled speed ratio >= 0.85 - Gear ratio: 0.95 to 1.15 <p>gear</p> <ul style="list-style-type: none"> - TCC commanded ON - TPS: 8% to 35% - Speed Ratio: 0.65 to 0.80 - TCC Slip: -20 to +50 rpm for > 4 sec 	<p>Continuous</p> <p><i>Fail Case 1</i> 0.5 seconds one time</p> <p><i>Fail Case 2</i> 6.0 seconds one time</p>	DTC Type B

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Shift Solenoid B Performance	P0757	This DTC detects abnormal shift patterns: Stuck ON: 1-2-2-1 pattern	Fail Counter >= 1 The fail counter is incremented when the following fail cases are true: Stuck ON: 1 and 2	- Engine Speed > 450 rpm for 5 seconds and not in fuel cutoff - Gear Range is D4 - Ignition voltage: 10 to 18 volts - Transfer case ratio in 4wd low: 0.9 to 1.2 - Transfer case ratio in 4wd high: .6 to 2.85 - Transmission output speed >= 150 rpm - No TPS DTC's - No VSS DTC's - No solenoid electrical DTC's - No TCC Stuck On DTC. - No PSA DTC set - Trans Temp: 20 C to 130 C Fail Case 1 - 3rd gear commanded >= 1.0 seconds - TPS >= 10% - Engine torque: 50 to 400 ft lbs - Modeled speed ratio >= 0.5 - Gear ratio: 1.6 to 1.8 Fail Case 2 - 4th gear commanded >= 1.0 seconds - TPS >= 10% - Engine torque: 0 to 400 ft lbs - Modeled speed ratio >= 0.5 - Gear ratio: 1.3 to 1.8	Continuous Fail Case 1 2.0 seconds one time Fail Case 2 2.0 seconds one time	DTC Type A
Shift Solenoid B Electrical	P0758	0V to 12V This DTC detects a continuous open or short to ground in the SSB circuit or the SSB solenoid	Fail Counter > 43 Counts out of 50 Total Counts	- System Voltage: 10 to 18volts - Engine Speed > 450 rpm for 5 seconds and not in fuel cutoff	Continuous	DTC Type A
3-2 Downshift Solenoid Electrical	P0785	0V to 12V This DTC detects a continuous open or short to ground in the SSB circuit or the SSB solenoid	Fail Counter > 43 Counts out of 50 Total Counts	- System Voltage: 10 to 18 volts - Engine Speed > 450 rpm for 5 seconds and not in fuel cutoff	Continuous	DTC Type B

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PSA Circuit Malfunction	P1810	0V to 12V This DTC detects an invalid state of the PSA sensor or the PSA circuit by deciphering the PSA inputs.	<p>Fail Case 1 Illegal Trans Pressure Switch State (111) or (101)</p> <p>Fail Case 2 Gear range is D2, D4, or Reverse during engine startup.</p> <p>Fail Case 3 Gear range is Park or Neutral when operating in D4.</p>	<p>Fail Case 1 - Engine Speed > 450 rpm for 5 seconds and not in fuel cutoff - System Voltage: 10 to 18 volts</p> <p>Fail Case 2 - System Voltage: 10 to 18 volts - No VSS DTC's - Vehicle Speed <2 mph</p> <p>1. Engine Speed < 80 rpm for > 0.1 seconds, then, 2. Engine Speed: 80 to 550 rpm for > 0.07 seconds, then, 3. Engine Speed > 550 rpm</p> <p>Fail Case 3 - Engine Speed > 450 rpm for 5 seconds and not in fuel cutoff - System Voltage: 10 to 18 volts - 4th gear commanded - No Engine Torque Default - Engine Torque: 40 to 400 ft-lbs - Vacuum: 0 to 105 kPa - TCC Locked On - No VSS DTC's - Speed Ratio: 0.60 to 0.75 - TPS: 10% to 50%</p>	<p>Fail Case 1 60 seconds</p> <p>Fail Case 2 5 Seconds</p> <p>Fail Case 3 10 seconds</p> <p>Continuous</p>	DTC Type B
TCC PWM Solenoid Electrical	P1860	0V to 12V This DTC detects a continuous open or short to ground in the TCC PWM circuit or the TCC PWM sensor	Fail Counter > 43 Counts out of 50 Total Counts	<p>- System Voltage: 10 to 18 volts - Engine Speed > 450 rpm for 5 seconds and not in fuel cutoff - Commanded Gear is 1st - TCC Duty Cycle <= 10% or >= 90%</p>	Continuous	DTC Type B

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Transmission Component Slipping	P1870	This DTC detects excessive TCC slip when the torque converter clutch should be engaged.	<p>If TCC slip is: 130 to 800 rpm for 7 seconds, then increment the Trans Slip Counter by one.</p> <p>When the counter reaches 3, set the code</p> <p>OR</p> <p>When fail case 2 is true.</p>	<ul style="list-style-type: none"> - Engine Speed > 450 rpm for 5 seconds and not in fuel cutoff - Gear is not 1st - Gear Range is D4 - No PSA DTC's set - No TPS High or Low DTC's - No VSS DTC's - No solenoid electrical DTC's - Shift Solenoid Performance Diagnostic counters are all zero - TPS: 20% to 99% - Trans temp.: 20 C to 150C - No Engine Torque Default - Engine Torque: 50 to 400 ft-lbs - Vac: 0 to 105 kPa - Speed ratio: 0.69 to 0.88 - Engine Speed: 1500 to 3000 rpm - Vehicle Speed: 30 to 82 mph <p>Fail Case 1</p> <ul style="list-style-type: none"> - TCC commanded on for > 5 sec - TCC duty cycle >= 40% for >= 5 seconds <p>Fail Case 2</p> <ul style="list-style-type: none"> - Run fail case 2 immediately after fail case 1 increments the trans slip counter to either 1 or 2. Discontinue fail case 2 if the TCC is commanded OFF at any time. - TPS: 20% to 99% <p>Criteria A</p> <p>If : 130 rpm < TCC slip < 800 rpm for 7 seconds, then: Go to max pressure freeze adapts go to criteria B</p> <p>Criteria B</p> <p>If : 130 rpm < TCC slip < 800 rpm for 7 seconds, then: Command TCC OFF for 1.5 seconds go to criteria C</p> <p>Criteria C</p> <p>If : 130 rpm < TCC slip < 800 rpm for 7 seconds, then: Set code p1870</p>	Continuous	DTC Type B

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Four Wheel Drive Low Circuit Performance	P1875	0V to 12V This DTC detects a continuous open or short to ground in the Four Wheel Drive low Circuit	<p>Stuck On Engine Spd Divided by Transfer Case Output Spd Ratio: 0.8 to 1.2</p> <p>Stuck Off Engine Spd Divided by Transfer Case Output Spd Ratio: 2.5 to 2.9</p>	<p>- Engine Speed > 450 rpm for 5 seconds and not at fuel cut off - No TPS DTC's set - No PSA DTC's set - Gear Range is D4 - Shift Solenoid Performance Counters are zero - No VSS Low DTC's set - No TCC Enable Sol. DTC's set - No TCC Control Sol. DTC's set - No SSA Sol. DTC's set - No SSB Sol. DTC's set - No TCC DTC's set - Eng Torque: 40 to 400 ft lbs - VAC: 0 to 105 kPa - Trans Temp: 20C to 130C - Vehicle Speed > 7 MPH - TPS: 17% to 50%</p> <p>Stuck ON - 4wd Low switch in 4wd Low - Transfer case not in 4wd Low - TCC Slip: -3000 to -50 rpm</p> <p>Stuck OFF - 4wd Low switch not in 4wd Low - Transfer case is in 4wd Low - TCC ON - TCC Slip: 100 to 3000 rpm</p>	<p>Stuck ON: 5 Seconds 1 Occurrence</p> <p>Stuck OFF: 10 Seconds 1 Occurrence</p> <p>Continuous</p>	DTC Type B