

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
Transmission Fluid Overtemperature	P0218	Detects a high transmission fluid temperature for long period of time	Trans Temp $\geq 130^{\circ}$ C.	No P0711, P0712, P0713 DTCs	600.0 sec	Type C
Vehicle Speed Sensor: Low Input	P0502	0 - 6000 RPM Detects low vehicle speed with large engine speed in Drive range	unfiltered Output Speed < 150 RPM	No MAP, TPS DTCs (see below) No P0716, P0717 DTCs No Engine Torque malfunction 50 < Engine Torque < 225 ft-lb Input Speed > 1500 RPM 0 \leq MAP < 104.7 kPa TPS $\geq 12.0\%$	3.0 sec	Type B
Vehicle Speed Sensor: Intermittent	P0503	0 - 6000 RPM Detects loss of vehicle speed when vehicle is moving	Drop in unfiltered Output Speed > 1200 RPM in any Drive range	Engine Running No Engine Torque malfunction + Δ VSS, loop-to-loop, < 250 RPM for > 5.0 sec 50 < Engine Torque < 225 ft-lb	3.0 sec in all Drive ranges	Type B
Transmission Fluid Temperature Sensor Circuit: Range/ Performance	P0711	0.24 - 5.0 V Detects unrealistically large change in TFT or value which remains constant for period of time in which a measurable change is expected	<u>Fail Case 1</u> Δ TFT $\leq 2.25^{\circ}$ C. <u>Fail Case 2</u> Δ TFT $\geq 20^{\circ}$ C. in 200 msec	No ECT DTCs (see below) No P0502, P0503, P0716, P0717 DTCs 10 \leq TFT A/D counts ≤ 251 NOT (8.0 < Ignition Voltage < 18.0 V) < 0.5 sec. Engine Speed > 500 RPM ≥ 300.0 sec Vehicle Speed ≥ 5.0 mph for 900.0 sec cumulative -40 $^{\circ}$ C. \leq Trans Temp at startup $\leq 21^{\circ}$ C. TCC Slip ≥ 120 RPM > 409.0 sec cumulative ECT $\geq 70^{\circ}$ C. Δ ECT > 55 $^{\circ}$ C. since start-up	<u>Fail Case 1</u> 80.0 sec <u>Fail Case 2</u> Fail count > 14 within 7.0 sec	Type C
Transmission Fluid Temperature Sensor Circuit: Low Input	P0712	0.24 - 5.0 V Detects continuous Short-to-Ground in Transmission Fluid Temperature sensor or TFT signal circuit	Trans Temp Sensor ≤ 10 counts (Raw TTS ≤ 0.33 Volts)	No P0712 FA No P0713 FA or FATKO NOT (8.0 < Ignition Voltage < 18.0 V) < 0.5 sec.	10.0 sec	Type C
Transmission Fluid Temperature Sensor Circuit: High Input	P0713	0.24 - 5.0 V Detects continuous Open or Short-to-Power in TFT sensor or TFT signal circuit	Trans Temp Sensor ≥ 251 counts (Raw TTS ≥ 4.92 Volts)	No P0713 FA No P0712 FA or FATKO NOT (8.0 < Ignition Voltage < 18.0 V) < 0.5 sec.	400.0 sec	Type C

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Input Speed Sensor Circuit: Range/ Performance	P0716	0 - 6000 RPM Detects unrealistically large change in Input Speed in very short time	unfiltered Input Speed change \geq 1300 RPM	No TPS DTCs (see below) No P0502, P0503, P0717, P0751, P0752, P0753 DTCs No Engine Torque malfunction Engine running, not at fuel cutoff 25 < Engine Torque < 225 ft-lb TPS \geq 15.0% Vehicle Speed \geq 5.0 mph	0.8 sec	Type B
Input Speed Sensor Circuit: No Signal	P0717	0 - 6000 RPM Detects low Input Speed with large vehicle speed	unfiltered Input Speed < 100 RPM	No P0502, P0503 DTCs No Engine Torque malfunction 25 < Engine Torque < 225 ft-lb Engine running, not at fuel cutoff Vehicle Speed > 5.0 mph	5.0 sec	Type B
Brake Switch Circuit High (Stuck ON)	P0719	0 – 12 V Detects OPEN brake switch during accelerations	Accel count = 8	No P0502, P0503 DTCs <u>Increment Accel counter by 1 when:</u> Brake Switch is ON AND Vehicle Speed \leq 5.0 mph THEN 5.0 < Vehicle Speed < 20.0 mph for 3.0 sec THEN Vehicle Speed > 20.0 mph for 6.0 sec	Reset counter if Brake Switch state changes during test Brake ON > 900.0 sec	Type C
Brake Switch Circuit Low (Stuck OFF)	P0724	0 – 12 V Detects CLOSED Brake Switch during decelerations	Decel count = 8	No P0502, P0503 DTCs <u>Increment Decel counter by 1 when:</u> Brake Switch is OFF AND Vehicle Speed \geq 20.0 mph for 6.0 seconds THEN 5.0 < Vehicle Speed < 20.0 mph for 3.0 seconds THEN Vehicle Speed < 5.0 mph	Reset counter if Brake Switch state changes during test	Type C
Incorrect Gear Ratio	P0730	Detects unknown gear ratio	Ratio > 3.13 OR 2.23 < Ratio < 2.87 OR 1.71 < Ratio < 2.02 OR 1.07 < Ratio < 1.54 OR 0.71 < Ratio < 0.91 OR Ratio < 0.61	No TPS DTCs (see below) No P0502, P0503, P0716, P0717, P1810 DTCs Engine running, not at fuel cutoff 50 < Engine Torque < 225 ft-lb Throttle > 15.0% Vehicle speed > 5.0 mph 0 \leq MAP < 104.7 kPa Range = Forward or Reverse range Transmission Temperature \geq 20° C. Time since last range change \geq 6.0 sec	7.0 sec	Type C

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Torque Converter Clutch System Stuck OFF	P0741	Detects high TCC slip with TCC commanded on	TCC Slip > 200 RPM increments Stuck OFF counter Count = 1	No TPS DTCs (see below) No P0502, P0503, P0716, P0717, P0742, P1860, P1887 DTCs No Engine Torque malfunction Engine running, not at fuel cutoff 8.0% < TPS < 100.0% 20° C. ≤ Trans Temp < 130° C. 20 < Engine Torque < 225 ft-lb TCC locked OFF ≥ 3.0 sec TCC Capacity ≥ 60% Commanded Gear > 1	6.0 sec	Type B
Torque Converter Clutch System Stuck ON	P0742	Detects lack of Torque Converter Clutch release oil pressure (Switch is CLOSED) when TCC commanded off	TCC Release Switch is closed Count = 4	No TPS DTCs (see below) No P0716, P0717, P1860, P1887 DTCs Engine running, not at fuel cutoff No Engine Torque malfunction Not in Device Control TCC Mode = OFF 10° C. ≤ Trans Temp ≤ 130° C. 20 < Engine Torque < 225 ft-lb 12.0% ≤ TPS ≤ 100.0%	4.0 sec	Type B
Pressure Control Solenoid Circuit Electrical	P0748	0 – 12 V Detects continuous Open or Short-to-Ground in Pressure Control Solenoid or PCS circuit	Pressure Control Solenoid Short Bit = 1	Ignition Voltage Low timer = 0 (No Calibrations for DTC P0748)		Type C
Shift Solenoid A Performance Stuck OFF	P0751	Detects 2-2-3-3 shift pattern	Fail Case 1 Commanded 1st 1.54 < Ratio < 1.71 Fail Case 2 Commanded 4th 0.91 < Ratio < 1.07 Count = 2	No TPS DTCs (see below) No P0502, P0503, P0716, P0717, P0742, P0753, P0758, P1860 DTCs No Engine Torque malfunction TPS ≥ 8.0% VSS > 150 RPM 20° C. ≤ Trans Temp ≤ 130° C. Engine Running, not at fuel cutoff 0.30 sec. after gear change 8.0 ≤ Ignition Voltage ≤ 18.0 V 150 ≤ Input Speed ≤ 6000 RPM 20 ≤ Engine Torque ≤ 225 ft-lb Time since last range change ≥ 6.0 sec	Fail Case 1 3.25 sec Fail Case 2 4.0 sec	Type B

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Shift Solenoid A Performance Stuck ON	P0752	Detects 1-1-4-4 shift pattern	Fail Case 3 0 ≤ Engine Torque ≤ 225 ft-lbs Commanded 2 nd 2.87 < Ratio < 3.13 Fail Case 4 20 ≤ Engine Torque ≤ 225 ft-lbs Commanded 3rd 0.61 < Ratio < 0.72 Count = 2	No TPS DTCs (see below) No P0502, P0503, P0716, P0717, P0742, P0753, P0758, P1860 DTCs No Engine Torque malfunction TPS ≥ 8.0% VSS > 150 RPM 20° C. ≤ Trans Temp ≤ 130° C. Engine Running, not at fuel cutoff 0.30 sec. after gear change 8.0 ≤ Ignition Voltage ≤ 18.0 V 150 ≤ Input Speed ≤ 6000 RPM Time since last range change ≥ 6.0 sec	Fail Case 3 4.0 sec Fail Case 4 4.0 sec	Type B
Shift Solenoid A Electrical	P0753	0 – 12 V Detects continuous Open, Short-to-Ground, or Short-to-Power in Shift Solenoid A or SSA circuit (ODM)	Shift Solenoid A Status = INVALID	NOT (8.0 < Ignition Voltage < 18.0 V) < 0.5 sec.	Fail count = 43 in sample of 50 (Total time approx 4.3 sec)	Type A
Shift Solenoid B Performance Stuck ON	P0756	Detects 4-3-3-4 shift pattern	Fail Case 5 200 < TCC Slip < 1850 RPM VSS > 160 RPM Commanded 1st 0.61 < Ratio < 0.72 Fail Case 6 Commanded Gear = 2 0.91 < Ratio < 1.07 Count = 1	No TPS DTCs (see below) No P0502, P0503, P0716, P0717, P0742, P0753, P0758, P1860 DTCs No Engine Torque malfunction TPS ≥ 8.0% VSS > 150 RPM 20° C. ≤ Trans Temp ≤ 130° C. Engine Running, not at fuel cutoff 0.30 sec. after gear change 8.0 ≤ Ignition Voltage ≤ 18.0 V 150 ≤ Input Speed ≤ 6000 RPM 20 ≤ Engine Torque ≤ 225 ft-lb Time since last range change ≥ 6.0 sec	Fail Case 5 4.0 sec Fail Case 6 4.0 sec	Type A
Shift Solenoid B Performance Stuck OFF	P0757	Detects 1-2-2-1 shift pattern	Fail Case 7 20 ≤ Engine Torque ≤ 225 ft-lb Commanded 3rd 1.54 < Ratio < 1.71 Fail Case 8 0 ≤ Engine Torque ≤ 225 ft-lb Commanded 4th 2.87 < Ratio < 3.13 Count = 1	No TPS DTCs (see below) No P0502, P0503, P0716, P0717, P0742, P0753, P0758, P1860 DTCs No Engine Torque malfunction TPS ≥ 8.0% VSS > 150 RPM 20° C. ≤ Trans Temp ≤ 130° C. Engine Running, not at fuel cutoff 0.30 sec. after gear change 8.0 ≤ Ignition Voltage ≤ 18.0 V 150 ≤ Input Speed ≤ 6000 RPM Time since last range change ≥ 6.0 sec	<u>Fail Case 7</u> 3.0 sec <u>Fail Case 8</u> 2.0 sec	Type A
Shift Solenoid B Electrical	P0758	0 – 12 V Detects continuous Open, Short-to-Ground, or Short-to-Power in Shift Solenoid B or SSB circuit (ODM)	Shift Solenoid B Status = INVALID	NOT (8.0 < Ignition Voltage < 18.0 V) < 0.5 sec.	Fail count = 43 in sample of 50 (Total time approx 4.3 sec)	Type A

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Transmission Range Illegal Status	P1810	0 – 12 V Detects invalid Range status	Illegal PSA range	Engine running, not in fuel cutoff 8.0 < Ignition Voltage < 18.0 V	60.0 sec	Type B
Maximum Adapt and Long Shift	P1811	Detects long shifts with upshift adapts at maximum	Shift time > 0.65 sec	Shift is adaptable Adapts at maximum value	2 counts	Type C
Pressure Switch Assembly Start in Wrong Range	P1815	0 – 12 V Detects Engine Speed transitions	PSA = D2, D4, or Reverse after Start-up	Run once per ignition cycle NOT (8.0 < Ignition Voltage < 18.0 V) < 0.5 sec. No P0502, P0503, P0716, P0717, P1810 DTCs Vehicle Speed < 5.0 mph Engine Speed < 100 RPM for 0.25 sec, THEN 100 < Engine Speed < 1000 RPM for 0.00625 sec; after Engine Speed > 1000 RPM, PSA state is reported	0.25 sec Only at Engine Start-up	Type B
Pressure Switch Drive Ratio in Park/Neutral Range	P1816	0 – 12 V Detects mismatch between P/N indicated and a Drive gear ratio	PSA = P/N Ratio < 3.11	No P1810, P1815, P1817, P1818 DTCs NOT (8.0 < Ignition Voltage < 18.0 V) < 0.5 sec. No Engine Torque malfunction Engine running, not in fuel cutoff Vehicle Speed ≥ 5.0 mph TPS ≥ 10.0% 10 ≤ Engine Torque ≤ 225 ft-lbs	5.0 sec Continuous	Type B
Pressure Switch Assembly Drive Ratio in Reverse Range	P1817	0 – 12 V Detects mismatch between Reverse indicated and a Drive gear ratio	PSA = Reverse Ratio = Drive	No P1810, P1815, P1816, P1818 DTCs NOT (8.0 < Ignition Voltage < 18.0 V) < 0.5 sec. No Engine Torque malfunction Engine running, not in fuel cutoff Vehicle Speed ≥ 5.0 mph TPS ≥ 10.0% 10 ≤ Engine Torque ≤ 225 ft-lbs	5.0 sec Continuous	Type B
Pressure Switch Assembly Reverse Ratio in Drive Range	P1818	0 – 12 V Detects mismatch between Drive indicated and a Reverse gear ratio	PSA = D4, D3, D2, or D1 Ratio = Reverse	No P1810, P1815, P1816, P1817 DTCs NOT (8.0 < Ignition Voltage < 18.0 V) < 0.5 sec. No Engine Torque malfunction Engine running, not in fuel cutoff Vehicle Speed ≥ 5.0 mph TPS ≥ 10.0% 10 ≤ Engine Torque ≤ 225 ft-lbs	5.0 sec Continuous	Type B
Torque Converter Clutch Pulse Width Modulated Solenoid Electrical	P1860	Detects continuous Open or Short-to-Ground in TCC PWM circuit or TCC PWM solenoid	If TCC Control Solenoid Status = INVALID, increment FAIL counter	NOT (8.0 < Ignition Voltage < 18.0 V) < 0.5 sec. TCC Duty Cycle ≤ 10.0% or ≥ 90.0%	Fail Count = 43 in sample of 50 (Total time ≈ 4.3 sec) Continuous	Type A

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Torque Converter Clutch Release Switch Circuit Malfunction	P1887	Release Switch indicates TCC not applied when PCM and TCC Slip show TCC is locked	Release Switch is OPEN Count = 2	No P0716, P0717, P0741, P0742, P1860 DTCs Engine running, not at fuel cutoff No Engine Torque malfunction TCC Mode = LOCKED -20 < Slip < 60 RPM 30 < Engine Torque < 225 ft-lb 15 < TCC Pressure < 120 psi	6.0 sec	Type B