

1996 5.7L (L31) C/K Truck, G-Van, G/P, P Truck 4L80-E Transmission Diagnostic Parameters

96t57R_HD_aT.doc

SENSED PARAMETER	FAULT CODE	SENSOR SIGNAL TYPE	ACCEPTABLE OPERATING RANGE AND RATIONALITY	PRIMARY MALF DETECTION PARAMETERS	SECONDARY MONITORING PARAMETERS AND CONDITIONS	FAIL MONITORING TIME LENGTH AND FREQUENCY OF CHECK	MONITORING METHOD	FAULT CODE STORAGE AND MIL ILLUMINATION
Vehicle Speed Sensor - Low Input	P0502	Analog	0 RPM to 8000 RPM This DTC detects a low Vehicle Speed when the vehicle has a large input speed in a drive gear range.	Output Speed < 200 RPM	Gear Range is not Park/Neutral No PSA DTC set No TP sensor DTC's set Throttle Position > 15% No Map Sensor DTC's set No Engine Torque Malfunction 0KPA > VAC < 106KPA 80ftlbs < Engine Torque < 5.7L = 375 Ft. Lbs. 7.4L = 500 Ft. Lbs. Input Speed > 2500 RPM	3 seconds Continuous	AC Voltage generating Vehicle Speed Sensor	DTC Type A
Trans Fluid Temp Sensor Circuit - Low input	P0712	Analog	.24V to 5.0V The DTC detects a continuous short to ground in the TTS signal circuit or the TTS sensor	Raw TTS < .2000 volts	Ignition "on"	10 seconds Continuous	Thermister	DTC Type B
Trans Fluid Temp. Sensor Circuit - High Input	P0713	Analog	.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 > 4.94140625 Volts	Ignition "on"	400 seconds Continuous	Thermister	DTC Type B

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Input Speed Sensor - Intermittent	P0716	Analog	0 RPM TO 8000 RPM The DTC detects an unrealistically large change in Input Speed	Input Speed loss > 1300 RPM	Gear Range is not Park/Neutral No ISS DTC's set No TPS DTC's set No VSS DTC set No SSA Sol. DTC's set Engine Running and not in fuel cut-off TP Sensor > 18% Vehicle Speed > 20 MPH	3 seconds Continuous	AC Voltage generating Input Speed Sensor	DTC Type B
Input Speed Sensor - Low Input	P0717	Analog	0 RPM TO 8000 RPM The DTC detects a Low Input Speed when the vehicle has large Vehicle and Engine Speeds	Input Speed < 50 RPM	Gear Range is not Park/Neutral No VSS DTC set No PSA Sensor DTC's set Engine Speed > 450 rpm for 5 seconds VSS > 20 MPH	4 seconds Continuous	AC Voltage generating Input Speed Sensor	DTC Type B
Brake Switch Circuit Low	P0719	Digital	.0V to 12.0V This DTC detects an open brake switch during accelerations.	Accel counts > 7 and brake is on for 900 sec without going off for 4 seconds.	No VSS DTC's Brake Switch Off is not passed. Increment Accel counter when Brake Switch is On and Vehicle Speed < 5 MPH then 5 MPH < Vehicle Speed < 20 MPH for 3.5 sec., then Vehicle Speed > 20 MPH for 6 sec	7 test failures within 7 test samples Continuous	Switch	DTC Type A

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TCC System Stuck Off	P0741	Software	This DTC detects high torque converter slip when the TCC is commanded on.	TCC Slip is > 65 rpm	Gear Ratio = 2nd or 3rd Gear Range is D4, D3 or D2 No PSA DTC set No TP sensor DTC's set No VSS DTC set No ISS DTC's set No TCC PWM Sol. DTC's set Engine Speed > 450 rpm for 5 seconds -10 C < TFT < +150.5 degrees C 10% < TP sensor < 80% TCC is commanded off > .1 seconds (between counts)	4 seconds 2nd Occurance Continuous	1X Engine Speed Signal and the Input Speed Sensor	DTC Type A
TCC System Stuck ON	P0742	Software	This DTC detects low torque converter slip when the TCC is commanded off.	TCC Slip is between -15 rpm and +20 rpm.	Commanded Gear is not 1st PSA Range is D4 No ISS DTC's set No VSS DTC set No PSA DTC set No TP sensor DTC's set No TCC Stuck Off DTC set No TCC PWM Sol. DTC set No Engine Torque Malfunction Engine Speed > 450 rpm for 5 seconds and no in fuel cutoff 75 ft. lbs. < Eng Torque < 5.7L = 265 ft. lbs. 7.4L = 355 ft. lbs. TP sensor > 10 %	3.25 seconds 3rd Occurance Continuous	1X Engine Speed Signal and the Input Speed Sensor	DTC Type B

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Shift Solenoid A Performance	P0751	Analog	This DTC detects 2-2-3-3 or a 1-1-4-4 shift pattern	<p>Stuck OFF Commanded Gear = First with measured Ratio = Second > 2.0 sec. AND Commanded Gear = Fourth with TCC Locked and measured Ratio = Third > 3 seconds.</p> <p>Stuck ON Commanded Gear = Second and measured Ratio = First > 3.0 seconds.</p>	No PSA sensor DTC's set No TP DTC's set No VSS DTC set Not in Four Wheel Drive Low No Four Wheel Drive DTC No Shift Solenoid Electrical DTC's No ISS DTC's No TCC PWM DTC set No Engine Torque Malfunction No MAP DTC's set Engine Speed > 450 rpm for 5 sec and not in fuel cutoff 1st gear = 2.63<Ratio<2.38 2nd gear = 1.58<Ratio<1.43 3rd gear = 1.05<Ratio<0.95 4th gear = 0.80<Ratio<0.70 Vehicle Speed > 2.5 MPH TPS > 12% Trans Fluid Temp > 20.25 deg. C 70 ft.lbs < Engine Torque < 5.7l. = 350 ft. lbs. 7.4l. = 500 ft. lbs.	<p>Stuck OFF 2nd occurrence</p> <p>Stuck ON 5th occurrence</p> <p>Continuous</p>	Shift Solenoid	DTC Type A
Shift Solenoid A Electrical	P0753	Analog	0V to 12V This DTC detects a continuous open, short to ground, or short to battery voltage in the SSA circuit or the SSA sensor	Fail Counter > 43 Counts out of 50 Total Counts. (1 count = 100ms)	Engine speed > 450 rpm > 5 seconds.	Continuous	Shift Solenoid	DTC Type A

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Shift Solenoid B Performance	P0756	Software	This DTC detects 4-3-3-4 or a 1-2-2-1 shift pattern	Stuck ON Commanded Gear = First and measured Ratio = 3rd > 2 seconds. <u>AND</u> Commanded Gear = Second with measured Ratio = Third > 2 seconds. Stuck OFF Commanded Gear = Third with measured Ratio = Second > 4 seconds.	No PSA sensor DTC's set No TP DTC's set No VSS DTC set Not in Four Wheel Drive Low No Four Wheel Drive DTC No Shift Solenoid Electrical DTC's No ISS DTC's No Engine Torque Malfunction No MAP DTC's set Engine Speed > 450 rpm for 5 sec and not in fuel cutoff Vehicle Speed > 4 MPH TPS > 12% Trans Fluid Temp > 20.25 deg. C 80 ft.lbs < Engine Torque < 5.7I. = 350 ft. lbs. 7.4I. = 500 ft. lbs. 1st gear = 2.63<Ratio<2.38 2nd gear = 1.58<Ratio<1.43 3rd gear = 1.05<Ratio<0.95 4th gear = 0.80<Ratio<0.70	Stuck On: 2 Occurrences Stuck Off: 4 Occurrences Continuous	Shift Solenoid	DTC Type A
Shift Solenoid B Electrical	P0758	Analog	0V to 12V This DTC detects a continuous open, short to ground, or short to battery voltage in the SSB circuit or the SSB sensor	Fail Counter > 43 Counts out of 50 Total Counts. (1 count = 100ms)	Engine speed > 450 rpm > 5 seconds	Continuous	Shift Solenoid	DTC Type A

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PSA Circuit Malfunction	P1810	Digital	0V to 12V This DTC detects an invalid state of the PSA sensor or the PSA circuit by deciphering the PSA inputs.	Fail Case 1 Illegal Trans Pressure Switch State Fail Case 2 Gear range is D2 after engine startup Fail Case 3 (A) Gear range is P/N with drive ratio > 1.58. OR (B) Gear range is Reverse Ratio not between 1.96 and 2.16 OR (C) Gear range is Drive with Ratio between 1.96 and 2.16	Fail Case 1 Enging Running > 450 RPM > 5 sec. 10.0 < System Voltage < 19.0 Fail Case 2 10.0 < System Voltage < 19.0 No VSS DTC Engine Speed < 240 rpm for > .3 sec then Engine Speed > 240rpm and < 800 rpm for > .1sec then Engine Speed > 800 rpm Vehicle Speed < 2 mph Fail Case 3 No TP DTC's set No VSS DTC set No ISS DTC's set No PSA DTC set No Shift Solenoid Electrical or Performance DTC's Engine Speed > 450 rpm for 5 sec and < and not in fuel cutoff Vehicle > 5 MPH TPS > 9% Engine Torque > 80 ft. lbs	Fail Case 1 5 seconds Fail Case 2 8 Seconds Fail Case 3 3A > 15 sec. 3B > 7 sec. 3C > 5 sec. Continuous	Pressure Switch Assembly	DTC Type B
TCC PWM Solenoid Electrical	P1860	Analog	0V to 12V This DTC detects a continuous open, short to ground, or short to battery in the TCC PWM circuit or the TCC PWM sensor	Fail Counter > 43 Counts out of 50 Total Counts (1 count = 100 ms)	Engine speed > 450 rpm > 5 seconds Gear = 1st	Continuous	TCC PWM Solenoid	DTC Type A

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Transmission Component Slipping	P1870	Software	This DTC detects excessive TCC slip when the torque converter clutch should be engaged.	If TCC slip is above 170 rpm for 10 sec, then increment the Trans Slip Counter by one. When the counter is greater than 3, set the code.	No TP DTC's set No PSA DTC's set No VSS DTC set No TCC PWM Sol. DTC set No SSA Sol. DTC's set No SSB Sol. DTC's set Shift Solenoid Perf Counters equal zero No TCC Stuck On or Off DTC's No MAP DTC's set Gear Range is D4 Commanded Gear is 4th Engine Speed > 450 rpm for 5 sec. and not in fuel cutoff 12% < TPS < 45% -10C < TTS < +130C 80 ft. lbs < Engine Torque < 5.7L = 265 ft. lbs. 7.4L = 355 ft. lbs. TCC Commanded On > 1.0 sec. AND TCC at max. duty cycle > 1.0 sec	10 seconds 3rd Occurance Continuous	IX Engine Speed Signal and the Input Speed Sensor	DTC Type A

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Four Wheel Drive Low Circuit Performance	P1875	Digital	0V to 12V This DTC detects a continuous open or short to ground in the Four Wheel Drive Circuit	Stuck On Any one gear state. $0.95 < (\text{Input Speed Divided by Transfer Case Output Spd}) < 1.05$ Stuck Off Two different comanded gears with $2.65 < (\text{Input Speed Divided by Transfer Case Output Spd}) < 2.75$	Gear Range is D4 No TPS DTC's set No PSA DTC's set No VSS DTC set No ISS DTC's set No TCC PWM Sol. DTC set No SSA Sol. DTC's set No SSB Sol. DTC's set Engine Shift Solenoid Performance Counters are zero Speed > 450 rpm for 5 seconds and not in fuel cutoff $9\% < \text{TPS} < 99.997\%$ $20.25 < \text{TTS} < 125$ Vehicle Speed > 4 MPH	Stuck On 2.0 seconds 4th occurrence in any one gear Stuck Off 3.0 seconds 1st occurrence in 2 different gears	Four wheel drive input to the PCM	DTC Type A