1996 5.7L (L31) C/K Truck, G-Van (<8500GVW) 4L80-E Transmission Diagnostic Parameters

96t57R_LD_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 ILLUM-INATION
Vehicle Speed Sensor - Low input	P0502	Analog	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 PSA sensor DTC's set No TP high or low sensor DTC's set Throttle Position> 20% No Map Sensor High or Low DTC's set 0KPA>VAC*<106KPA 40ftlbs<Engine Torque<400ftlbs Engine Speed > 3000 RPM	2.5 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 <.2 volts	10V < Sys Volt < 17V Ignition "on"	10 sec Continuous	Thermister	DTC Type A
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 > 4.92 Volts	10V < Sys Volt < 17V Ignition "on"	409 seconds Continuous	Thermister	DTC Type A
Brake Switch Circuit Low	P0719	Digital	0V to 12V This DTC detects an open brake switch during accelerations.	Accel counts > 7 and brake is on for 900 sec without going off for 2 sec	No VSS Low 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 4 sec then vehicle speed > 20 mph for 6 sec	7 test failures within 7 test samples Continous	Switch	DTC Type A

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TCC System Stuck ON	P0742	Software	This DTC detects low torque converter slip when the TCC is commanded off.	TCC Slip is between -20rpm and 20rpm	Engine Speed > 450 rpm for 8 sec and not in fuel cutoff 0kpa<VAC*<106kpa 50ftlbs<Eng Torque<400ftlbs Commanded Gear is not 1st Gear Range is D4, D3 or D2 No PSA sensor DTC's set No TP high or low sensor DTC's set Throttle Position>17% TCC is commanded off No VSS Low DTC's set No TCC Enable Sol. DTC's set No TCC Control Sol. DTC's set	5seconds 2nd Occurrance Continuous	1X Engine Speed Signal and the Vehicle 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	Fail Counter >=2 . The fail counter is incremented if fail cases (1,2,3,& 4) or (1,2,3, & 5) are true	**General** Engine Speed > 400 rpm for 8 sec and not in fuel cutoff No TP high or low DTC's set No Vss low DTC's set No PSA DTC's set Gear range is D4 Vehicle speed >5 mph 20C<TTS<130C No Sol electrical DTC's No DTC 742 Previous shift time > 0sec **Fail Case 1** Commanded 1-2 shift 18%<TPS<45% TPS constant within +/- 3% 5 mph<VSS<35mph In 3 seconds, engine speed in 2nd gear must be 100 rpm > last speed in 1st gear **Fail Case 2** Commanded 2-3 shift 18%<TPS<45% TPS constant within +/- 3% 20 mph<VSS<50 mph In 2 sec, engine speed in 3rd gear must be 150 rpm < last speed in 2nd gear **Fail Case 3** Commanded 3-4 shift 14 %<TPS<45% TPS constant within +/- 3% 30mph<VSS<65mph In 3.5 seconds, engine speed in 3nd gear must be 20 rpm > last speed in 4th gear **Fail Case 4** Commanded 4th gear TCC on 9%<TPS<35% 0.85<Speed Ratio<1.2 200<TCC Slip< 1000 for > 4sec **Fail Case 5** Commanded 4th gear TCC on 9%<TPS<35% 0.6<Speed Ratio<0.8 -20prm<TCC Slip<40 rpm for >4sec	Continuous	Shift Solenoid	DTC Type B

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Shift Solenoid A Electrical	P0753	Analog	0V to 12V This DTC detects a continuous open or short to ground in the SSA circuit or the SSA sensor	Fail Counter >43 Counts out of 50 Total Counts	10V < Sys Volt < 17V Ign On	Continuous	Shift Solenoid	DTC Type A

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Shift Solenoid B Performance	P0756	Software	This DTC detects a non - 2-3 upshiftand a non - 1st gear when 1st gear is commanded or 1st gear when 4th gear is commanded	Fail Case 1 Stuck on counter > 2: it is incremented if fail cases 3&4 are true or Fail Case 2 Stuck off counter > 2: it is incremented if fail cases 1&3 or 2&3 are true	**GENERAL** Vehicle Speed > 15 MPH Gear Range is D4 20C<Trans Fluid Temp<130C TCC not on 0<VAC<105 0<Engine Torque<1500 No TTS sensor DTC's set No PSA sensor DTC's set No TPS sensor High or Low DTC's set No VSS Low DTC's set Engine Running > 400 rpm for 8 sec No Solenoid electrical DTC's No 742 DTC's **Fail Case 1** TPS > 45% 1st commanded for 2 sec 0.5rpm<Speed Ratio<2.6 600rpm<Output Speed<1500rpm -100rpm<TCC Slip<-3000 for 1 sec **Fail Case 2** TPS > 100% 2nd commanded for 410 sec 8<Speed Ratio<8 8191rpm<Output Speed<8191rpm 0rpm<TCC slip<0rpm for 410 sec **Fail Case 3** 13%<TPS<50% TPS remains +/-3% 3rd commanded for 2 sec 3rd commanded Spd Ratio>Last 2nd commanded Spd Ratio - .25 3rd commanded TCC Slip>=Last 2nd commanded TCC Slip+300rpm for 2.5 seconds; discontinue test if time since shift commanded>6.0 seconds **Fail Case 4** TPS > 13% 4th commanded for 1 sec 2.05<Speed Ratio<8 1400rpm<Output Speed<2500rpm 1000rpm<TCC slip<4000rpm for 1.0 sec	Continuous	Shift Solenoid	DTC Type B

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Shift Solenoid B Electrical	P0758	Analog	0V to 12V This DTC detects a continuous open or short to ground in the SSB circuit or the SSB sensor	Fail Counter >43 Counts out of 50 Total Counts	10V < Sys Volt < 17V Ign On	Continuous	Shift Solenoid	DTC Type A
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, D4, Rev **Fail Case 3** Gear range is P/N	**Fail Case 1** Enging Running 10V < Sys Volt < 17V **Fail Case 2** 10V < Sys Volt < 17V No VSS Low DTC's Engine Speed < 80 rpm for > .1 sec then Engine Speed >80rpm and < 600rpm for > .1sec then Engine Speed > 600 rpm Vehicle Speed <2 mph **Fail Case 3** 4th gear .6<Speed Ratio<.7 TCC Locked On No VSS Low DTC's	**Fail Case 1** 5 seconds **Fail Case 2** 5 seconds **Fail Case 3** 24 seconds Continuous	Pressure Switch Assembly	DTC Type B
TCC PWM Solenoid Electrical	P1860	Analog	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	10V < Sys Volt < 17V Ign On gear = 1st	Continuous	TCC PWM Solenoid	DTC Type A
TCC Solenoid Electrical	P1864	Analog	0V to 12V This DTC detects a continuous open or short to ground in the TCC circuit or the TCC sensor	Fail Counter >43 Counts out of 50 Total Counts	10V < Sys Volt < 17V Ign On	Continuous	TCC 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 130 rpm for 7 sec, then increment the Trans Slip Counter by 1. When the counter is greater than 3, set the code.	Engine Speed > 400 rpm for 8 sec and not in fuel cutoff> sec Gear is not 1st No TPS sensor High or Low DTC's set 9%<TPS<35% No TTS sensor DTC's set 20C<TTS<130C No PSA DTC's set 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 0 kpa<Eng Vac<106 kpa 50 ftlbs<Eng Torque<450 ftlbs Gear Range is D4 TCC at Max Apply for > 5 sec TCC on for > 5 sec Shift Solenoid Perf Counters equal zero	7 seconds 3rd Occurance Continuous	1X Engine Speed Signal and the Vehicle 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** .8<(Engine Spd divided by Transfer Case Output Spd)<1.2 **Stuck Off** 2.5<(Egine Spd divided by Transfer Case Output Spd)<3.0	Engine Speed>400rpm for 8 sec and not in fuel cutoff No TPS DTC's set No PSA DTC's set Gear Range is D4 Shift Solenoid Performance Counters are zero 10%<TPS<50% 20C<TTS<120C 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 **Stuck on** -3000rpm<TCC Slip<-50rpm In 4wd Low **Stuck off** TCC on 100rpm<TCC Slip<3000rpm Not in 4wd Low	5 seconds 1 Occurance Continuous	Four wheel drive input to the PCM	DTC Type A
3-2 Control Solenoid Electrical	P1886	Analog	0V to 12V This DTC detects a continuous open or short to ground in the 3-2 control sol. circuit or the 3-2 control sol. sensor	Fail Counter >43 Counts out of 50 Total Counts	10V < Sys Volt < 17V Ign On	Continuous	3-2 Control Solenoid	DTC Type A