

**1997 5.0L (L30) C/K-truck, G-van Light Duty (< 8500 GVW)
4L60-E TRANSMISSION DIAGNOSTIC PARAMETERS**

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| SENSED PARAMETER | FAULT CODE | MONITOR STRATEGY DESCRIPTION | MALFUNCTION CRITERIA AND THRESHOLD VALUES(S) | SECONDARY PARAMETERS AND ENABLE CONDITIONS | TIME REQUIRED AND FREQUENCY | MIL ILLUM. TYPE |
|---|-------------------|--|---|--|---|------------------------|
| Vehicle Speed Sensor - Low Input | P0502 | 0 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 < 105KPA 40ftlbs < Engine Torque < 400ftlbs Engine Speed > 3000 RPM | 2.5 seconds Continuous | DTC Type B |
| Trans Fluid Temp Sensor Circuit - Range / Performance | P0711 | .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) Trans Temp has not changed \geq 1.50 deg C (absolute value) since startup 2) Trans Temp changes \geq 20 deg. C (absolute value) in 200 msec 14 times. | System Voltage between 10 and 19 volts No VSS DTC's 10 < Raw TTS counts < 251 No DTC 1870 Engine Running \geq 409 sec. Vehicle Speed \geq 5 mph for \geq 409 sec. cumulative this ignition cycle. Torque Converter Slip \geq 120 rpm for \geq 409 sec. cumulative this ignition cycle. Trans Temp at startup between -40 and 21°C Coolant Temp \geq 70 deg. C and has changed by \geq 50 deg. C since startup. | 1) 409 seconds continuous. 2) 7 seconds continuous | DTC Type B |
| Trans Fluid Temp Sensor Circuit - Low Input | P0712 | .24V to 5.0V The DTC detects a continuous short to ground in the TTS signal circuit or the TTS sensor | Raw TTS < 10 Counts | System Voltage between 10 and 19 volts Ignition "on" | 10 sec Continuous | DTC Type B |
| Trans Fluid Temp. Sensor Circuit - High Input | P0713 | .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 > 251 Counts | System Voltage between 10 and 19 volts Ignition "on" | 409 second Continuous | DTC Type B |

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| Brake Switch Circuit Low | P0719 | .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 2 sec | 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 4 sec then Vehicle Speed > 20 MPH for 6 sec | 7 test failures within 7 test samples Continuous | DTC Type B |
| TCC Solenoid Electrical | P0740 | 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 | System Voltage between 10 and 19 volts Engine Speed > 450 rpm for 8 sec and not in fuel cutoff | 100 ms/count Continuous | DTC Type A |
| TCC System Stuck ON | P0742 | This DTC detects low torque converter slip when the TCC is commanded off. | TCC Slip is between -20 rpm and 20 rpm | Engine Speed > 450 rpm for 8 sec and not in fuel cutoff 0kpa < VAC < 105kpa 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 | 5 seconds 2nd Occurrence Continuous | DTC Type B |

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| Shift Solenoid A Performance | P0751 | This DTC detects 2-2-3-3 or a 1-1-4-4 shift pattern | Fail Counter >= 3. The fail counter is incremented if fail cases (1,2,3,& 4) or (1,2,3, & 5) are true | General Engine Speed > 450 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 Comanded 1-2 shift 10% < TPS < 45% TPS constant within +/- 6% 5 mph < VSS < 35mph In 2 sec, engine speed in 2nd gear must be 100 rpm > last speed in 1st gear Fail Case 2 Comanded 2-3 shift 10% < TPS < 45% TPS constant within +/- 7% 20 mph < VSS < 50 mph In 2 sec, engine speed in 3rd gear must be 100 rpm < last speed in 2nd gear Fail Case 3 Comanded 3-4 shift 10 % < TPS < 45% TPS constant within +/- 7% 30 mph < VSS < 65 mph In 2 sec, engine speed in 3rd gear must be 20 rpm > last speed in 4th gear Fail Case 4 Comanded 4th gear TCC on 8% < TPS < 35% 0.85 < Speed Ratio < 1.2 200 < TCC Slip < 1000 for > 4sec Fail Case 5 Comanded 4th gear TCC on 8% < TPS < 35% 0.6 < Speed Ratio < 0.8 -20 rpm < TCC Slip < 40 rpm for > 4sec | Continuous | DTC Type A |
| Shift Solenoid A Electrical | P0753 | 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 | System Voltage between 10 and 19 volts Engine Speed > 450 rpm for 8 sec and not in fuel cutoff | 100 ms/count Continuous | DTC Type A |

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| Shift Solenoid B Performance | P0756 | This DTC detects a non-2-3 upshift and a non - 1st gear when 1st gear is commanded or 1st gear when 4th gear is commanded | Fail Case 1 Stuck on Counter >= 3: it is incremented if fail cases 3&4 are true or Fail Case 2 Gear Stuck off Counter >= 3: it is incremented if fail cases 1&3 are true | General Vehicle Speed > 10 MPH Gear Range is D4 20C > Trans Fluid Temp > 130C TCC not On 0 < VAC < 105 kPa 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 > 450 rpm for > 8sec and not at fuel cut off No Solenoid electrical DTC's No 742 DTC's Fail Case 1 Tps > 15% 1st commanded for 2 Sec 0.5 rpm < Speed Ratio < 3.0 400 rpm < Output Speed < 1500 rpm -3000 rpm < TCC slip < -100 rpm for 1.5 sec Fail Case 2 Tps > 100% 2nd commanded for 410 Sec 8 < Speed Ratio < 8 8191 rpm < Output Speed < 8191 rpm 0 rpm < TCC slip < 0 rpm for 410 sec Fail Case 3 13% < Tps < 50% TPS remains +/-7% 3rd commanded for 2.1 Sec 3rd commanded Spd Ratio > Last 2nd Commanded Spd Ratio - .25 3rd commanded TCC Slip >= Last 2nd commanded TCC Slip + 300 rpm for 1.5 seconds; discontinue test if time since shift commanded > 6.0seconds Fail Case 4 Tps > 13% 4th commanded for 1 Sec 2.05 rpm < Speed Ratio < 8 1400 rpm < Output Speed < 2500 rpm 1000 rpm < TCC slip < 4000 rpm for 1.0 sec | Continuous | 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 sensor | Fail Counter > 43 Counts out of 50 Total Counts | System Voltage between 10 and 19 volts Engine Speed > 450 rpm for 8 sec and not in fuel cutoff | 100 ms/count Continuous | DTC Type A |

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| 3-2 Control Solenoid Electrical | P0785 | 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 | System Voltage between 10 and 19 volts Engine Speed > 450 rpm for 8 sec and not in fuel cutoff | 100 ms/count Continuous | DTC Type A |
| 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. | 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 > 450 rpm for > 8 sec and not at fuel cut off System Voltage between 10 and 19 volts Fail Case 2 System Voltage between 10 and 19 volts No VSS DTC's Engine Speed < 80 rpm for > 0.1 sec then Engine Speed > 80 rpm and < 600 rpm for > 0.1 sec then Engine Speed > 550 rpm Vehicle Speed < 2 mph Fail Case 3 4th gear Engine Running > 450 sec for > 8 sec and not at fuel cut off System Voltage between 10 and 19 volts 0.6 < Speed Ratio < 0.75 TCC Locked On No VSS DTC's | Fail Case 1 60 seconds Fail Case 2 5 Seconds Fail Case 3 24 seconds Continuous | 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 | System Voltage between 10 and 19 volts Engine Speed > 450 rpm for 8 sec and not in fuel cutoff gear = 1st 10% < TCC Duty Cycle < 90 % | 100 ms/count Continuous | DTC Type A |

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| Transmission Component Slipping | P1870 | 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 one. When the counter is greater than 3, set the code. | Engine Speed > 450 rpm for 8 sec and not in fuel cutoff 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 < 105 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 Occurence 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 Circuit | <p>Stuck On 0.8 < (Engine Spd Divided by Transfer Case Output Spd) < 1.2</p> <p>Stuck Off 2.5 < (Engine Spd Divided by Transfer Case Output Spd) < 2.9</p> | <p>Engine Speed > 450 rpm for 8 sec 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 17% < TPS < 50% 50 ftlbs < Eng Torque < 400 ftlbs 0kpa < VAC < 105kpa 20C < TTS < 120C Vehicle Speed > 7 MPH 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</p> <p>Stuck on -3000 rpm < TCC Slip < -50 rpm In 4wd Low</p> <p>Stuck off TCC on 100 rpm < TCC slip < 3000 rpm Not in 4wd Low</p> | <p>5 Seconds</p> <p>10 Seconds 1 Occurence</p> <p>Continuous</p> | DTC Type A |