2004 4L60-E & 4L65-E transmission *EXCEPT 4 or 5 cylinder Colorado / Canyon truck*
Transmission Diagnostic Parameters

2004trans6_4L60E.doc

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 sec.	- 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**	.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**	.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
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 for 20 seconds	- Engine Speed > 450 rpm for 5 seconds and not in fuel cutoff - Gear Range is D2 or D3 or D4 - No PSA DTC's set - No TPS High or Low DTC's - No VSS DTC's - No TCC solenoid electrical DTC's - No TCC Performance P0742 TCC Stuck ON DTC set – No range change in last 6 sec - TPS: 20% to 99% - Trans temp.: 20 C to 150 C - Gear ratio: 0.89 to 1.02 - TCC commanded on for 5 sec - TCC duty cycle >= 75%	TCC must be commanded off for at least 0.1 seconds between on cycles	DTC Type B

2004 4L60-E & 4L65-E transmission *EXCEPT 4 or 5 cylinder Colorado / Canyon truck*
Transmission Diagnostic Parameters

2004trans6_4L60E.doc

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
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 Defualt - 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
Shift Solenoid A Performance	**P0751**	This DTC detects abnormal shift pattern **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**	**General** -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: 2.6 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 -Trans Temp.: 20 C to 130 C **Fail Case 1** - 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 **Fail Case 2** – 4th gear commanded >= 1.0 second - TPS >= 10% – Engine torque: 50 to 400 ft lbs – Modeled speed ratio >= 0.85 – Gear ratio 0.95 to 1.15 – Engine torque: 50 to 400 ft lbs	Continuous **Fail Case 1** 0.5 seconds one time **Fail Case 2** 6.0 seconds one time	DTC Type B

2004 4L60-E & 4L65-E transmission *EXCEPT 4 or 5 cylinder Colorado / Canyon truck*
Transmission Diagnostic Parameters

2004trans6_4L60E.doc

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
Shift Solenoid A Performance	**P0752**	This DTC detects abnormal shift pattern **Stuck ON:** **1-1-4-4 pattern**	Fail Counter >= 2 The fail counter is incremented when the following fail cases are true: **Stuck ON:** **1 and 2**	**General** -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: 2.6 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 -Trans Temp.: 20 C to 130 C **Fail Case 1** - 2nd gear commanded >= 1.0 second - TPS >= 10% – Engine torque: 25 to 400 ft lbs - Modeled speed ratio >= 0.5 – Gear ratio 3.0 to 3.3 **Fail Case 2** - 3rd gear commanded >= 1.0 second - TPS >= 10% – Engine torque: 50 to 400 ft lbs - Modeled speed ratio >= 0.5 – Gear ratio 0.65 to 0.9	Continuous **Fail Case 1** 2.0 seconds **Fail Case 2** 3.0 seconds	DTC Type B
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 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
Shift Solenoid B Performance	**P0756**	This DTC detects abnormal shift pattern **Stuck OFF:** **4-3-3-4 pattern**	Fail Counter >= 1 The fail counter is incremented when the following fail cases are true: **Stuck OFF:** **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: 2.6 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** - 1st gear commanded >= 2.0 sec. - Transmission Output >= 200 rpm - Engine Torque: 50 to 400 ft lbs - Throttle Position >= 10% - TCC Slip: -3000 to 200 rpm – Gear ratio 0 to 1.4 **Fail Case 2** - 2nd gear command >= 1.0 sec - Engine Torque: 50 to 400 ft lbs - Modeled Speed Ratio >= 0.5 - Throttle Position >= 10% – Gear ratio 0.9 to 1.2	Continuous **Fail Case 1** 1.0 second **Fail Case 2** 2.0 seconds	DTC Type A

2004 4L60-E & 4L65-E transmission *EXCEPT 4 or 5 cylinder Colorado / Canyon truck*
Transmission Diagnostic Parameters

2004trans6_4L60E.doc

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
Shift Solenoid B Performance	**P0757**	This DTC detects abnormal shift pattern **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: 2.6 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 sec. - Engine Torque: 50 to 400 ft lbs - modeled Speed Ratio >= 0.5 - Throttle Position >= 10% - Gear ratio 1.6 to 1.8 **Fail Case 2** - 4th gear commanded >= 1.0 sec. - Engine Torque: 0 to 400 ft lbs - modeled Speed Ratio >= 0.5 - Throttle Position >= 10% - Gear ratio 1.8 to 3.3	Continuous **Fail Case 1** 2.0seconds **Fail Case 2** 2.0 seconds	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
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 (111) or (101) **Fail Case 2** Gear range is D2, D4, or Reverse during engine startup. **Fail Case 3** Gear range is Park or Neutral when operating in D4.	**Fail Case 1** - Engine Speed > 450 rpm for 5 seconds and not in fuel cutoff - System Voltage: 10 to 18 volts **Fail Case 2** - System Voltage: 10 to 18 volts - No VSS DTC's - Vehicle Speed <2 mph 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 **Fail Case 3** - Engine Speed > 450 rpm for 5 seconds and not in fuel cutoff - System Voltage: 8 to 18 volts - 4th gear commanded - 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%	**Fail Case 1** 60 seconds **Fail Case 2** 5 Seconds **Fail Case 3** 10 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: 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%	Continuous	DTC Type B

2004 4L60-E & 4L65-E transmission *EXCEPT 4 or 5 cylinder Colorado / Canyon truck*
Transmission Diagnostic Parameters

2004trans6_4L60E.doc

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 Component Slipping	**P1870/ P0894**	This DTC detects excessive TCC slip when the torque converter clutch should be engaged.	If TCC slip is: **130 to 800 rpm** for 7 seconds, then increment the Trans Slip Counter by one. When the counter reaches 3, set the code **OR** When fail case 2 is true.	- 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 **Fail Case 1** - TCC commanded on for > 5 sec - TCC commanded to 40% for > 5 seconds **Fail Case 2** - Run fail case 2 immediately after fail case 1 increments the trans slip counter to either 1or 2. Discontinue fail case 2 if the TCC is commanded OFF at any time. - TPS: 20% to 99% **Criteria A** **If** : 130 rpm < TCC slip < 800 rpm for 7 seconds, **then:** Go to max pressure freeze adapts go to criteria B **Criteria B** **If** : 130 rpm < TCC slip < 800 rpm for 7 seconds, **then:** Command TCC OFF for 1.5 seconds go to criteria C **Criteria C** **If** : 130 rpm < TCC slip < 800 rpm for 7 seconds, **then:** Set code p1870	Continuous	DTC Type B

2004 4L60-E & 4L65-E transmission *EXCEPT 4 or 5 cylinder Colorado / Canyon truck*
Transmission Diagnostic Parameters

2004trans6_4L60E.doc

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
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	**Stuck On** Engine Spd Divided by Transfer Case Output Spd Ratio: .8 to 1.2 **Stuck Off** Engine Spd Divided by Transfer Case Output Spd Ratio: 2.5 to 2.9	- 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 ftlbs - VAC: 0 to 105 kpa - Trans Temp: 20C to 130C - Vehicle Speed > 7 MPH - TPS: 17% to 50% **Stuck ON** - 4wd Low switch in 4wd Low - Transfer case not in 4wd Low - TCC Slip: -3000 to -50 rpm **Stuck OFF** - 4wd Low switch not in 4wd Low - Transfer case is in 4wd Low - TCC ON - TCC Slip: 100 to 3000 rpm	**Stuck ON:** 5 Seconds 1 Occurrence **Stuck OFF:** 10 Seconds 1 Occurrence Continuous	DTC Type B