1999 4.3 (LF6 and L35)   S/T-truck, M/L-van, C/K-truck, G-van   (includes Isuzu Hombre)
4L60-E   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
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 - Engine Torque: 40 to 400 ft-lbs - Throttle Position > 20% - Engine Speed > 3000 RPM	2.5 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 > 8000 RPM **Not P/N:** Output Speed drop >1300 RPM	- Time since last Gear Range Change > 6 Seconds - Engine Speed > 450 rpm for 5 seconds and not in fuel cutoff - No Output Speed rise > 600 rpm within 6 seconds - No PSA DTC set	In park or neutral 409 seconds Not in park or neutral 3 seconds	DTC Type B
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 16 volts - Engine Speed > 450 rpm for 5 seconds and not in fuel cutoff	Continuous	DTC Type B
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 5 seconds and not in fuel cutoff - No Range change within 5 sec. - No MAP low and high DTC set - 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 - Eng Torque: 50 to 400 ft-lbs - Vacuum: 0 to 105 kPa - Commanded Gear is not 1st - Gear Range is D4 - 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

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Shift Solenoid A Performance	P0751	This DTC detects abnormal shift patterns:
		
		Stuck OFF:
		 2-2-3-3 pattern
		
		Stuck ON:
		 1-1-4-4 pattern
			Fail Counter >=3 .
			The fail counter is incremented when the following fail cases are true:
			
			Stuck OFF:
			 1,2,3,& 4
			
			Stuck ON:
			 1,2,3, & 5
				General
				-Engine Speed > 450 rpm for 5 seconds and not in fuel cutoff
				-Gear range is D4
				-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
				-Time since last shift is >0 sec
				-Vehicle speed >5 mph
				-Trans Temp.: 20 C to 130 C
				
				Fail Case 1
				- Commanded 1-2 shift
				- TPS: 10% to 45%
				- TPS constant within +/- 7%
				- Vehicle Speed: 5 to 35 mph
				- After 2 seconds, engine speed in 2nd gear must be 80 rpm > last speed in 1st gear
				Fail Case 2
				- Commanded 2-3 shift
				- TPS: 10% to 45%
				- TPS constant within +/- 7%
				- Vehicle Speed: 20 to 50 mph
				- After 2 sec, engine speed in 3rd gear must be 100 rpm < last speed in 2nd gear
				Fail Case 3
				- Commanded 3-4 shift
				- TPS: 10% to 45%
				- TPS constant within +/- 7%
				- Vehicle speed: 30 to 65 mph
				- After 2 seconds, engine speed in 4th gear must be 10 rpm > last speed in 3rd gear
				Fail Case 4
				- Commanded 4th gear
				- TCC commanded ON
				- TPS: 8% to 35%
				- Speed Ratio: 0.85 to 1.2
				- TCC Slip: 200 to 1000 rpm
				              for > 4 sec
				Fail Case 5
				- Commanded 4th gear
				- TCC commanded ON
				- TPS: 8% to 35%
				- Speed Ratio: 0.60 to 0.80
				- TCC Slip: -20 to +50 rpm
				              for > 4 sec
					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 solenoid	Fail Counter >43 Counts out of 50 Total Counts *To set the fault:*	- System Voltage: 10 to 16 volts - Engine Speed > 450 rpm for 5 seconds and not in fuel cutoff	Continuous	DTC Type B

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Shift Solenoid B Performance	P0756	This DTC detects abnormal shift patterns:
		
		Stuck OFF:
		 4-3-3-4 pattern
		
		Stuck ON:
		 1-2-2-1 pattern
			Fail Counter >=3 .
			The fail counter is incremented when the following fail cases are true:
			
			Stuck OFF:
			 1 and 3, or
			 2 and 3
			
			Stuck ON:
			 3 and 4
				- Engine Speed > 450 rpm for 5 seconds and not in fuel cutoff
				- Gear Range is D4
				- No TPS DTC's
				- No VSS DTC's
				- No solenoid electrical DTC's
				- No TCC Stuck On DTC.
				- No PSA DTC set
				- No Trans Temp DTC's set.
				- Vacuum: 0 to 105 kpa
				- Engine Torque: 5 to 450 ft lbs
				- Trans Temp: 20 C to 130 C
				- Vehicle Speed > 5 MPH
				
				Fail Case 1
				- 1st gear commanded > 2.0 sec.
				- Output Speed: 400 to 1500 rpm
				- Speed Ratio: 0.5 to 3.0
				- Throttle Position > 15%
				- TCC Slip: -3000 to -100 rpm
				     for > 1.0 seconds
				Fail Case 2
				- 2nd gear command > 409.5 sec
				- Engine Torque: 40 to 400 ft lbs
				- Vacuum: 0 to 105 kpa
				- TCC Slip: 8191 to 8191 rpm
				- Output speed: 8191 to 8191 rpm
				- Speed Ratio: 8 to 8
				- Throttle Position > 99.9%
				- Fail Timer > 409.5 sec
				Fail Case 3
				- Time with 3rd gear commanded:
				     2.0 to 5 seconds
				- TPS: 13% to 50%
				- TPS constant within +/- 7%
				- Speed Ratio in Third gear does not drop more than 0.3 from the last Speed Ratio in Second gear
				- TCC Slip in Third gear remains > 300 rpm higher than the last TCC Slip in Second gear
				- Fail Timer > 1.5 sec
				Fail Case 4
				- 4th Gear commanded for > 1 sec
				- Output Speed: 1400 to 2500 rpm
				- Speed Ratio: 2.05 to 8.0
				- Throttle Position > 13%
				- TCC Slip: 1000 to 4000 rpm
				     for > 1 seconds.
					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 solenoid	Fail Counter >43 Counts out of 50 Total Counts .	- System Voltage: 10 to 16 volts - 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 16 volts - Engine Speed > 450 rpm for 5 seconds and not in fuel cutoff	Continuous	DTC Type A

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
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 16 volts **Fail Case 2** - System Voltage: 10 to 16 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 > 0.1 seconds, then, 3. Engine Speed > 550 rpm **Fail Case 3** - Engine Speed > 450 rpm for 5 seconds and not in fuel cutoff - System Voltage: 10 to 16 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 16 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
Transmission Component Slipping	P1870	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.	- 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 Trans Temp 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: 9.0% to 35% - Trans temp.: 20 C to 130C - 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 70 mph **Fail Case 1** - TCC commanded on for > 5 sec and at max duty cycle (95%).	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 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: 50 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 **Stuck OFF:** 10 Seconds 1 Occurance Continuous	DTC Type B