

1996 6.5L (L57, L65) C/K Truck, G-Van Transmission Diagnostic Parameters

96t65FYCKGaT.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
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	Ignition "on"	10 sec 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 > 4.92 Volts	Ignition "on"	50.5 second Continuous	Thermister	DTC Type B
Input Speed Sensor - Intermittent	P0716	Analog	0 RPM TO 8000 RPM The DTC detects an unrealistically large change in Input Speed	Input Speed loss > 1000 RPM	TP Sensor > 20% Vehicle Speed > 20 MPH No ISS DTC's set No TPS DTC's set No OSS DTC's set No SSA or SSB Sol. DTC's set	1 seconds Continuous	AC Voltage generating Input Speed Sensor	DTC Type A
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	VSS > 20 MPH Engine Speed > 500 rpm for 5 seconds No OSS DTC's set No PSA Sensor DTC's set PSA indicating not in P/N	2 seconds Continuous	AC Voltage generating Input Speed Sensor	DTC Type A
Output Speed Sensor - Low input	P0722	Analog	0 RPM to 8000 RPM This DTC detects a low output 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 > 12% No Map Sensor DTC's set 0KPA > VAC < 106KPA 80ftlbs < Engine Torque < 450ftlbs Input Speed > 2200 RPM	3 seconds Continuous	AC Voltage generating Output Speed Sensor	DTC Type A

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Output Speed Sensor - Intermittent	P0723	Analog	0 RPM to 8000 RPM This DTC detects an unrealistic large change in output shaft speed.	Output Speed loss > 1000 RPM	Gear Range is not Park/Neutral No PSA DTC set No Four Wheel Drive Low DTC set Engine Speed > 500 rpm for 5 seconds Not in four wheel drive low. No PSA change > 2 seconds	2 seconds Continuous	AC Voltage generating Input Speed Sensor	DTC Type B
TCC System Stuck Off	P0741	Software	This DTC detects high torque converter slip when the TCC is commanded on.	TCC Slip is > 65 rpm	Engine Speed > 500 rpm for 5 seconds -10 C < TFT < +150.5 degrees C 15% < TP sensor < 99.8% TCC is commanded > .6 sec Commanded Gear = 2nd or 3rd Gear Range is D4, D3 or D2 No PSA DTC set No TP sensor DTC's set No OSS DTC's set No ISS DTC set No TCC PWM Sol. DTC's set	4 seconds 2nd Occurance Continuous	IX 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 -20 rpm and 20 rpm	Engine Speed > 500 rpm for 5 sec and < 3650 rpm 60lbs < Eng Torque < 450lbs TP sensor > 20 % Commanded Gear is not 1st PSA Range is D4 No ISS DTC's set No OSS DTC's 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 Speed DTC's set	5 seconds 1st Occurance Continuous	IX 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 >1.7 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 > 2.5 seconds.</p>	<p>Vehicle Speed > 4 MPH TPS > 12% Trans Fluid Temp > 20C 60 ft.lbs<Engine Torque<450 ft. lbs. Engine Speed > 500 rpm for 5 sec and < 3650 rpm No TTS sensor DTC's set No PSA sensor DTC's set No TPS DTC's set No OSS DTC's set Not in Four Wheel Drive Low No Four Wheel Drive DTC No Shift Solenoid Electrical DTC's NO ISS DTC's No Engine Speed Code 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</p>	<p>Stuck OFF 1st 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 or short to ground in the SSA circuit or the SSA sensor	Fail Counter >43 Counts out of 50 Total Counts	Engine speed > 500 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. AND Commanded Gear = Second with measured Ratio = Third > 2 seconds. Stuck OFF Commanded Gear = Third with measured Ratio = Second > 3 seconds.	Vehicle Speed > 4 MPH TPS > 12% 20C < TTS < 130 degrees C 80 ft.lbs < Engine Torque < 450 ft.lbs. Engine Speed > 500 rpm for 5 sec and < 3650 rpm No TTS sensor DTC's set No PSA sensor DTC's set No TPS DTC's set No OSS DTC's set Not in Four Wheel Drive Low No Four Wheel Drive DTC No Shift Solenoid Electrical DTC's No ISS DTC's No Engine Speed Code 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: 4 Occurrences Stuck Off: 8 Occurrences Continuous	Shift Solenoid	DTC Type B
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	Engine speed > 500 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 No Sys Volt DTC's Fail Case 2 No Sys Volt DTC's No VSS DTC's Engine Speed < 50 rpm for > .1 sec then Engine Speed >50rpm and < 525rpm for > .1sec then Engine Speed > 525 rpm Vehicle Speed <2 mph Fail Case 3 Engine Speed > 500 rpm for 5 sec and < 3650 rpm Vehicle > 5 MPH TPS > 12% 80 ft. lbs < Engine Torque < 450 ft. lbs No TPS DTC's set No OSS DTC's set No ISS DTC's set No PSA DTC set No Shift Solenoid Electrical or Performance DTC's	Fail Case 1 25 seconds Fail Case 2 7 Seconds Fail Case 3 3A > 10 sec. 3B > 15 sec. 3C > 15 sec. 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	Engine speed > 500 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 140 rpm and below 500 rpm for 6 sec, then increment the Trans Slip Counter by one. When the counter is greater than 3, set the code.	Engine Speed > 500 rpm for 5 sec Commanded Gear is 4th Gear Range is D4 15% < TPS < 70% -10C < TTS < 130C 60 ft. lbs < Engine Torque < 280 ft. lbs. TCC Commanded on No TPS DTC's set No TTS DTC's set No PSA DTC's set No OSS DTC's 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	6 seconds 3rd Occurance Continuous	1X 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 4th Gear with TCC On with $0.95 < (\text{Input Speed Divided by Transfer Case Output Spd}) < 1.05$ Stuck Off Two different comanded gears with $2.65 < (\text{Input Speed Divided by Transfer Case Output Spd}) < 2.75$	Engine Speed > 500 rpm for 5 seconds $9\% < \text{TPS} < 99.7\%$ $0C < \text{TTS} < 130C$ Vehicle Speed > 4 MPH Gear Range is D4 Shift Solenoid Performance Counters are zero No TPS DTC's set No PSA DTC's set No OSS DTC's set No ISS DTC's set No TCC PWM Sol. DTC set No SSA Sol. DTC's set No SSB Sol. DTC's set	Stuck On 3 seconds 2nd occurrence Stuck Off 1.5 seconds 1st occurrence in 2 different gears	Four wheel drive input to the PCM	DTC Type A