

1997 3.1L (L82) N-Malibu, N-Cutlass
4T40-E TRANSMISSION DIAGNOSTIC PARAMETERS

97c31M_NP9aT.doc

SENSED PARAMETER	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA AND THRESHOLD VALUES	SECONDARY PARAMETERS AND ENABLE CONDITIONS	TIME REQUIRED AND FREQUENCY	MIL ILLUM. 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 PSA sensor DTC's set No TP high or low sensor DTC's set 15% < Throttle Position and < 99% No Map Sensor High or Low DTC's set MAP > 20 KPA Input Speed > 1500RPM Engine Torque between 50 & 300 ft-lbs	5 seconds Continuous Check	DTC TYPE B
Vehicle Speed Sensor - Intermittent	P0503	0 RPM to 8000 RPM This DTC detects a loss of vehicle speed when vehicle is in motion.	Drop in output speed: greater than 1200 rpm in both P/N and in Drive ranges.	Engine Running No PSA code (P1810) Time since last range change > 3 sec Positive output speed change, loop to loop, < 500 rpm for greater than 5 sec	4 seconds for P/N & not-P/N PRNDL ranges Continuous Check	DTC TYPE B
Trans Fluid Temp Sensor Circuit - Range/Perf	P0711	This 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 more than 1.5 deg C 2) Trans Temp changes more than 20 deg C in 200 msec increments fail counter	Engine Running > 300 sec System Voltage between 9 & 16 volts No VSS Codes No ISS Codes Vehicle Speed > 5 mph for 409 sec cumulative. Trans Temp at startup between -40 deg C and 21 deg C. TCC Slip > 300 rpm for 409 sec cumulative. Engine Coolant Temp > 70 C ECT has changed by more than 50 C since startup.	Fail Case 1 Timer 80 seconds. Fail Case 2 Timer Fail Counter > 14 counts within 7 seconds	DTC TYPE B
Input Speed Sensor Circuit- Range/Perf	P0716	0 RPM TO 6000 RPM The DTC detects an unrealistically large change in Input Speed in a very short period of time	Input Speed change > 1300 RPM	No ISS DTC's set No TPS High or Low DTC's set No VSS Low DTC No SSA DTC's set No SSB DTC's set	0.3 seconds Continuous Check	DTC TYPE B
Input Speed Sensor Circuit- No Signal	P0717	0 RPM TO 6000 RPM The DTC detects a Low Input Speed when the vehicle has large vehicle speed.	Input Speed < 50 RPM	No VSS Low DTC set No PSA Sensor DTC's set PSA indicating not in P/N Engine Running VSS > 300 RPM	5 seconds Continuous Check	DTC TYPE B

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TCC System Stuck OFF	P0741	This DTC detects high TCC Slip Speed when TCC is commanded on.	Slip Speed > 250 rpm	Throttle > 15% 30 C < Trans Temp < 110 C TCCMODE = LOCKED Commanded Gear > 1 PRNDL = D4 or D3 or D2 No Input Speed Sensor Codes No TPS codes No PSA codes No Vehicle Speed Sensor Code No TCC Electrical Codes No TCC Stuck ON Codes	5 seconds Continuous Check	DTC TYPE B
TCC System Stuck ON	P0742	This DTC detects Torque Converter release oil pressure (Switch is closed) when the TCC is commanded off.	TCC Release Switch is closed.	Engine Running TCC is commanded off No TCC Release Switch Codes No TCC Solenoid Codes Throttle > 20%	8 seconds Continuous Check	DTC TYPE A
Shift Solenoid A Performance	P0751	This DTC detects shift patterns of 1-1-4-4 or 2-2-3-3 i.e., 1st in 2nd, 4th in 3rd. or 2nd in 1st, 3rd in 4th.	Command Gear = 1 Ratio = 2nd Command Gear = 2 Ratio = 1st Command Gear = 3 Ratio = 4th Command Gear = 4 Ratio = 3rd	PRNDL not in park, reverse, or neutral. TPS > 15%. VSS > 7 mph. The engine is running. 40 kpa < MAP < 105 kpa No ISS codes. No PSA codes. No TPS codes. No VSS code. No Shift Solenoid Electrical codes present.	6 Seconds Continuous Check	DTC TYPE B
Shift Solenoid A Electrical	P0753	0 to 12V This DTC detects a continuous open, short to ground, or short to voltage in SSA circuit (ODM) or solenoid.	SSA ODM feedback circuit state does not equal PCM commanded state	Ignition ON 10 Volts < System voltage < 16V	5 seconds Continuous Check	DTC TYPE A

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Shift Solenoid B Performance	P0756	This DTC detects shift patterns of 1-2-2-1 or 4-3-3-4 (i.e., 1st in 2nd, 4th in 3rd or 2nd in 1st, 3rd in 4th)	Command Gear = 1 and Ratio = 4th Command Gear = 2 and Ratio = 3rd Increments Stuck On Counter Command Gear = 3 and Ratio = 2nd Command Gear = 4 and Ratio = 1st Increments Stuck Off Counter Code sets when either counter = 1	Vehicle Speed > 5 MPH TPS > 8% Gear Range is D4, D3, D2 or D1 Trans Fluid Temp > -10C MAP > 20 kPa (MAP > 0 kPa when commanded gear = 4th) No PSA code P1810 No TPS codes No VSS codes (P0502, P0503) No ISS Codes (Po716, P0717) No SSA or SSB electrical codes (P0753, P0758) Engine Running < 6500 RPM Engine Torque Between 10 ft-lbs and 300 ft-lbs (Engine Torque > 0 ft-lbs when commanded gear = 4th) No Engine Torque Codes	2 sec for 1st gear command 2 sec for 2nd gear command 3 sec for 3rd gear command 4 sec for 4th gear command Continuous	DTC TYPE A
Shift Solenoid B Electrical	P0758	0 to 12V This DTC detects a continuous open, short to ground, or short to voltage in SSB circuit (ODM) or solenoid.	SSB ODM feedback circuit state does not equal PCM commanded state	Ignition ON 10 Volts < System voltage < 16V	5 seconds Continuous Check	DTC TYPE A
PSA Circuit Malfunction (Fail Case 1)	P1810	0V to 12V This DTC detects an invalid state of the PSA sensor or the PSA circuit by deciphering the PSA inputs.	Illegal Range is true	Engine Run	5 seconds Continuous Check	DTC TYPE B
PSA Circuit Malfunction (Fail Case 2)	P1810	0V to 12V This DTC detects an invalid state of the PSA sensor or the PSA circuit by deciphering the PSA inputs.	PSA indicates D2, D4 & Rev after Start-up	Engine Speed Transition From 0 RPM to > 500 RPM No Vehicle Speed Code VEHSPEED < 7 mph	2 seconds only at Engine Start-up Continuous Check	DTC TYPE B
PSA Circuit Malfunction (Fail Case 3)	P1810	0V to 12V This DTC detects an invalid state of the PSA sensor or the PSA circuit by deciphering the PSA inputs.	A). PSA indicates P/N when Ratio indicates 4th Gear > 0.72 B). PSA indicates Reverse when Ratio indicates Drive C). PSA indicates D4, D3, D2, or D1 when Ratio indicates Reverse	STATUS(ENGRUN) is SET No Throttle Codes No Vehicle Speed Code No Input Speed Codes No PSA Code VEHSPEED > 10 mph Throttle ≥ 15 %	10 seconds Continuous Check	DTC TYPE B

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TCC Release Switch Circuit Malf	P1887	This DTC detects release switch is open indicating TCC is not applied when PCM and slip speed indicate TCC is locked.	The release switch status is on.	The engine is running. The TCC is commanded ON. Slip is between -20 rpm and 20 rpm PRNDLFLG = D4 No TCC solenoid electrical failure codes are present. No input speed codes are present.	10 seconds Continuous Check	DTC TYPE B