

**1998 3.1L (L82) N-Malibu and N-Cutlas
4T40-E TRANSMISSION DIAGNOSTICS PARAMETERS**

98c31M_NP9aT.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 PSA sensor DTC's set No TP high or low sensor DTC's set 12% <Throttle Position and < 99% No Map Sensor High or Low DTC's set MAP >50 KPA No Input Speed Sensor codes Input Speed >1500 RPM No Engine Torque codes Engine Torque > 50 ft-lbs	3 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 Drive ranges & Output Speed > 500 rpm.	Engine Running No PSA code (P1810) Time since last range change > 6 sec Positive output speed change, loop to loop, < 500 rpm for greater than 2 sec	4 seconds Drive PRNDL ranges Continuous Check	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	Engine Running 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 Throttle Position >15% Vehicle Speed >5 mph	0.8 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 < 100 RPM	No VSS Low or Intermittent DTC set No PSA Sensor DTC set PSA indicating not in P/N Engine Running VSS > 5 mph	5 seconds Continuous Check	DTC TYPE B
TCC System Stuck OFF	P0741	This DTC detects high TCC Slip Speed when TCC is commanded on.	Slip Speed > 250 rpm	Throttle > 8 % 20 C < Trans Temp < 120 C TCC Mode = ON > 3 seconds. 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

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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 increments fail counter. Code sets when counter = 2	Engine Running TCC is commanded off No TCC Release Switch Codes No TCC Solenoid Codes No Throttle Position codes Throttle > 12% Time since Last range change > 3 seconds.	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 = 2 Ratio = 1st Command Gear = 3 Ratio = 4th Increments Stuck ON counter. Command Gear = 1 Ratio = 2nd Command Gear = 4 Ratio = 3rd Increments Stuck OFF counter. Code sets when either counter = 1	PRNDL not in park, reverse, or neutral. TPS > 8%. VSS > 5 mph. The engine is running. MAP > 20 kpa No ISS codes. No PSA codes. No TPS codes. No VSS code. No Shift Solenoid Electrical codes present. Engine Torque > 20 ft-lbs.	2 seconds for 1st gear commanded 4 seconds for 2nd gear commanded 5 seconds for 3rd gear commanded 5 seconds for 4th gear commanded Continuous Check	DTC TYPE A
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 ie 4th in 1st, 3rd in 2nd or 2nd in 3rd, 1st in 4th.	Commanded Gear =1 Ratio = 4th Commanded Gear = 2 Ratio 3rd Increments Stuck ON counter Commanded Gear = 3 Ratio = 2nd Commanded Gear = 4 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 > 20 C MAP > 20 kpa (MAP >0 when commanded gear = 4th) No PSA codes No TPS codes No VSS codes No ISS codes No SSA or SSB electrical codes Engine Running < 6500 rpm Engine Torque > 10 ft-lbs. (Engine Torque >0 ft-lbs when commanded gear = 4th) No Engine Torque Codes	2 seconds for 1st gear commanded 2 seconds for 2nd gear commanded 3 seconds for 3rd gear commanded 4 seconds for 4th gear commanded Continuous Check	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 Running 10 Volts < System voltage < 16V	60 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 run once per ignition cycle From 0 RPM to > 600 RPM No Vehicle Speed Code Vehicle Speed < 2 mph 10 Volts < System voltage < 16V Engine Speed < 200 rpm for 0.1 sec, then Engine Speed between 200 rpm and 600 rpm for 0.025 sec; after Engine Speed > 600 rpm then PSA state is reported.	2 seconds only at Engine Start-up Continuous Check	DTC TYPE B

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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 Vehicle Speed >5 mph Throttle > 10% Engine Torque > 10 ft-lbs MAP > 10 kpa	A) 15 seconds B) 15 seconds C) 5 seconds Continuous Check	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.	Every 100 msec the circuit is checked and a fail counter is incremented if an open or short is detected.	10 Volts < System voltage < 16V Ignition ON Engine Speed > 500 rpm for 5 sec and not in fuel cut-off TCC Duty Cycle < 10% or > 90%	5 seconds	DTC TYPE A
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 applied.	The release switch status is open and counter equals 2.	The engine is running. The TCC is commanded ON. Slip is between -20 rpm and 40 rpm PRNDL = D4 No TCC solenoid electrical failure codes are present. No input speed codes are present. Engine Torque > 33 ft-lbs. TCC Pressure between 15 & 60 psi.	6 seconds Continuous Check	DTC TYPE B