

2004 4T40-E transmission used with 2.2L (L61) 4-cylinder engine in Malibu

TRANSMISSION DIAGNOSTIC PARAMETERS

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SENSED PARAMETER	FAULT CODE	ACCEPTABLE OPERATING RANGE AND RATIONALITY	PRIMARY MALF DETECTION PARAMETERS	SECONDARY PARAMETERS AND CONDITIONS	MONITORING TIME & DTC TYPE
Transmission Fluid Over Temperature	P0218	High transmission fluid temperature for long period of time	Trans Temp > 130° C.	No P0711, P0712, P713 DTCs -39° C. < Trans Temp < 150° C. for 5 sec	600.0 sec Type C-
Vehicle Speed Sensor: Low Input	P0502	0 - 6500 RPM Low vehicle speed with large engine speed in Drive range	Output Speed < 50 RPM	No P0503, P0716, P0717, or TPS DTCs Engine RPM > 500 for 5.0 sec, NIFCO No Engine Torque malfunction Range ≠ P/N 65 < Engine Torque < 200 N-m 1500 RPM < Input Speed < 5000 TPS > 12.0%	3.0 sec Type B
Vehicle Speed Sensor: Intermittent	P0503	0 - 6500 RPM Loss of vehicle speed when vehicle is moving	Drop in Output Speed > 400 RPM in any Drive range	No P0716, P0717, P0974 DTC Engine RPM > 500 for 5.0 sec, NIFCO Range ≠ P/N Time since last range change > 6.0 sec +ΔVSS, loop-to-loop, < 80 RPM for > 2.0 sec ΔISS < 500 RPM for 2.0 sec Output Speed > 100 RPM for 3.0 sec	0.5 sec Type B
Analog Brake Switch – Brake Applied	P0573	500 – 6500 RPM Mismatch between serial data and PCM	PCM indicates Brake State = ON Serial Data indicates Brake State = OFF	No BAS Faults for ≥ 4 sec THEN Must see a serial data Brake State = ON to OFF transition	2.0 sec THEN Fail Count = 170 Type B
Transmission Fluid Temperature Sensor Circuit: Range/ Performance	P0711	0.24 - 5.0 V Large change in TFT or constant TFT for period of time in which a change is expected	<u>Fail Case 1</u> ΔTFT < 2.25° C. -40° C. < TFT at startup < 21° C. <u>Fail Case 2</u> ΔTFT < 2.25° C. 129° C. < TFT at startup < 143° C.	No P0502, P0503, P0716, P0717 DTCs Engine RPM > 500 for 5.0 sec, NIFCO 8.0 < Ignition Voltage < 18.0 V Veh Spd > 8.0 kph for 900.0 sec cumul. -38° C. < TFT < 149° C. for 10 sec TCC Slip > 120 RPM > 409.0 sec ECT > 70° C. ΔECT > 55° C. since start-up	<u>Fail Cases 1, 2</u> 80.0 sec Type C-

MAF DTCs P0101-P0102-P0103
nMAP DTCs P0105-P0106-P0107-P0108
MAP Intermittent P1106-P1107
ECT DTCs P0115-P0116-P0117-P0118-P0125-P0126-P0128
TP DTCs P0120-P0121-P0122-P0123-P0220-P0221-P0222-P0223-P0225-P0226-P0227-P0228-P1120-P1121-P1122-P1125

P1280-P1281-P1282-P1283-P1285-P1286-P1287-P1288
P0560-P0562-P0563

System Voltage DTCs

Type A and Type B codes illuminate the “Service Engine Soon” lamp. FA = Fault Active
Type C codes illuminate the “Service Vehicle Soon” or “Wrench” lamp.

FATKO = Fault Active This Key On

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Transmission Fluid Temperature Sensor Circuit: Low Input	P0712	0.24 - 5.0 V Continuous Short-to-Ground in Trans Fluid Temperature sensor or TFT signal circuit	Trans Temp Sensor ≤ 40 ohm	8.0 < Ignition Voltage < 18.0 V Engine RPM > 500 for 5.0 sec, NIFCO	10.0 sec Type C-
Transmission Fluid Temperature Sensor Circuit: High Input	P0713	0.24 - 5.0 V Continuous Open in Transmission Fluid Temperature sensor or TFT signal circuit	Trans Temp Sensor ≥ 100707 ohm	No P0502, P0503, P0716, P0717 DTCs Engine RPM > 500 for 5.0 sec, NIFCO 8.0 < Ignition Voltage < 18.0 V OSS > 50 RPM for 400 sec cumul. TCC Slip > 120 RPM > 200 sec cumul.	12.5 sec Type C-
Input Speed Sensor Circuit: Range/ Performance	P0716	0 – 6500 RPM Unrealistically large change in Input Speed in very short time	Input Speed change > 1300 RPM	No P0502, P0503, P0752, P0973, P0974, or TPS DTCs (see below) No Engine Torque malfunction Engine RPM > 500 for 5.0 sec, NIFCO ISS > 1050 RPM for 2.0 sec ΔISS < 1500 RPM for 0.5 sec 35 < Engine Torque < 200 N-m TPS > 15.0% Vehicle Speed > 8.0 kph	0.8 sec Type B
Input Speed Sensor Circuit: No Signal	P0717	0 – 6500 RPM Low Input Speed with large vehicle speed	Input Speed < 100 RPM	No P0502, P0503 DTCs No Engine Torque malfunction Engine RPM > 500 for 5.0 sec, NIFCO Vehicle Speed > 8.0 kph 35 < Engine Torque < 200 N-m	5.0 sec Type B
Torque Converter Clutch System Stuck OFF	P0741	High TCC slip with TCC commanded on	TCC slip > 200 RPM increments Stuck OFF counter Count = 1	No P0502, P0503, P0742, P1866, P1867, P1887, or TPS DTCs No Engine Torque malfunction Engine RPM > 500 for 5.0 sec, NIFCO 30 < Engine Torque < 200 N-m 8.0% ≤ TPS ≤ 100.0% 20° C. < Trans Temp < 130° C. TCC Capacity > 60% for 5.0 sec Commanded Gear > 2	6.0 sec Type B

MAF DTCs
nMAP DTCs
MAP Intermittent
ECT DTCs
TP DTCs

P0101-P0102-P0103
P0105-P0106-P0107-P0108
P1106-P1107
P0115-P0116-P0117-P0118-P0125-P0126-P0128
P0120-P0121-P0122-P0123-P0220-P0221-P0222-P0223-P0225-P0226-P0227-P0228-P1120-P1121-P1122-P1125

System Voltage DTCs

P1280-P1281-P1282-P1283-P1285-P1286-P1287-P1288
P0560-P0562-P0563

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Torque Converter Clutch System Stuck ON	P0742	Lack of Torque Converter Clutch release oil pressure (switch is CLOSED) when TCC commanded off	TCC Release Switch closed for 4.0 sec increments fail counter Count = 4	No P0716, P0717, P1866, P1867, P1887, or TPS DTCs (see below) No Engine Torque malfunction Engine RPM > 500 for 5.0 sec, NIFCO TCC commanded OFF 30 < Engine Torque < 200 N-m Commanded Gear > 1 10° C. < Trans Temp < 130° C. 12.0% ≤ TPS ≤ 75.0%	6.0 sec Type B
Shift Solenoid A Performance Stuck OFF	P0751	2-2-3-3 shift pattern	<u>Fail Case 1</u> Commanded 1st 1.54 < Ratio < 1.71 <u>Fail Case 2</u> Commanded 4th 0.91 < Ratio < 1.07 Count = 2	No P0502, P0503, P0716, P0717, P0742, P0973, P0974, P0976, P0977, or TPS DTCs (see below) No Engine Torque malfunction Engine RPM > 500 for 5.0 sec, NIFCO 8.0 < Ignition Voltage < 18.0 V TPS > 8.0% VSS > 150 RPM 20° C. < Trans Temp < 130° C. 0.30 sec. after gear change 150 < Input Speed < 6000 RPM 30 < Engine Torque < 200 N-m	<u>Fail Case 1</u> 1.5 sec <u>Fail Case 2</u> 4.0 sec Type B
Shift Solenoid A Performance Stuck ON	P0752	1-1-4-4 shift pattern	<u>Fail Case 3</u> 0 < Engine Torque < 200 N-m Commanded 2nd 2.87 < Ratio < 3.13 <u>Fail Case 4</u> 30 < Engine Torque < 200 N-m Commanded 3rd 0.61 < Ratio < 0.72 Count = 2	See P0751	<u>Fail Case 3</u> 3.5 sec <u>Fail Case 4</u> 4.0 sec Type B

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nMAP DTCs P0105-P0106-P0107-P0108
MAP Intermittent P1106-P1107
ECT DTCs P0115-P0116-P0117-P0118-P0125-P0126-P0128
TP DTCs P0120-P0121-P0122-P0123-P0220-P0221-P0222-P0223-P0225-P0226-P0227-P0228-P1120-P1121-P1122-P1125

System Voltage DTCs P1280-P1281-P1282-P1283-P1285-P1286-P1287-P1288
P0560-P0562-P0563

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Shift Solenoid B Performance Stuck ON	P0756	4-3-3-4 shift pattern	<u>Fail Case 5</u> 200 < TCC Slip < 1850 RPM VSS > 160 RPM Commanded 1st 0.61 < Ratio < 1.86 <u>Fail Case 6</u> Commanded 2nd 0.91 < Ratio < 1.07 Count = 1	See P0751	<u>Fail Case 5</u> 2.5 sec <u>Fail Case 6</u> 1.0 sec Type A
Shift Solenoid B Performance Stuck OFF	P0757	1-2-2-1 shift pattern	<u>Fail Case 7</u> 30 < Engine Torque < 200 N-m Commanded 3rd 1.54 < Ratio < 1.71 <u>Fail Case 8</u> 0 < Engine Torque < 200 N-m Commanded 4th 2.87 < Ratio < 3.13 Count = 1	See P0751	<u>Fail Case 7</u> 3.0 sec <u>Fail Case 8</u> 2.0 sec Type A
Shift Solenoid A Low Voltage	P0973	0 – 12 V Continuous Short-to-Ground in Shift Solenoid A or SSA circuit (ODM)	SSA ODM feedback circuit state ≠ PCM commanded state	Ignition ON NOT (8.0 < Ignition Voltage < 18.0 V) < 0.5 sec	Fail count = 43 out of 50 (Time ≈ 4.3 sec) Type A

MAF DTCs P0101-P0102-P0103
 nMAP DTCs P0105-P0106-P0107-P0108
 MAP Intermittent P1106-P1107
 ECT DTCs P0115-P0116-P0117-P0118-P0125-P0126-P0128
 TP DTCs P0120-P0121-P0122-P0123-P0220-P0221-P0222-P0223-P0225-P0226-P0227-P0228-P1120-P1121-P1122-P1125

System Voltage DTCs P1280-P1281-P1282-P1283-P1285-P1286-P1287-P1288
 P0560-P0562-P0563

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Shift Solenoid A High Voltage	P0974	0 – 12 V Continuous Open or Short-to-Power in Shift Solenoid A or SSA circuit (ODM)	SSA ODM feedback circuit state ≠ PCM commanded state	Ignition ON NOT (8.0 < Ignition Voltage < 18.0 V) < 0.5 sec	Fail count = 43 out of 50 (Time ≈ 4.3 sec) Type A
Shift Solenoid B Low Voltage	P0976	0 – 12 V Continuous Short-to-Ground in Shift Solenoid B or SSB circuit (ODM)	SSB ODM feedback circuit state ≠ PCM commanded state	Ignition ON NOT (8.0 < Ignition Voltage < 18.0 V) < 0.5 sec	Fail count = 43 out of 50 (Time ≈ 4.3 sec) Type A
Shift Solenoid B High Voltage	P0977	0 – 12 V Continuous Open or Short-to-Power in Shift Solenoid B or SSB circuit (ODM)	SSB ODM feedback circuit state ≠ PCM commanded state	Ignition ON NOT (8.0 < Ignition Voltage < 18.0 V) < 0.5 sec	Fail count = 43 out of 50 (Time ≈ 4.3 sec) Type A
Pressure Switch Assembly Circuit Malfunction	P1810	0 – 12 V Invalid state of Pressure Switch Assembly circuit	Illegal PSA range	Engine RPM > 500 for 5.0 sec, NIFCO Output Speed < 70 RPM	10.0 sec Type B
Pressure Switch Assembly Circuit Malfunction	P1816	0 – 12 V Drive Ratio with P/N Range	PSA = P/N Ratio < 0.71	No P0502, P0503, P0716, P0717, P0751, P0752, P0756, P0757, P0973, P0974, P0976, P0977, or TPS DTCs (see below) Engine RPM > 500 for 5.0 sec, NIFCO Output Speed ≥ 70 RPM 10.0% < TPS < 100.0% 35 < Engine Torque < 200 N-m	5.0 sec Continuous Type B

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nMAP DTCs P0105-P0106-P0107-P0108
MAP Intermittent P1106-P1107
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TP DTCs P0120-P0121-P0122-P0123-P0220-P0221-P0222-P0223-P0225-P0226-P0227-P0228-P1120-P1121-P1122-P1125

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P0560-P0562-P0563

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Pressure Switch Assembly Circuit Malfunction	P1818	0 – 12 V Reverse Ratio with Park/Neutral OR Drive Range	PSA = P/N, D4, D3, D2, or D1 Ratio = Reverse	No P0502, P0503, P0716, P0717, P0751, P0752, P0756, P0757, P0973, P0974, P0976, P0977, or TPS DTCs (see below) Engine RPM > 500 for 5.0 sec, NIFCO Output Speed ≥ 40 RPM TPS > 7.0% 25 < Engine Torque < 200 N-m	3.0 sec Continuous Type B
Torque Converter Clutch Pulse Width Modulated Solenoid Low Voltage	P1866	Continuous Short-to-Ground in TCC PWM circuit or TCC PWM solenoid	Every 100 msec, FAIL counter incremented if short detected	NOT (8.0 < IGN Volt. < 18.0 V) < 0.5 sec Ignition On Engine RPM > 500 for 5.0 sec, NIFCO TCC Duty Cycle < 10.0% or > 90.0%	Fail Count = 43 out of 50 (Time ≈ 4.3 sec) Continuous Type A
Torque Converter Clutch Pulse Width Modulated Solenoid High Voltage	P1867	Continuous Open in TCC PWM circuit or TCC PWM solenoid	Every 100 msec, FAIL counter incremented if open detected	NOT (8.0 < IGN Volt. < 18.0 V) < 0.5 sec Ignition On Engine RPM > 500 for 5.0 sec, NIFCO TCC Duty Cycle < 10.0% or > 75.0%	Fail Count = 43 out of 50 (Time ≈ 4.3 sec) Continuous Type A
Torque Converter Clutch Release Switch Circuit Malfunction	P1887	Open Release Switch, indicating TCC not applied when PCM and TCC slip show TCC is locked	Release switch open for 4.0 sec Count = 2	No P0716, P0717, P0741, P0742, P1866, P1867 DTCs Engine RPM > 500 for 5.0 sec, NIFCO TCC commanded ON -20 < Slip < 60 RPM PSA = D4 40 < Engine Torque < 200 N-m 20° C. < Trans Temp < 130° C. 103 < TCC Pressure < 827 kPa	4.0 sec Type B

MAF DTCs P0101-P0102-P0103
nMAP DTCs P0105-P0106-P0107-P0108
MAP Intermittent P1106-P1107
ECT DTCs P0115-P0116-P0117-P0118-P0125-P0126-P0128
TP DTCs P0120-P0121-P0122-P0123-P0220-P0221-P0222-P0223-P0225-P0226-P0227-P0228-P1120-P1121-P1122-P1125

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