



Technical Service Information

THM 4L80-E ELECTRICAL DIAGNOSIS

FORCE MOTOR

1. Volt/Ohmmeter set to Ohms, leads terminal to terminal on Force Motor, Ohmmeter should read 3-5 ohms, at 70°F.
2. Terminal "L" (Red/Black Wire) to Force Motor case, Ohmmeter should read greater than 1000 ohms, at 70°F.
3. DO NOT apply 12V to force motor or damage may occur, as Force Motor operates on 5.0 Volts maximum.

TCC/PWM SOLENOID

1. Volt/Ohmmeter set to Ohms, with leads terminal to terminal on TCC/PWM Solenoid, Ohmmeter should read 10-15 ohms, at 70°F.
2. Should hear "Click" when 12V and ground are applied.

SHIFT SOLENOID "A" AND "B"

1. Volt/Ohmmeter set to Ohms, with leads terminal to terminal on Shift Solenoid, Ohmmeter should read 20-50 ohms, at 70°F.
2. Should hear "Click" when 12V and ground are applied.

OUTPUT SPEED SENSOR (OFF VEHICLE)

1. Volt/Ohmmeter set to Ohms, with leads terminal to terminal on Output Speed Sensor, Ohmmeter should read 1200-1500 ohms, at 70°F.

OUTPUT SPEED SENSOR (ON VEHICLE)

1. Connect a Voltmeter (Back probe with wires connected between PPL/WHT wire and LT GRN/BLK wire) at the Output Speed Sensor.
2. Set Voltmeter to A.C. Volts. The following voltages should be measured at the indicated speeds.
0 MPH = 0.00 VOLTS A.C.
20 MPH = 7.00 VOLTS A.C. (APPROX)
25 MPH = 8.50 VOLTS A.C. (APPROX)
30 MPH = 9.75 VOLTS A.C. (APPROX)

TURBINE SHAFT SPEED SENSOR (OFF VEHICLE)

1. Volt/Ohmmeter set to Ohms, with leads terminal to terminal on Turbine Speed Sensor, Ohmmeter should read 1200-1500 ohms, at 70°F.

TURBINE SHAFT SPEED SENSOR (ON VEHICLE)

1. Connect a Voltmeter (Back probe with wires connected between GRAY/RED wire and DK BLUE/WHITE wire) at the Turbine Speed Sensor.
2. Set Voltmeter to A.C. Volts. Voltage can now be measured, and should increase, with an increase in engine RPM.

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TRANSMISSION OIL TEMP SENSOR

1. Volt/Ohmmeter set to Ohms, with leads terminal to terminal on Transmission Oil Temperature Sensor. Ohmmeter should read within the specifications found in the chart below, depending on temperature.

DIAGNOSTIC AID
TRANSMISSION SENSOR - TEMP TO RESISTANCE (APPROXIMATE)

°C	°F	MINIMUM RESISTANCE	NOMINAL RESISTANCE	MAXIMUM RESISTANCE
-40°C	-40°F	80965	100544	120123
-30°C	-20°F	42701	52426	62151
-20°C	-4°F	23458	28491	33524
-10°C	14°F	13366	16068	18770
0°C	32°F	7871	9370	10869
10°C	50°F	4771	5640	6508
20°C	68°F	2981	3500	4018
30°C	86°F	1915	2232	2550
40°C	104°F	1260	1460	1660
50°C	122°F	848.8	977.1	1105
60°C	140°F	584.1	668.7	753.4
70°C	158°F	410.3	467.2	524.2
80°C	176°F	293.7	332.7	371.7
90°C	194°F	213.9	241.0	268.2
100°C	212°F	158.1	177.4	196.8
110°C	?	118.8	132.6	146.5
120°C	?	90.40	100.6	110.8
130°C	?	69.48	77.29	85.11
140°C	?	53.96	60.13	66.29
150°C	?	42.43	47.31	52.20

SHIFT SOLENOID "A" AND "B" NORMALLY OPEN

SHIFT SOLENOID "A" = 8678638 (BLUE)

SHIFT SOLENOID "B" = 8678639 (RED)

SOLENOID	A	B
1ST GEAR	ON	OFF
2ND GEAR	OFF	OFF
3RD GEAR	OFF	ON
4TH GEAR	ON	ON