



CODE 14

COOLANT TEMPERATURE SENSOR CIRCUIT (HIGH TEMPERATURE INDICATED) 2.5L "P" SERIES (TBI)

Circuit Description:

The coolant temperature sensor uses a thermistor to control the signal voltage to the ECM. The ECM applies a voltage on CKT 410 to the sensor. When the engine is cold, the sensor (thermistor) resistance is high, therefore, the ECM will see high signal voltage.

As the engine warms, the sensor resistance becomes less, and the voltage drops. At normal engine operating temperature, the voltage will measure about 1.5 to 2.0 volts at the ECM terminal "B8".

Coolant temperature is one of the inputs used to control:

- Fuel delivery
- Electronic Spark Timing (EST)
- Cooling Fan
- Converter Clutch (TCC)
- Idle (IAC)

Test Description: Numbers below refer to circled numbers on the diagnostic chart.

1. Checks to see if code was set as result of hard failure or intermittent condition.

Code 14 will set if:

- Signal voltage indicates a coolant temperature above 135°C (275°F) for 3 seconds.
2. This test simulates conditions for a Code 15. If the ECM recognizes the open circuit (high voltage), and displays a low temperature, the ECM and wiring are OK.

Diagnostic Aids:

A "Scan" tool reads engine temperature in degrees centigrade.

After the engine is started, the temperature should rise steadily to about 90°, then stabilize, when the thermostat opens.

If the engine has been allowed to cool to an ambient temperature (overnight), coolant and MAT temperature may be checked with a "Scan" tool and should read close to each other.

When a Code 14 is set, the ECM will turn "ON" the engine cooling fan.

A Code 14 will result if CKT 410 is shorted to ground.

If Code 14 is intermittent, refer to Section "B".

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1 DOES "SCAN" DISPLAY 130°C OR HOTTER?

YES

NO

2 • DISCONNECT SENSOR.
 "SCAN" SHOULD DISPLAY TEMP. BELOW -30°C.
 DOES IT?

CODE 14 IS INTERMITTENT. IF NO
 ADDITIONAL CODES WERE STORED, REFER
 TO "DIAGNOSTIC AIDS" ON FACING PAGE.

YES

NO

FAULTY SENSOR.

CKT 410 SHORTED TO GROUND.
 OR
 CKT 410 SHORTED TO SENSOR GROUND CIRCUIT.
 OR
 FAULTY ECM.

DIAGNOSTIC AID

COOLANT SENSOR		
TEMPERATURE TO RESISTANCE VALUES (APPROXIMATE)		
°F	°C	OHMS
210	100	185
160	70	450
100	38	1,800
70	20	3,400
40	4	7,500
20	-7	13,500
0	-18	25,000
-40	-40	100,700

CLEAR CODES AND CONFIRM "CLOSED LOOP" OPERATION AND NO "SERVICE ENGINE SOON" LIGHT.