



## CODE 34

### MANIFOLD ABSOLUTE PRESSURE (MAP) SENSOR CIRCUIT (SIGNAL VOLTAGE LOW - HIGH VACUUM) 2.5L "P" SERIES (TBI)

#### Circuit Description:

The manifold absolute pressure sensor (MAP) responds to changes in manifold pressure (vacuum). The ECM receives this information as a signal voltage that will vary from about 1 to 1.5 volts at closed throttle idle, to 4 - 4.5 volts at wide open throttle.

If the MAP sensor fails, the ECM will substitute a fixed MAP value and use the throttle position sensor (TPS) to control fuel delivery.

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

- This step determines if Code 34 is the result of a hard failure or an intermittent condition. A Code 34 will set when:
  - MAP signal voltage is too low.
  - The ignition is "ON".
- Jumpering harness terminals "B" to "C", 5 volt to signal, will determine if the sensor is at fault, or if there is a problem with the ECM or wiring.
- The "Scan" tool may not display 12 volts. The important thing is that the ECM recognizes the voltage as more than 4 volts, indicating that the ECM and CKT 432 are OK.

#### Diagnostic Aids:

With the ignition "ON", and the engine stopped, the manifold pressure is equal to atmospheric pressure and the signal voltage will be high. This information is used by the ECM as an indication of vehicle altitude and is referred to as BARO. Comparison of the BARO reading with a known good vehicle with the same sensor is a good way to check accuracy of a "suspect" sensor. Readings should be the same  $\pm .4$  volt.

A Code 34 will result if CKTs 416 or 432 are open or shorted to ground.

If CKT 416 is open or shorted to ground, there may also be a stored Code 22.

If Code 34 is intermittent, refer to Section "B".

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### MANIFOLD ABSOLUTE PRESSURE (MAP) SENSOR CIRCUIT (SIGNAL VOLTAGE LOW - HIGH VACUUM) 2.5L "P" SERIES (TBI)

1 • ENGINE IDLING.  
DOES "SCAN" DISPLAY MAP BELOW .25 VOLTS?

YES

NO

2 • IGNITION "OFF".  
• DISCONNECT SENSOR ELECTRICAL CONNECTOR.  
• JUMPER HARNESS TERMINALS "B" TO "C".  
• IGNITION "ON".  
• MAP VOLTAGE SHOULD READ OVER 4 VOLTS.  
DOES IT?

CODE 34 IS INTERMITTENT.  
IF NO ADDITIONAL CODES WERE  
STORED, REFER TO DIAGNOSTIC  
AIDS ON FACING PAGE.

NO

YES

3 • IGNITION "OFF".  
• REMOVE JUMPER WIRE.  
• PROBE TERMINAL "B" (CKT 432) WITH A  
TEST LIGHT TO 12 VOLTS.  
• IGNITION "ON".  
• "SCAN" SHOULD READ OVER 4 VOLTS.  
DOES IT?

FAULTY CONNECTION  
OR SENSOR.

YES

NO

CKT 416 OPEN OR SHORTED TO  
GROUND OR FAULTY ECM.

CIRCUIT 432 OPEN OR SHORTED TO  
GROUND OR FAULTY ECM.

#### IGNITION "ON" ENGINE STOPPED VOLTAGES

ALTITUDE		VOLTAGE RANGE
Meters	Feet	
Below 305	Below 1,000	3.8---5.5V
305--- 610	1,000--2,000	3.6---5.3V
610--- 914	2,000--3,000	3.5---5.1V
914--1219	3,000--4,000	3.3---5.0V
1219--1524	4,000--5,000	3.2---4.8V
1524--1829	5,000--6,000	3.0---4.6V
1829--2133	6,000--7,000	2.9---4.5V
2133--2438	7,000--8,000	2.8---4.3V
2438--2743	8,000--9,000	2.6---4.2V
2743--3048	9,000--10,000	2.5---4.0V

LOW ALTITUDE = HIGH PRESSURE = HIGH VOLTAGE