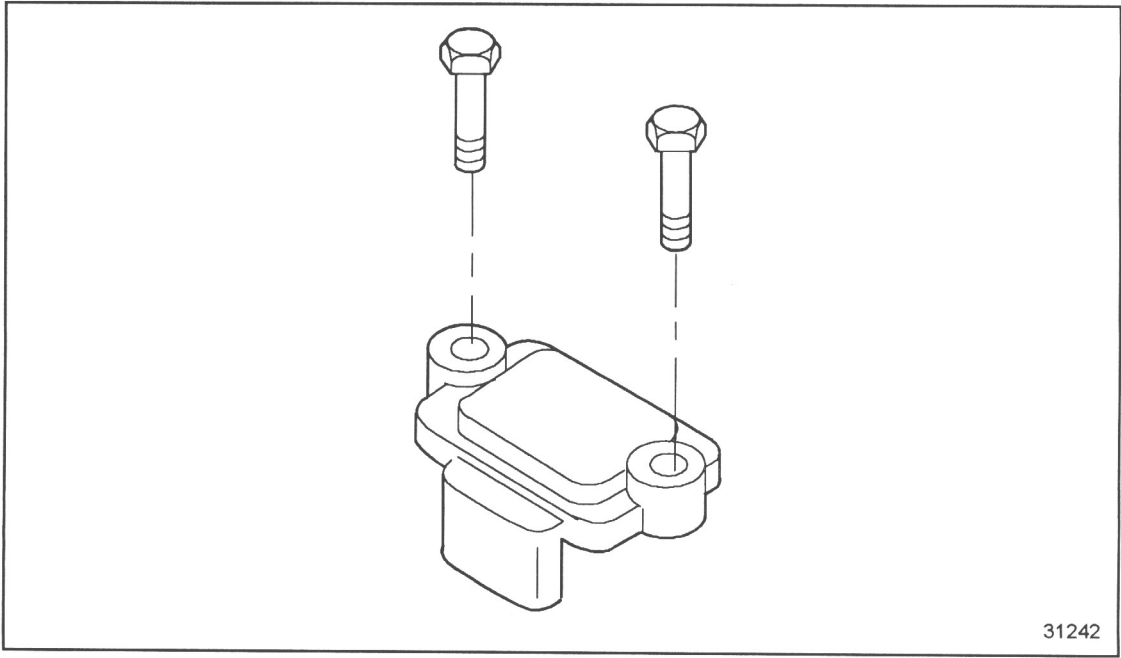


34 FLASH CODE 34 – TBS LOW

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31242

Figure 34-1 Turbo Boost Sensor

34.1 DESCRIPTION OF FLASH CODE 34

Flash Code 34 indicates that the engine Turbo Boost Sensor (TBS), see Figure 34-1, input to the ECM has dropped below 5% (normally < 0.25 volts) of the sensor supply voltage.

This diagnostic condition is typically:

- Open sensor signal circuit
- Open sensor +5 volt supply circuit
- Sensor signal is shorted to sensor return circuit or to ground
- Sensor +5 volt supply is shorted to the sensor return circuit or ground

34.2 SAE J1587 EQUIVALENT CODE FOR FLASH CODE 34

The SAE J1587 equivalent code for Flash Code 34 is p 102 4.

34.3 TROUBLESHOOTING FLASH CODE 34

The following procedure will troubleshoot Flash Code 34.

34.3.1 Multiple Code Check

Perform the following steps to check for multiple codes.

1. Plug the diagnostic data reader (DDR) into the diagnostic data link (DDL) connector.
2. Turn vehicle ignition switch ON.
3. Read active codes.
 - [a] If code 102/4 was logged and there are no other logged codes, refer to section 34.3.2.
 - [b] If code 102/4 and any of the following codes 72/3 or 4, 73/3 or 4, 94/3 or 4, 100/3 or 4, 101/3 or 4, 110/3 or 4, 174/3 or 4, 175/3 or 4, were logged, refer to section 90.1.
 - [c] If code 102/4 was logged and none of the following codes 72/3 or 4, 73/3 or 4, 94/3 or 4, 100/3 or 4, 101/3 or 4, 110/3 or 4, 174/3 or 4, 175/3 or 4, were logged, refer to section 34.3.2.

34.3.2 Sensor Check

Perform the following steps to check the sensor.

1. Turn vehicle ignition OFF.
2. Disconnect TBS connector.
3. Install a jumper wire between sockets B and C of the TBS harness connector. See Figure 34-2.
4. Turn ignition ON.
5. Start engine and run until either the Check Engine Light is on, or until the engine has been running at least one minute at greater than 1000 r/min.
6. Read logged codes.
 - [a] If active code 102/4 and any other codes are logged, refer to section 34.3.4.
 - [b] If active code 102/3 and any other codes except 102/4 are logged, refer to section 34.3.3.

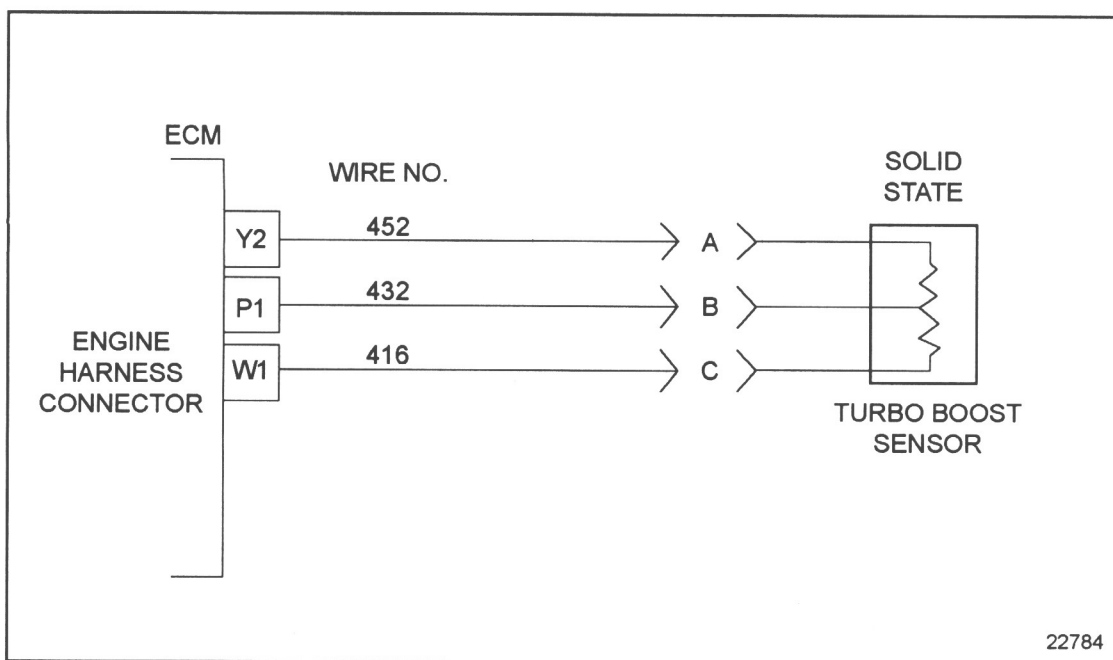


Figure 34-2 Turbo Boost Sensor Schematic

34.3.3 Check Turbo Boost Sensor Connectors

Perform the following steps to check the TBS connector.

1. Check terminals at the TBS connectors (both the TBS and harness side) for damage: bent, corroded and unseated pins or sockets.
 - [a] If the terminals and connectors are damaged, repair them. Refer to section 34.3.11.
 - [b] If the terminals and connectors are not damaged, replace the TBS. Refer to section 34.3.11.

34.3.4 Check for +5 Volt

Perform the following steps to check for +5 volt.

1. Remove jumper.
2. Turn ignition ON.
3. Measure voltage on TBS harness connector, pin C (red lead) to pin A (black lead).
 - [a] If the voltage measurement is greater than 6 volts, refer to section 34.3.10.
 - [b] If the voltage measurement is between 4 and 6 volts, refer to section 34.3.5.
 - [c] If the voltage measurement is less than 4 volts, refer to section 34.3.8.

34.3.5 Check for Signal Open

Perform the following steps to check for signal open.

1. Turn vehicle ignition OFF.
2. Disconnect the engine harness connector at the ECM.
3. Install a jumper wire between pins A and B of the TBS harness connector. See Figure 34-3.
4. Measure resistance between sockets P1 and Y2 on the engine harness connector.
 - [a] If the resistance measurement is less than or equal to $5\ \Omega$, refer to section 34.3.6.
 - [b] If the resistance measurement is greater than $5\ \Omega$, or open, and the signal line (#432) is open, repair the open. Refer to section 34.3.11.

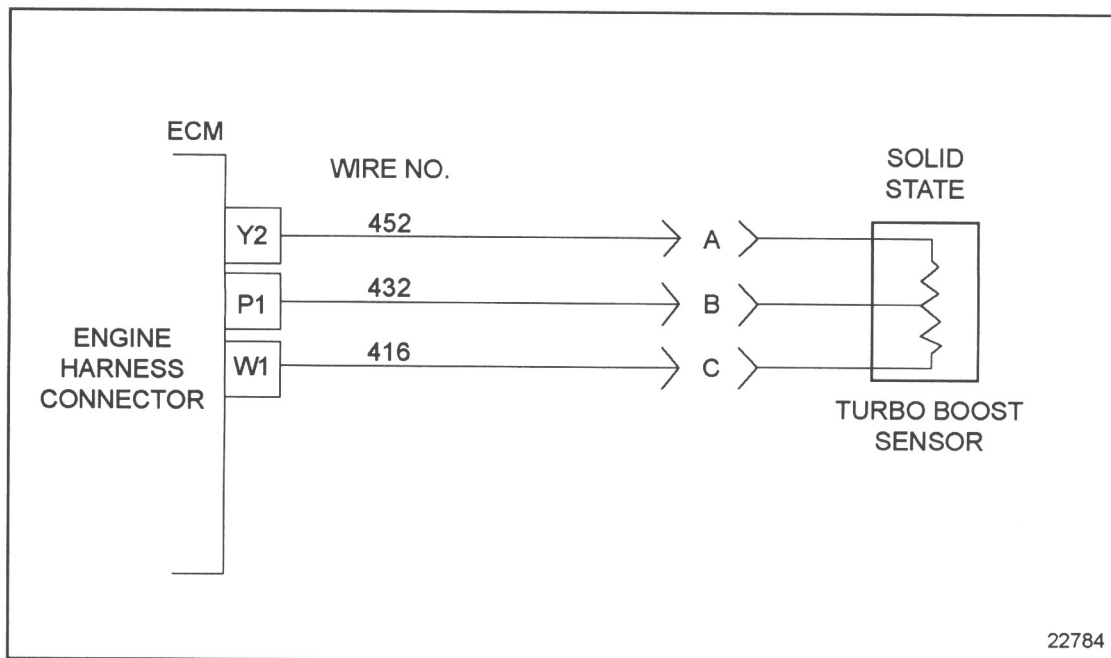


Figure 34-3 Turbo Boost Sensor Schematic

34.3.6 Check for Short

Perform the following steps to check for short.

1. Remove jumper.
2. Measure resistance between pins A and B on the TBS harness connector.
 - [a] If measured resistance between pins A and B is greater than 100 Ω , or open, go to step 3.
 - [b] If measured resistance between pins A and B is less than 100 Ω , the signal line (#432) is shorted to the return line (#452). Repair the short. Refer to section 34.3.11.
3. Also measure resistance between socket B and a good ground.
 - [a] If measured resistance between socket B and a good ground is greater than 100 Ω , or open, refer to section 34.3.7.
 - [b] If measured resistance between socket B and a good ground is less than 100 Ω , the signal line (#432) is shorted to the battery ground. Repair the short and refer to section 34.3.11.

34.3.7 Check ECM Connectors

Perform the following steps to check the ECM connectors.

1. Check terminals at the ECM harness connector (both ECM and harness side) for damage: bent, corroded, and unseated pins or sockets. See Figure 34-4.
 - [a] If terminals and connectors are damaged, repair them and refer to section 34.3.11.
 - [b] If terminals and connectors are not damaged, install a test ECM. Refer to section 34.3.11.

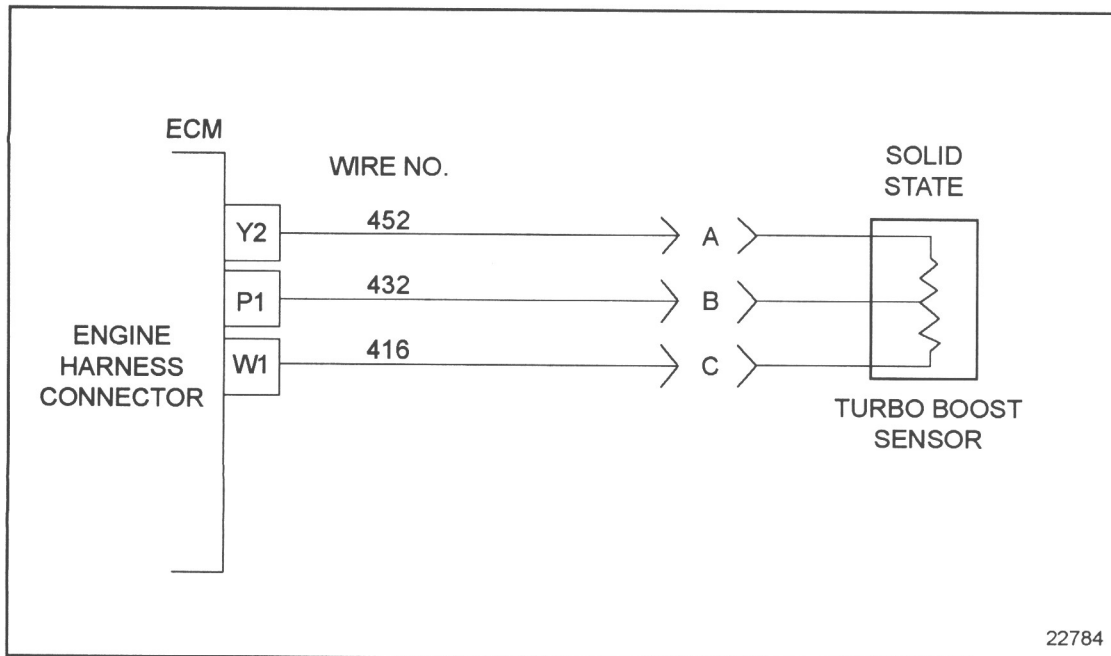


Figure 34-4 Engine Harness Connector to Turbo Boost Sensor

34.3.8 Check for Open +5 Volt Line

Perform the following steps to check for open +5 volt line.

1. Turn vehicle ignition OFF.
2. Disconnect the engine harness connectors at the ECM.
3. Install a jumper wire between pins A and C of the TBS harness connector. See Figure 34-5.
4. Read resistance between sockets W1 and Y2 on the engine harness connector.
 - [a] If the resistance measurement is less than or equal to $5\ \Omega$, refer to section 34.3.9.
 - [b] If the resistance measurement is greater than $5\ \Omega$, or open, the vehicle +5 volt line (#416) is open. Repair open. Refer to section 34.3.11.

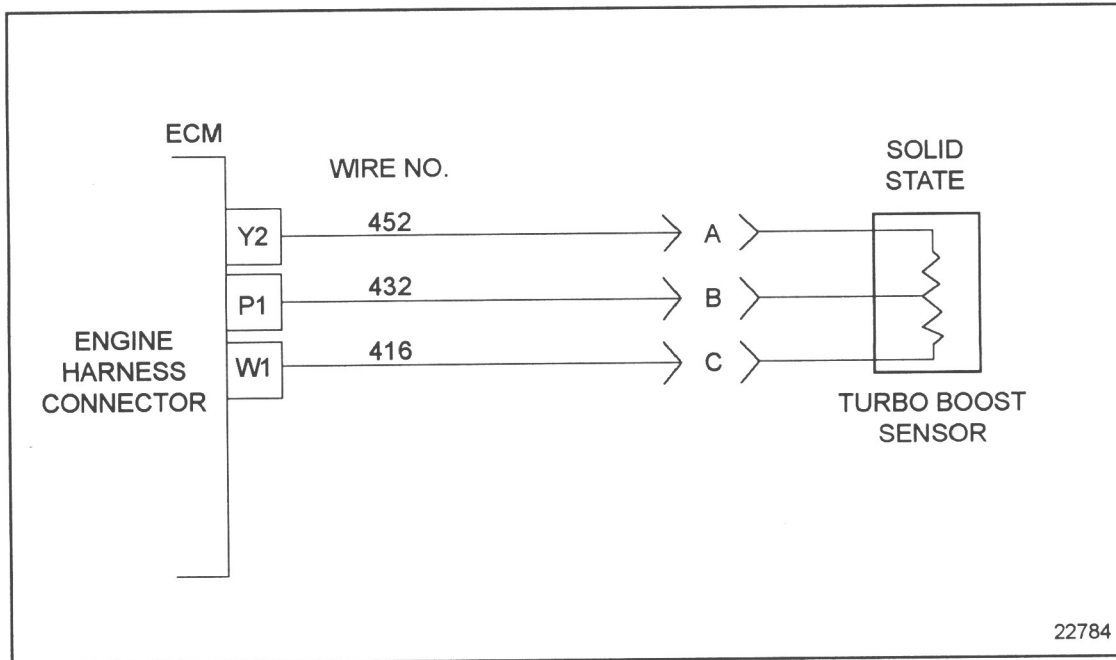


Figure 34-5 5-Way ECM Power Connector

34.3.9 Check for Short

Perform the following steps to check for short.

1. Remove jumper.
2. Measure resistance between pins A and C on the TBS harness connector. See Figure 34-6.
 - [a] If measured resistance between pins A and C is greater than 100 Ω , or open, go to step 3.
 - [b] If measured resistance between pins A and C is less than 100 Ω , the 5 volt supply (#416) is shorted to the return line (#452). Repair the short. Refer to section 34.3.11.
3. Also measure resistance between socket C and a good ground.
 - [a] If measured resistance between socket C and a good ground is greater than 100 Ω , or open, refer to section 34.3.7.
 - [b] If measured resistance between socket C and a good ground is less than 100 Ω , the 5 volt supply (#416) is shorted to the battery ground. Repair the short and refer to section 34.3.11.

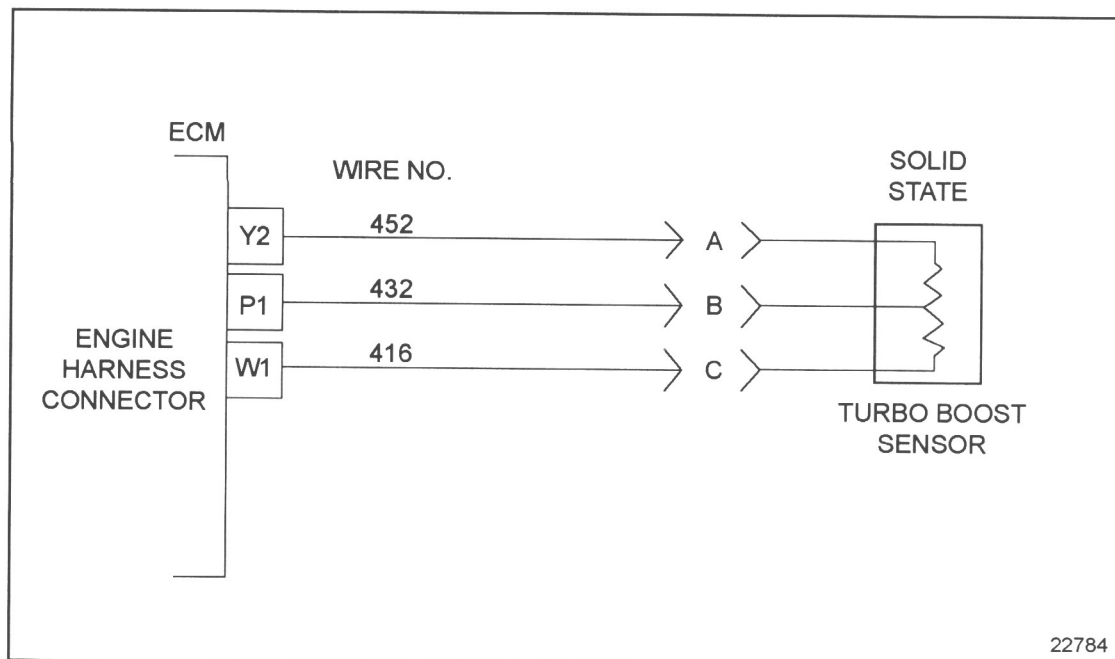


Figure 34-6 Turbo Boost Sensor Schematic

34.3.10 Check for Short to Battery +

Perform the following steps to check for short to battery +.

1. Turn vehicle ignition OFF.
2. Remove both fuses to the ECM.
3. Disconnect the engine harness, vehicle harness, and 5-way power connectors at the ECM.
4. Measure resistance between socket W1 on the engine harness connector and socket B3 of the vehicle harness connector, and between W1 and the 5-way power harness sockets A and C. See Figure 34-7.
 - [a] If measured resistance is less than or equal to 100 Ω , a short exists between sockets where less than 100 Ω was measured. Repair short and reinsert fuses. Refer to section 34.3.11.
 - [b] If the resistance measurement is greater than 100 Ω , or open, refer to section 34.3.7.

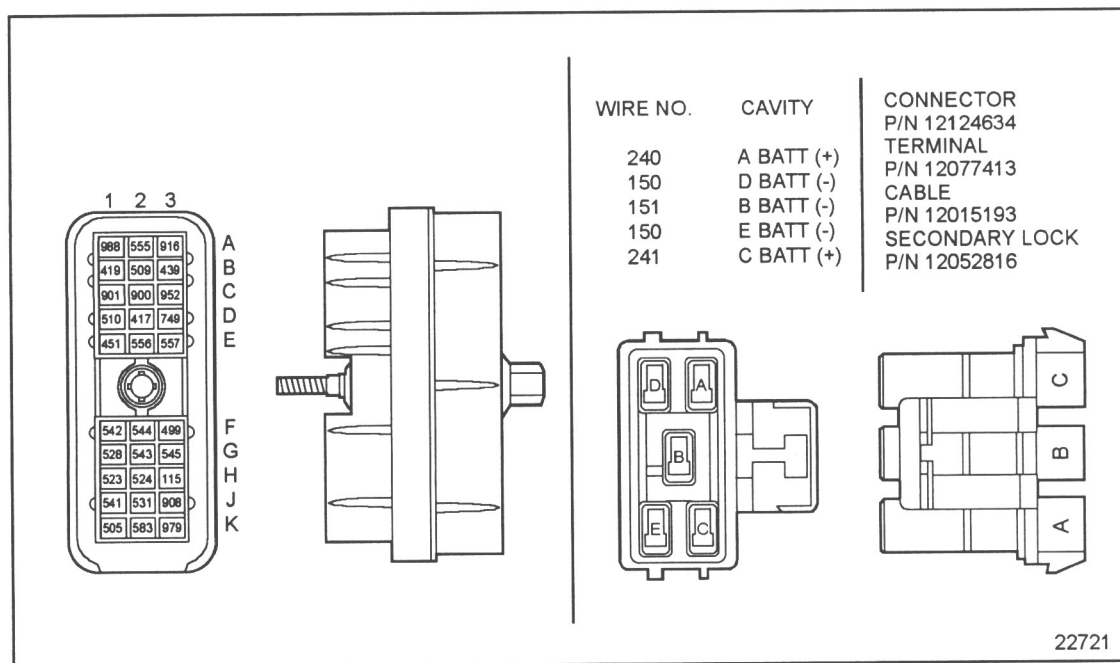


Figure 34-7 ECM Vehicle Interface Harness Connector

34.3.11 Verify Repairs

Perform the following steps to verify repairs.

1. Turn vehicle ignition OFF.
2. Reconnect all connectors.
3. Turn ignition ON.
4. Clear codes.
5. Start and run the engine for one minute.
6. Stop engine.
7. Check DDR for codes.
 - [a] If no codes are logged, no further troubleshooting is required.
 - [b] If code 102/4 and any other codes are logged, all system diagnostics are complete. Please review this section from the first step to find the error. Refer to section 34.3.1.
 - [c] If code 102/4 is not logged and any other codes are logged, refer to section 9.1.