

24 FLASH CODE 24 – FUEL TEMP SENSOR LOW

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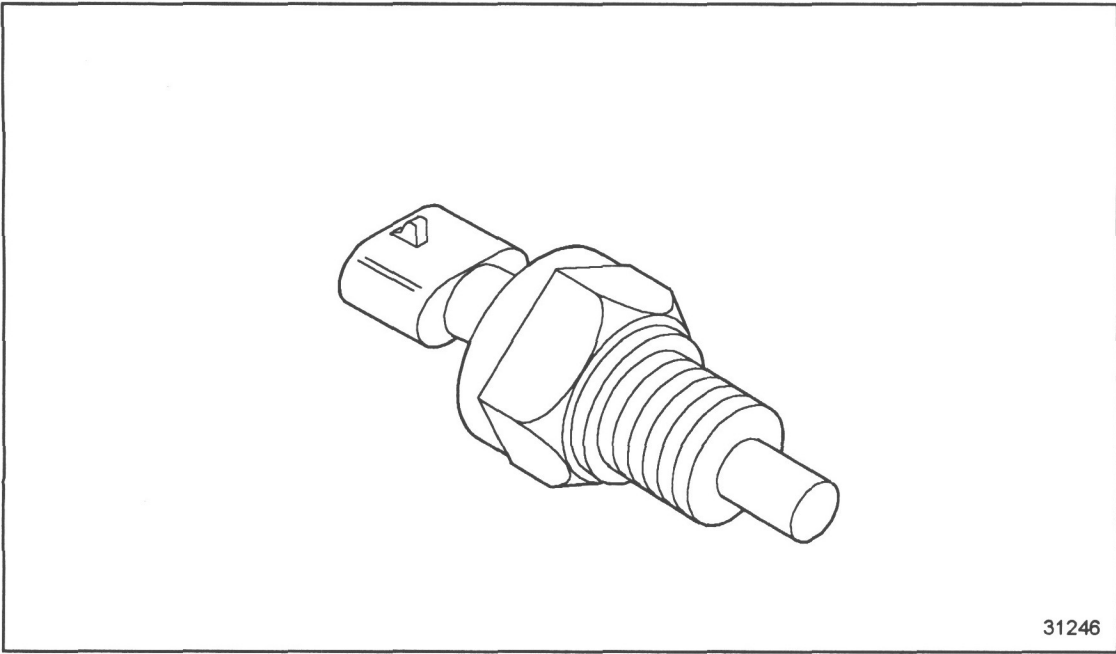


Figure 24-1 Fuel Temperature Sensor

24.1 DESCRIPTION OF FLASH CODE 24

Flash Code 24 indicates that the engine Fuel Temperature Sensor (FTS), see Figure 24-1, input to the ECM has dropped below 5% (normally < 0.25 volts) of the sensor supply voltage.

This diagnostic condition is typically:

- Sensor signal circuit is shorted to sensor return circuit or to ground

24.2 SAE J1587 EQUIVALENT CODE FOR FLASH CODE 24

The SAE J1587 equivalent code for Flash Code 24 is p 174 4, fuel temperature circuit low.

24.3 TROUBLESHOOTING FLASH CODE 24

The following procedure will troubleshoot Flash Code 24.

24.3.1 Multiple Code Check

Perform the following steps to check for multiple codes.

1. Turn ignition ON.
2. Plug in DDR.
3. Read active codes.
 - [a] If active code 174/4 and no other active codes are logged, refer to section 24.3.2.
 - [b] If any or all of the following codes are logged, 110/3, 175/3, 174/3, or 102/3, refer to section 91.2.
 - [c] If codes other than the above are logged, refer to section 24.3.2.

24.3.2 Sensor Check

Perform the following steps to check the sensor:

1. Turn ignition OFF.
2. Disconnect the FTS connector.
3. Start and run engine for eight minutes.
4. Read active codes with engine still running.
 - [a] If code 174/4 and any other codes are logged, refer to section 24.3.4.
 - [b] If code 174/3 and any other codes except 174/4 are logged, refer to section 24.3.3.

24.3.3 Check Fuel Temperature Sensor Connectors

Perform the following steps to check the FTS connectors:

1. Check terminals at the FTS connector (both sensor and harness side) for bent, corroded, and unseated pins or sockets. See Figure 24-2.
 - [a] If terminals and connectors are damaged, repair them. Refer to section 24.3.6.
 - [b] If terminals and connectors are not damaged, replace the FTS. Refer to section 24.3.6.

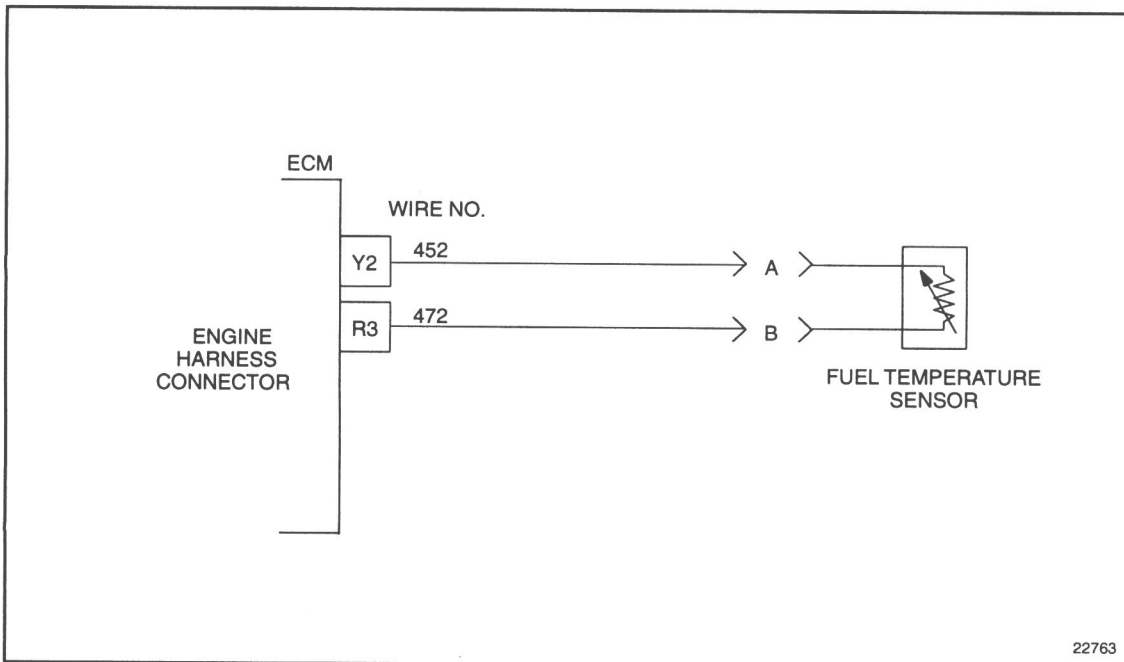


Figure 24-2 Fuel Temperature Sensor

24.3.4 Check for Short

Perform the following steps to check for a short:

1. Turn ignition OFF.
2. Disconnect the engine harness connector at the ECM.
3. Measure resistance between sockets R3 and Y2 on the engine harness connector. See Figure 24-3.
4. Measure resistance between socket R3 and a good ground (battery ground and chassis ground).
 - [a] If resistance between sockets R3 and Y2, or R3 and battery ground, is less than or equal to 10,000 Ω , the signal line (#472) is shorted to the return line (#452) or battery ground. Repair short. Refer to section 24.3.6.
 - [b] If resistance between sockets R3 and Y2 is greater than 10,000 Ω or open, and resistance between socket B and a good ground is greater than 10,000 Ω or open, refer to section 24.3.5.

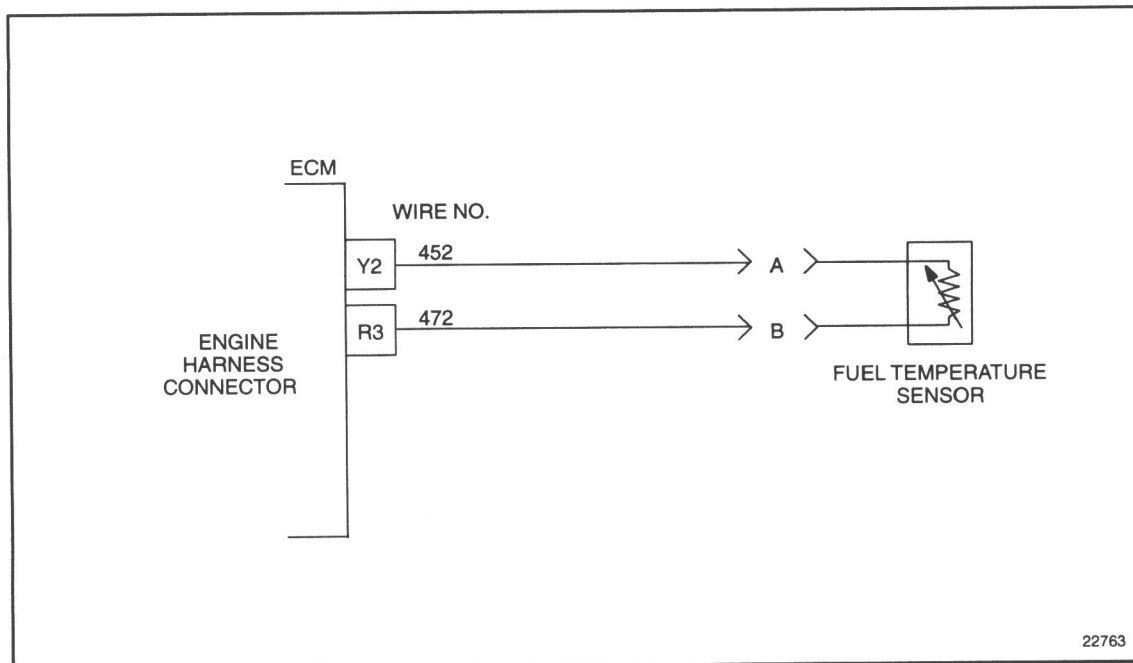
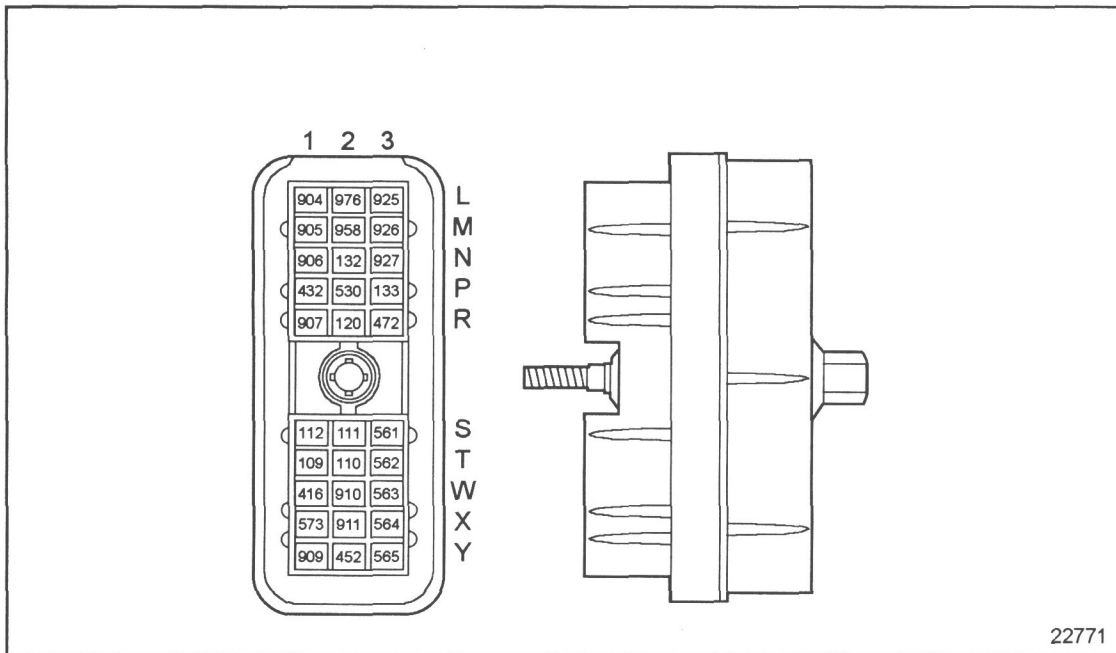


Figure 24-3 Engine Harness Connector

24.3.5 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 bent, corroded, and unseated pins or sockets. See Figure 24-4.
 - [a] If terminals and connectors are damaged, repair them. Refer to section 24.3.6.
 - [b] If terminals and connectors are not damaged, contact Detroit Diesel Technical Service. Refer to section 24.3.6.



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Figure 24-4 ECM Engine Harness Connector

24.3.6 Verify Repairs

Perform the following steps to verify repairs:

1. Turn ignition OFF.
2. Reconnect all connectors.
3. Turn ignition ON.
4. Clear codes with DDR.
5. Start and run the engine for eight minutes.
6. Stop engine.
7. Read active codes.
 - [a] If no codes are logged, troubleshooting is complete.
 - [b] If code 174/4 and any other codes are logged, all system diagnostics are complete. Review this section from the first step to find the error. Refer to section 24.3.1.
 - [c] If code 174/4 is not logged, but other codes are logged, refer to section 9.1.

