P2033: Exhaust Gas Temperature EGT Sensor Circuit High Bank 1 Sensor 2

OVERVIEW
Severity
:
High
DIY Difficulty Level
:
Advanced
Repair Cost
:
$50-$1550
Can I Still Drive?
:
No

What Does The P2033 Code Mean?

This diagnostic trouble code (DTC) P2033 refers to the condition of the EGT (exhaust gas temperature) sensor located in the “up” pipe forward of the catalytic converter. Its sole purpose in life is to protect the converter from damage due to excessive heat. This code means that the circuit has a high voltage condition.

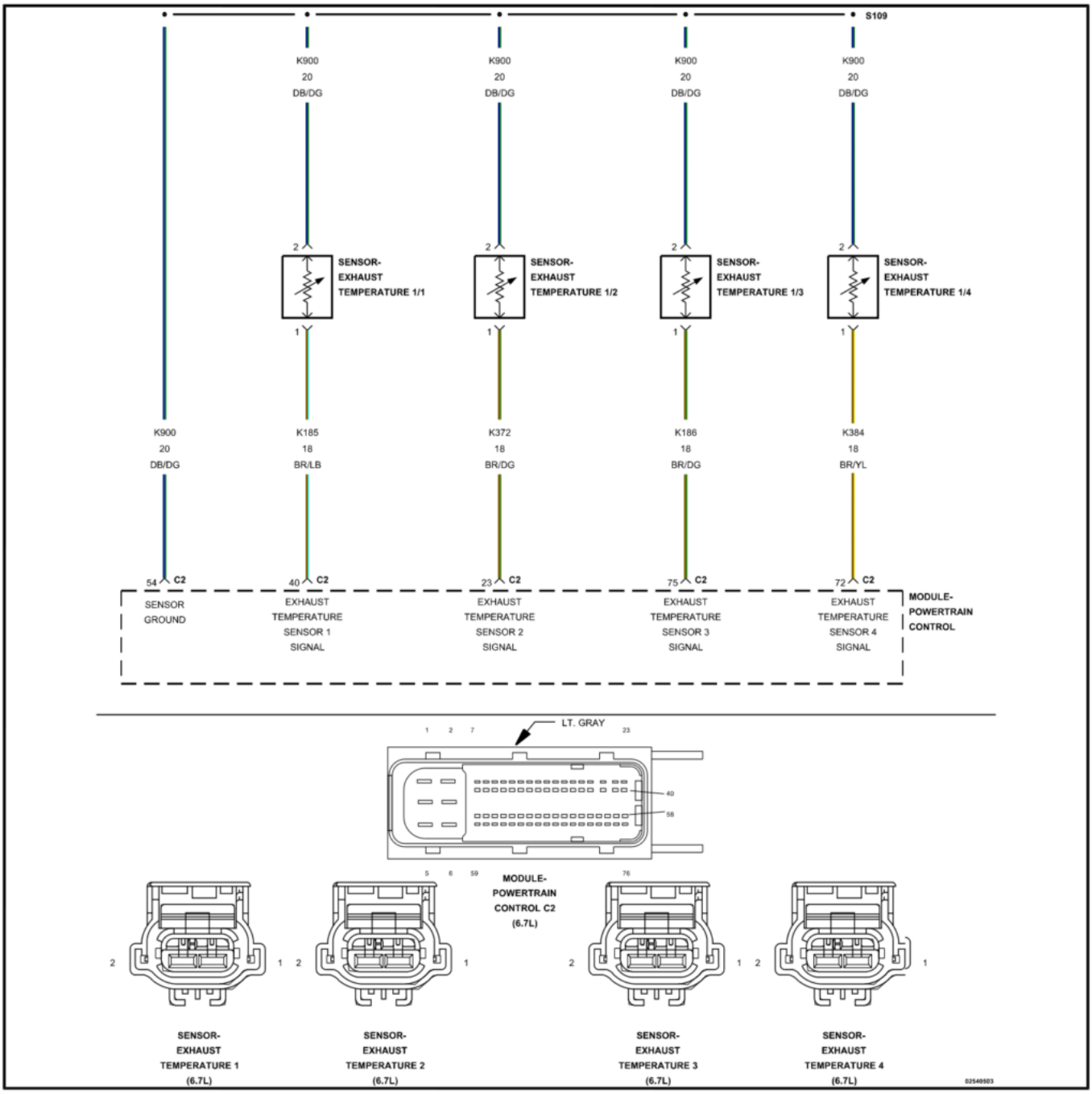
Code P2032 is a similar code which states that the circuit shows “low” voltage. Both relate to the condition of the sensor and the correction is the same for both. This P2033 DTC refers to Bank #1 (which is the side of the engine that contains cylinder #1). The DTC P2036is basically identical, however it is for bank 2.

An EGT sensor is found on most late model gas or diesel engines. It’s nothing more than a heat sensitive resistor that converts the temperature of the exhaust into a voltage signal to the computer. It receives a 5-volt signal from the computer through one wire while the second wire is ground.

The higher the exhaust temperature the less resistance to ground resulting in a higher voltage — conversely, the lower the temperature the more the resistance resulting in lower voltage. If the engine senses a high voltage, the computer will vary the engine’s timing or fuel ratio to keep the temperature in acceptable ranges within the converter.

In a diesel, the EGT is used to determine the timing of regeneration of the PDF (diesel particulate filter) based on the temperature rise.

If a catless up pipe has been installed along with the removal of the catalytic converter, there is normally no provision for the EGT, or if there is it won’t function correctly without the back pressure. This will set the code.



P2033 wiring diagram

What Are The Symptoms Of The P2033 Code?

The check engine light will illuminate and the computer will have set the code P2033. No other symptoms will be readily recognizable.

What Are The Potential Causes Of The P2033 Code?

The causes for this DTC may include:

- Check for loose or corroded connectors or terminals, which is often the case

- Broken wires or missing insulation may be causing a short directly to ground
- The sensor may have failed
- A catback exhaust system without EGT provisions installed
- It’s possible, although not probable, that the computer has failed

How Can You Fix The P2033 Code?

- Raise the vehicle and locate the sensor. Its between the exhaust manifold and the converter or, in the case of a diesel, before the Diesel Particulate Filter (DPF). It looks different from the oxygen sensors in that is just a plug with two wires. A vehicle with a turbo will have the sensor next to the turbo exhaust input.
- Check the connectors for any abnormality such as corrosion or loose terminals. Follow the pigtail up to its connector and check that one as well.
- Look for signs of missing insulation or bare wires that may be shorting to ground.
- Disconnect the upward connector and remove the EGT sensor. Check the resistance with an ohmmeter. Probe both terminals in the connector. A good EGT will have about 150 ohms. If there is very little resistance — below 50 ohms replace the sensor.
- Use a hair dryer or heat gun and heat the sensor while you watch the ohmmeter. The resistance should drop as the sensor is heated and rise as it cools. If not, replace it.
- If all was good to this point, turn the key on and measure the voltage at the engine side of the pigtail. There should be 5 volts at the connector. If not replace the computer.

Another reason for this code to set is if the catalytic converter has been replaced in favor of a catback system. In most states this is an illegal procedure punishable by a large fine if caught. It’s advisable to check local and state laws concerning the removal of this system since it allows uncontrolled emissions into the atmosphere. This may work, however it is everyone’s obligation to do our part to keep our atmosphere clean for future generations.

Until this is repaired the code can be reset by purchasing a 2.2 ohm resistor for pocket change at any electronic store. Simply dispose of the EGT sensor and plug the resistor into the engine side electrical connector. Wrap it with tape and the computer will be satisfied that the EGT is operating properly.

Reference Sources

P2033 Exhaust Gas Temperature EGT Sensor Circuit High Bank 1 Sensor 2, OBD-Codes.