P0465: PURGE FLOW SENSOR CIRCUIT MALFUNCTION

OVERVIEW

Severity	:	Medium
DIY Difficulty Level	:	Intermediate
Repair Cost	:	**$150-$300**
Can I Still Drive?	:	**Yes**

What Does The P0465 Code Mean?

The Purge Flow Sensor (PFS) is usually found mounted in the evaporative fuel system, also known as the charcoal canister, close to the fuel tank or possibly even in the top of the fuel tank / fuel pump module. The PFS converts the EVAP system pressure into an electrical signal for the Powertrain Control Module (PCM).

The PCM receives this voltage signal to determine how much fuel it will put into the engine along with the fuel entering the intake manifold from the EVAP system. This code is set if this input does not match normal engine operating conditions stored in the PCM's memory, even for a second, as this diagnostic trouble code demonstrates. It also looks at the voltage signal from the PFS sensor to determine if it is correct at initial Key On.

P0465 could have been set because of mechanical (typically EVAP system mechanical issues) or electrical (PFS sensor circuit) issues. These cannot be overlooked in the troubleshooting stage, especially when dealing with an intermittent problem.

Troubleshooting steps may vary depending upon manufacturer, type of PFS sensor and wire colors.

What Are The Symptoms Of The P0465 Code?

Symptoms of a P0465 engine code may include:

- Malfunction Indicator Lamp (MIL) illuminated

- Decrease in fuel economy

What Are The Potential Causes Of The P0465 Code?

Typically the causes for this code to set are:

- Open in the signal circuit to the PFS sensor – possible
- Short to voltage in the signal circuit to the PFS sensor – possible
- Short to ground in the signal circuit to the PFS sensor – possible
- Open in power or ground at PFS sensor – possible
- Failed PFS Sensor – likely
- Failed PCM – unlikely

How Can You Fix The P0465 Code?

A good starting point is always a technical service bulletin (TSB) search for your particular vehicle. The vehicle manufacturer may have a PCM flash/reprogram to cover this issue, and it pays to check on this before you find you've gone down a long/wrong path.

Next, locate the purge flow sensor on your particular vehicle. This sensor is usually found mounted in the evaporative fuel system, also known as the charcoal canister, close to the fuel tank or possibly even in the top of the fuel tank / fuel pump module. Once located, visually inspect the connector and wiring. Look for scraping, rubbing, bare wires, burn spots or melted plastic. Pull the connector apart and carefully inspect the terminals (the metal parts) inside the connector. See if they look burned or have a green tint indicating corrosion. Use electrical contact cleaner and a plastic bristle brush if cleaning of the terminals is needed. Let dry and apply electrical grease where the terminals contact.

If you have a scan tool, clear the diagnostic trouble codes from memory, and see if P0465 code returns. If it does not, then the connections were most likely your problem.

If the P0465 code does return, we will need to test the PFS sensor and its associated circuits. With the Key Off, disconnect the electrical connector at the PFS sensor. Connect a Digital Voltmeter black lead to the ground terminal at the PFS sensor wiring harness connector. Connect the red lead of the Digital Voltmeter to the power terminal at the PFS sensor wiring harness connector. Turn Key On Engine Off. Check manufacturer's specifications; voltmeter should read either 12 volts or 5 volts. If not, repair the power or ground wire, or replace the PCM.

If the prior test passed, we will need to test the signal wire. With the connector still disconnected, move the red lead of the voltmeter from the power wire terminal to the signal wire terminal. The voltmeter should now read 5 volts. If not, repair the signal wire, or replace the PCM.

If all prior tests have passed and you continue to get a P0465, this would most likely indicate a

failed PFS sensor, although a failed PCM could not be ruled out until the PFS sensor had been replaced. If unsure, seek assistance from a trained automotive diagnostician. PCMs must be programmed, or calibrated to the vehicle in order to be installed correctly.

Severity Description

Severity depends upon the failure. If a mechanical failure; severe. If an electrical failure, not as severe, as the PCM can compensate adequately for it.

Reference Sources

P0465 Purge Flow Sensor Circuit Malfunction, OBD-Codes.