

P0230: FUEL PUMP PRIMARY (CONTROL) CIRCUIT MALFUNCTION

OVERVIEW

Severity	:	<div><div>Medium</div></div>
DIY Difficulty Level	:	<div><div>Intermediate</div></div>
Repair Cost	:	\$400-\$600
Can I Still Drive?	:	Yes (Short-term only)

What Does The P0230 Code Mean?

The fuel pump is activated by a PCM-controlled relay. Just as the name implies, a “relay” permits the transmittal of higher amperage current to the fuel pump without that current having to travel through the PCM (Powertrain Control Module).

For obvious reasons it’s better to not have higher amperage current anywhere near the PCM. Higher amperage current creates more heat but also in the event of a failure, can cause a PCM failure. This principal applies to any relay. The higher amperages are kept under the hood, away from sensitive areas

The relay contains basically two sides. The “control” side which is basically a coil and the “switch” side which is a set of electrical contacts. The control side (or coil side) is the low amp side. It’s fed a switched ignition feed (12 volts with key on) and a ground.

The ground circuit is activated by the PCM driver when appropriate. When the PCM fuel pump driver activates the relay coil, the coil acts as an electromagnet that pulls the electrical contacts closed which completes the fuel pump circuit. This closed switch allows voltage to flow on the fuel pump activation circuit, activating the pump. Whenever the key is turned on, the PCM grounds the fuel pump circuit for a few seconds, activating the fuel pump and pressurizing the system. The fuel pump won’t be activated again until the PCM sees an RPM signal.

What Are The Symptoms Of The P0230 Code?

- MIL (malfunction indicator lamp) illumination
- No start condition

- No fuel pump operation
- Fuel pump runs all the time with ignition on

What Are The Potential Causes Of The P0230 Code?

Potential causes of a P0230 code include:

- Short to ground on control circuit
- Fuel pump control circuit open
- Short to battery voltage on control circuit
- Harness chafing causing one of above conditions
- Bad relay
- Bad PCM

How Can You Fix The P0230 Code?

Command the fuel pump on and off by using a scan tool or simply turning the ignition key on and off without starting the engine. If the fuel pump activates and deactivates, then start the vehicle and measure the current on the control (ground) circuit for a couple of minutes. It should be less than an amp and stay less than an amp.

If it doesn't then replacing the relay is a good idea at this point. If the fuel pump won't activate and deactivate, then remove the relay and visually check for discoloration due to heat or loose terminals. If okay, install a test light between the control circuit ignition feed and ground driver terminals (If you're not sure, don't attempt).

The test light should illuminate when the key is on or the fuel pump is commanded on. If it doesn't, then make sure there is voltage on one side of the coil (switched ignition feed). If voltage is present repair the open or short on the control ground circuit.

Reference Sources

[Diagnostic Trouble Code \(DTC\) Charts and Descriptions for P0230](#) - Page 49.