P0463: FUEL LEVEL SENSOR CIRCUIT HIGH INPUT

OVERVIEW

Severity	:	Medium
DIY Difficulty Level	:	Intermediate
Repair Cost	:	**$200-$400**
Can I Still Drive?	:	**Yes**

What Does The P0463 Code Mean?

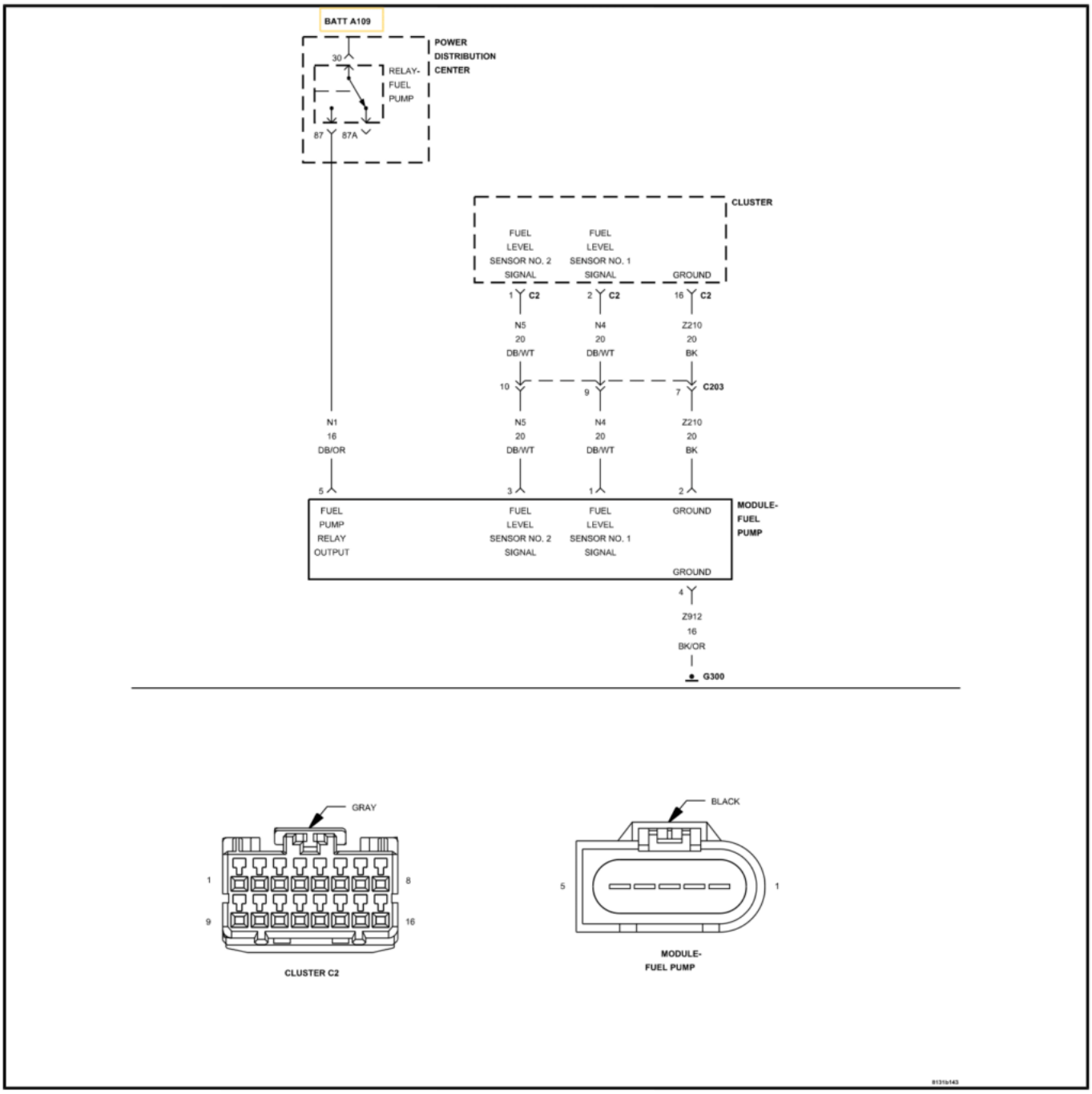
The fuel level sensor (sender) is located in the fuel tank usually integral to the fuel pump module. Usually they cannot be replaced without replacing the fuel pump module, though there are exceptions.

There is a float attached to an arm that travels along a resistor which is grounded to the tank, frame or has a dedicated ground circuit. Voltage is supplied to the sender and the ground path changes according to fuel level. How much voltage depends on the system but 5 volts isn't uncommon.

As the fuel level changes, the float moves the arm and changes the resistance to ground which varies the voltage signal. This signal may travel to a fuel pump computer module or directly to the instrument cluster module.

Depending on the system, the fuel pump computer module may only monitor the resistance to ground and then relay the fuel level information to the instrument panel.

If the fuel level signal to the fuel pump module (or instrument cluster module or PCM (powertrain control module)) goes above 5 volts for a specific amount of time, then the module that is monitoring the fuel level circuit will record this fault code.



P0463 wiring diagram

Related fuel level sensor circuit trouble codes include:

- P0460 Fuel Level Sensor Circuit Malfunction
- P0461 Fuel Level Sensor Circuit Range/Performance
- P0462 Fuel Level Sensor Circuit Low Input
- P0464 Fuel Level Sensor Circuit Intermittent

What Are The Symptoms Of The P0463 Code?

Symptoms of a P0463 DTC may include:

- Mil (Malfunction indicator lamp) illumination
- Fuel level gauge may fluctuate abnormally or read empty or full
- Fuel light may illuminate and sound alarm

What Are The Potential Causes Of The P0463 Code?

Potential causes of a P0463 code include:

- The signal circuit to the fuel sender is open or shorted to B+ (Battery voltage)
- The ground circuit is open, or ground path may have high resistance due to rust or missing ground strap on fuel tank
- Damage to the fuel tank could cause problem in fuel level circuit
- There's an open in the fuel lever sensor's resistor to ground
- Possibly faulty instrument cluster
- Less likely is the possibility that the PCM, BCM, or Fuel pump computer module has failed

How Can You Fix The P0463 Code?

Fuel pump senders normally last the life of the fuel pump. So if you have this code present, do a visual inspection of the fuel tank and wiring harness. Look for damage to the tank indicating impact that may have damaged the fuel pump or sender.

Look for missing ground strap or a rusty ground where the fuel tank is grounded to the frame. Check for damage to the wiring harness connector. Repair as needed. Find out what kind of system you have and verify that voltage to the fuel level sensor is present at the fuel pump wiring harness. If not, repair the open or short in the wiring.

Doing a voltage drop test on the ground circuit can determine if there is a high resistance path in the ground circuit. You can perform this by using a voltmeter and connecting one lead to the battery ground post and the other to the fuel level sensor ground at the tank. Turn the key on (preferably the engine should be running). Ideally it should be 100 millivolts or less (.1 volts).

Anything close to 1 volt indicates a current problem or a developing problem. Repair/clean the fuel level sensor ground as needed. It's not impossible that the instrument cluster has failed internally or on the printed circuit board (if applicable). These are very difficult for the layman to test.

But if you have access to a wiring diagram you may be able to remove the cluster and see the damaged circuit if it's located on the printed circuit board, but otherwise you'll need a scan tool that will communicate with the instrument cluster.

A simple way to test the fuel level circuit is to provide a good ground to the fuel level sensor at the fuel tank connector. With the key on the fuel gauge should go to one extreme or the other. Removing the ground path completely should cause the gauge to do the opposite. If the gauge responds, you know the wiring that supplies voltage and ground to the fuel level sensor is good and that the instrument cluster is likely okay.

The likely suspect would be the fuel level sensor itself. The fuel tank may need removal to gain access to the fuel pump module in the tank. A PCM or BCM (Body control module) failure isn't impossible but highly unlikely. Don't suspect this first.

Reference Sources

Diagnostic Trouble Code (DTC) Charts and Descriptions for P0463 - Page 76.