

P0454: EVAPORATIVE EMISSION CONTROL SYSTEM PRESSURE SENSOR INTERMITTENT

OVERVIEW

Severity	:	<div><div>Medium</div></div>
DIY Difficulty Level	:	<div><div>Intermediate</div></div>
Repair Cost	:	\$200-\$354
Can I Still Drive?	:	Yes

What Does The P0454 Code Mean?

When your OBD-II equipped vehicle exhibits a code P0454, it means that the powertrain control module (PCM) has detected an intermittent signal from the evaporative emissions (EVAP) system pressure sensor circuit.

In an effort to capture fuel vapors before they escape into the atmosphere, the EVAP system utilizes a vented reservoir (usually called a canister) to store excessive fuel vapors until the engine is being operated under the appropriate conditions to burn them effectively.

Fuel storage tank vapors are discharged through the pressure relief valve (in the top of the fuel tank). T

he pressure created when fuel is stored acts as propellant and causes the vapors to vent through a network of metal tubes and rubber hoses; eventually reaching the charcoal storage canister. The canister not only absorbs fuel vapors but also holds them for release at the appropriate time.

The typical EVAP system consists of a charcoal canister, the EVAP pressure sensor, the purge valve/solenoid, the vent control valve/solenoid, and a complex system of metal tubes and rubber hoses that stretches from the fuel tank to the engine compartment.

The purge control valve/solenoid, which is the hub of the EVAP system, is electronically controlled

by the PCM. The purge control valve/solenoid is used to regulate intake vacuum to the EVAP canister so that fuel vapors are drawn into the engine when conditions are ideal for them to be burned as fuel instead of polluting the atmosphere.

EVAP pressure is monitored by the PCM using the EVAP pressure sensor. The EVAP pressure sensor can be difficult to access because it is usually located in the top of the fuel tank and integrated into the fuel pump/fuel level sending unit housing. If the PCM detects that the EVAP system pressure signal is intermittent, a code P0454 will be stored and the malfunction indicator lamp (MIL) may be illuminated.

Related evaporative emission trouble codes include [P0450](#), [P0451](#), [P0452](#), [P0453](#), [P0455](#), [P0456](#), [P0457](#), [P0458](#), and [P0459](#).

What Are The Symptoms Of The P0454 Code?

Symptoms of this code may include:

- In most cases, there will be no symptoms exhibited with a code P0454
- A slight decrease in fuel efficiency
- MIL (malfunction indicator lamp) illumination

What Are The Potential Causes Of The P0454 Code?

Potential causes for this code to set are:

- Defective EVAP pressure sensor
- Clogged fuel tank pressure relief valve
- Open or shorted EVAP pressure sensor wiring or connectors
- Cracked or broken charcoal canister

How Can You Fix The P0454 Code?

If I am faced with diagnosing a code P0454, I know that I will need a diagnostic scanner, a digital volt/ohmmeter, a reliable vehicle information source like All Data DIY, and maybe even a smoke machine.

A visual inspection of EVAP system hoses, lines, electrical harnesses, and connectors is a good place to begin your diagnosis. Pay particular attention to parts that are routed near sharp edges or hot exhaust components. Don't forget to remove the fuel cap and inspect the seal and screw it back on properly.

Next, I like to proceed by connecting the scanner to the vehicle diagnostic port and retrieving all stored codes and freeze frame data. It's a good idea to write this information down because it can be very helpful, especially if this turns out to be an intermittent code.

After that, I like to clear the codes and test-drive the vehicle until it either enters OBD-II readiness mode or the code is reset. EVAP codes will typically require multiple drive cycles (with a failure in each of them) before being reset.

Observe the EVAP pressure sensor signal using the diagnostic stream of the scanner. I know that I have rectified the condition (by tightening or replacing the fuel cap) if system pressure is within manufacturer's recommended specifications,

Before performing a smoke test I would test the EVAP pressure sensor because this is an intermittent pressure sensor circuit code. The location of the EVAP pressure sensor can make it aggravating to test because it is usually located at the top of the fuel storage tank.

After gaining access to the sensor, follow the manufacturer's recommendations for testing and replace the sensor if it fails to comply with specifications.

Unplug all related controllers and test individual circuits with the DVOM if the EVAP pressure sensor complies with manufacturer's specifications. Repair or replace open or shorted circuits as required and retest the system.

Additional diagnostic notes:

- Low or high EVAP pressure may cause a P0454 to be stored
- This code can be caused by electrical or mechanical malfunctions

Reference Sources

[Diagnostic Trouble Code \(DTC\) Charts and Descriptions for P0454](#) - Page 73.