P0452: EVAPORATIVE EMISSION SYSTEM PRESSURE SENSOR/SWITCH LOW

OVERVIEW

Severity	:	Medium
DIY Difficulty Level	:	Intermediate
Repair Cost	:	**$200-$352**
Can I Still Drive?	:	**Yes** (Short-term only)

What Does The P0452 Code Mean?

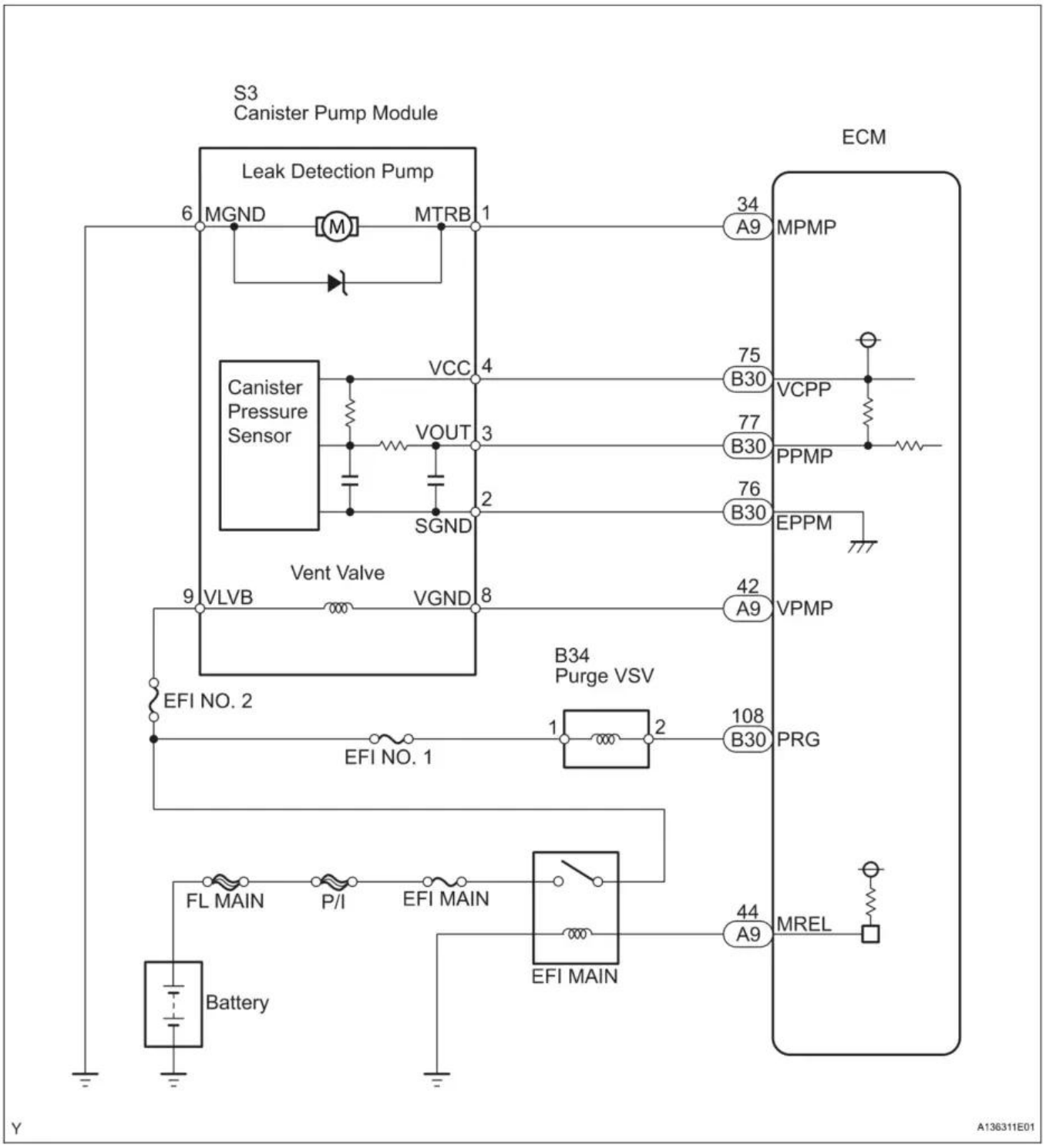
The DTC P0452 is relates to an emission system malfunction. Your PCM or powertrain management computer relies on a fuel tank pressure sensor to detect fluctuations in the tanks internal pressure.

Depending on the make of your car, the sensor could be located in the fuel purge line coming off the fuel module on the top of the fuel tank or in the top of the tank itself.

The PCM has determined that the system pressure is unusually low indicating a problem in the system, not necessarily just at the sensor. This sensor is used primarily for emission control strategy only. Your fuel tank will have a tendency to build fuel vapor pressure when the temperatures are high and a vacuum when under a load.

The sensor sends a voltage to the computer for analysis, the value of the current is dependent on the pressure or vacuum. The code relates to all vehicles, however they differ in the sensor output. For instance, Buick's sensor produces about 0.1 volt with positive pressure in the tank and up to 5 volts with negative pressure, as in a vacuum.

A Honda's sensor increases the voltage signal as positive pressure builds in the tank. Either way, the sensors serve the same purpose. They all convert pressure to a voltage that increases or decreases with pressure or vacuum decay.



P0452 wiring diagram

Related evaporative emission trouble codes include P0450, P0451, P0453, P0454, P0455, P0456, P0457, P0458, and P0459.

What Are The Symptoms Of The P0452 Code?

The only symptom you will notice with a P0452 code is the service engine soon or check engine light will illuminate. In rare cases you may smell a noticeable fuel vapor.

What Are The Potential Causes Of The P0452 Code?

Potential causes for this DTC include:

- Failed fuel tank pressure sensor
- Harness to the sensor has an open or short circuit
- Faulty electrical connection to the FTP sensor
- Cracked or broken vapor line to the vacuum canister
- Cracked or broken positive vapor line to the tank
- Plugged line
- Leaky gasket at the fuel pump module
- Gas cap left loose resulting in a loss of vacuum
- Pinched vapor line

How Can You Fix The P0452 Code?

This problem leaves little to service due to the location of the sensor and the tools necessary to diagnose the problem. The sensor is located on the top of the gas tank in or near the electric fuel pump module.

The first course of action is to check all the technical service bulletins for your car. This is always good practice since they may have recalls. Secondly, you see the type of problems customers are experiencing with this model and the recommended corrective action.

Lastly, most vehicles have a very long warranty on emission control devices such as 100,000 miles, so it would be wise to check your warranty and take advantage of it if available.

In order to access the sensor the fuel tank needs to be removed. This a difficult and somewhat hazardous job better left to a technician with a lift.

Over 75 percent of the time someone didn't take the time to "click" the fuel cap closed. When the fuel cap is loose the tank can't create a vacuum for purging and vapor pressure will not build, thus resulting in low input voltage and the setting of code P0452. Some vehicles are now equipped with a "check fuel cap" light on the dash which informs you to re-tighten your cap.

It is possible to check the vapor hoses coming off the top of the fuel tank from under the vehicle in an effort to find a broken or crimped line. There are three to four lines coming off the top of the tank leading to the driver's side framerail that can be checked. But if they need replacement, the

tank must be lowered.

The technician uses a special diagnostic tool that will test the sensor in the car and all the line and tank pressures, corrected for temperature, humidity and altitude. It will also tell the technician if a vapor line is faulty in any way and if the electrical connections are satisfactory.

Other EVAP DTCs: P0440– P0441– P0442– P0443– P0444– P0445– P0446– P0447– P0448– P0449– P0453– P0455– P0456

Reference Sources

Diagnostic Trouble Code (DTC) Charts and Descriptions for P0452 - Page 72.