P2025: EVAPORATIVE EMISSIONS (EVAP) FUEL VAPOR TEMPERATURE SENSOR RANGE

OVERVIEW

Severity	:	Low
DIY Difficulty Level	:	Intermediate
Repair Cost	:	**$50-$700**
Can I Still Drive?	:	**Yes**

What Does The P2025 Code Mean?

The Evaporative emissions (EVAP) system was introduced to vehicles for a few different reasons. Some of those included but are not limited to: reduced emissions expelled, slightly improved fuel efficiency, containing otherwise wasted fuel vapors. Not to mention consistently recycling unused/unburned fuel, pretty efficient isn't it?

That being said, the EVAP system requires a multitude of sensors, switches, and valves in order to maintain desired emissions. The ECM (Engine Control Module) actively monitors these and adjusts them according to system needs. Just as the name implies, the fuel vapor temperature sensor is used by the ECM to monitor the temperature of those unburned vapors that would otherwise be expelled to the atmosphere.

It is important to note that the EVAP system uses mostly plastic components to deliver the unburned fuel vapors to the engine to be burnt. You can imagine what kind of issues can occur when you expose plastic to the elements 24/7. Especially in particularly harsh winter conditions, these plastic components tend crack/split/break/clog. Food for thought.

The check engine light gets activated with P2025 and associated codes P2024, P2026, P2027, and P2028, when the ECM recognizes one or more electrical values missing and/or outside of a specific range within the EVAP fuel vapor temperature sensor or in one of the circuits involved. Hard to say wether this would be mechanical or electrical, the thing to keep in mind is, the overall health of the

system involved, in this case, the EVAP system, is and always should be the priority.

Code P2025 usually means there is either a mechanical or electrical reason for the sensor to be operating out of range and the ECM recognizes this.

What Are The Symptoms Of The P2025 Code?

Symptoms of a P2025 trouble code may include:

- Failed state/provincial emission test
- CEL (check engine light) on
- Slight decrease in fuel efficiency
- Fuel smell
- Possible abnormal fuel filling symptoms (lengthy fill ups, cannot pull trigger on gas pump fully, etc.)

What Are The Potential Causes Of The P2025 Code?

Causes for this P2025 fuel trim code may include:

- Defective EVAP (Evaporative emissions) fuel vapor temperature sensor
- Obstruction/leak within system causing sensor to perform out of range (mainly on P2025)
- Broken or damaged EVAP fuel vapor temperature sensor wiring harness
- Wire shorting to power
- Excessive resistance within the circuit
- ECM (Engine Control Module) issue
- Pin/connector problem. (corrosion, melting, broken lock tab etc..)

How Can You Fix The P2025 Code?

Like mentioned above, the general health of the EVAP (Evaporative Emissions) system's health is of great importance. Verify that the components involved are free of obstruction and there are no visible cracks in the plastic pipes. It would be a good idea to locate where the EVAP system gets its fresh atmospheric air to introduce into the system to regulate pressure differences.

In some instances, most of the parts used in this system will be located under the vehicle. I'd recommend using wheel ramps rather then a hydraulic jack and stands for their convenience and most importantly the safety benefits.

NOTE: Be careful when disconnecting/manipulating EVAP pipes and hoses. A lot of times they may look healthy until you try to disconnect them and a clip or the entire pipe breaks and now you need to replace/repair something to move further in your diagnostics. Be extremely prudent here.

Test the sensor. From my experience, the ECM uses voltages readings from the EVAP fuel vapor

temperature sensor to monitor temps. That being said, there is most likely a specific pin-out test that can be performed to verify the functionality of the sensor.

Severity Description

As with most EVAP faults, I would say this is low on the severity scale. The entire system was mostly designed to decrease emissions to the atmosphere. Obviously it does a lot more in the meantime but all that being said, really the only thing negatively affected by this fault is the atmosphere. At the moment, I cannot think of any EVAP system problem that would be detrimental to the overall safety of the vehicle. This does NOT mean you can continue to drive the vehicle day in day out without addressing the issue. One problem always leads to another if left unsolved for too long.

Reference Sources

Diagnostic Trouble Code (DTC) Charts and Descriptions for P2025 - Page 130.