

P012E: TURBOCHARGER/SUPERCHARGER INLET PRESSURE SENSOR CIRCUIT INTERMITTENT/ERRATIC (DOWNSTREAM OF THROTTLE VALVE)

OVERVIEW

| | | |
|----------------------|---|------------------------------------|
| Severity | : | <div><div>High</div></div> |
| DIY Difficulty Level | : | <div><div>Intermediate</div></div> |
| Repair Cost | : | \$100-\$400 |
| Can I Still Drive? | : | Yes (Short-term only) |

What Does The P012E Code Mean?

A P012E code indicates some sort of intermittent or erratic malfunction within the Turbo/Supercharger Inlet Pressure Sensor (TCIP) circuit. The turbo/supercharger are responsible for increasing “volumetric efficiency” (amount of air) within the combustion chamber by creating pressure within the intake system.

Generally speaking Turbochargers are exhaust driven and Superchargers are belt driven. The inlet of the turbo/supercharger is where they get their filtered air from the air filter. The inlet sensor works with the ECM (Electronic Control Module) or PCM (Powertrain Control Module) in order to monitor and regulate intake pressure.

The “(Downstream of throttle valve)” indicates what specific inlet sensor has the malfunction and it’s location. The pressure sensor may also incorporate a temperature sensor into it.

This trouble code is closely related to [P012A](#), [P012B](#), [P012C](#), and [P012D](#).

What Are The Symptoms Of The P012E Code?

Symptoms of a P012E engine code may include:

- Vehicle enters limp mode (Fail safe mode)
- Engine noises
- Poor performance
- Engine misfiring
- Stalling
- Poor fuel mileage

What Are The Potential Causes Of The P012E Code?

Causes for this code may be:

- Defective Turbo/supercharger inlet pressure sensor
- Broken or damaged wiring harness
- Problem within general electrical system
- ECM issue
- Pin/connector problem. (i.e. corrosion, overheating etc.)
- Clogged or damaged air filter
- Defective MAP sensor
- MAP sensor circuit malfunction

How Can You Fix The P012E Code?

Be sure to check for technical service bulletins (TSBs) for your vehicle. For example, there is a known issue with some Ford / F150 EcoBoost engines and getting access to a known fix can save you time and money during diagnosis.

Tools

Whenever you are working with electrical systems, some of the basic tools that are a good idea to have are:

- OBD code reader
- Multimeter
- Basic socket set
- Basic ratchet and wrench sets
- Basic screwdriver set
- Rag/shop towels
- Battery terminal cleaner
- Service manual

Safety Tips

- Let engine cool

- Chalk wheels
- Wear PPE (Personal protective equipment)

Basic Step #1

Visually inspect the TCIP and surroundings. Given the nature of these codes, it is highly likely there is some sort of physical problem causing this issue. That being said, check the harness thoroughly because the harness' for these sensors typically run along areas where extremely high temperatures are present. In order to locate which sensor's circuit is malfunctioning refer to "Downstream of Throttle valve".

Downstream meaning after the throttle valve or the side closer towards the intake manifold. The throttle valve is typically mounted to the intake manifold itself. Once you have located the TCIP, follow the wires coming out of it and inspect for any frayed/chafed/cut wires that may be causing an issue. Depending on the location of the sensor on your make and model, you may have enough access to the sensors connector. If so, you can disconnect it and inspect the pins for corrosion.

NOTE: Green color is a good sign that there is corrosion present. Visually inspect all ground straps and look for corroded or loose ground connections. A problem within the general electrical system can and will cause drivability issues, poor mileage among other unrelated problems.

Basic Step #2

Depending on the make and model of your vehicle, there may be a use for the circuit. Fuse boxes can be located just about anywhere in the car but a few good places to start are: under the dash, behind the glove box, under the hood, under a seat etc. Locate fuse and make sure it fits within the slot tightly and that it is not blown.

Basic Tip #3

Check your filter! Visually inspect air filter for signs of clogging or dirtiness. A clogged filter may cause a low pressure condition. So, if the air filter is clogged or showing any signs of damage (i.e. : water intrusion), it should be replaced. This is a cost efficient way of ruling this out because most times, air filters are inexpensive and easy to replace.

NOTE: Check to see if your air filter is cleanable. If so, you may be able to clean your filter instead of replacing the entire assembly.

Basic Step #4

The P012E code may indicate a problem with your MAP sensor and or circuit. If this code is present you will have to verify and diagnose that the MAP sensor and circuits are functioning properly. The troubleshooting process depends heavily on the make and model so you will have to refer to

technical service information for specific steps in ruling the sensor out.

TIP: Make sure to have your multimeter ready here because typically to diagnose a sensor you will have to measure voltage, resistance and sometime amps.

Basic Step #5

If everything checks out at this point, and you still cannot find a malfunction, I would verify the circuit itself. This may include disconnect the ECM or PCM electrical connector so make sure your battery is connected. Basic electrical tests should be performed on the circuit. (i.e. check for continuity, check for short to ground, power etc..). Any kind of open or short will indicate a problem that will need to be repaired. Good luck!

Reference Sources

[Diagnostic Trouble Code \(DTC\) Charts and Descriptions for P012E](#) - Page 29.