P2230: BAROMETRIC PRESSURE SENSOR A INTERMITTENT/ERRATIC

OVERVIEW

Severity	:	High
DIY Difficulty Level	:	Intermediate
Repair Cost	:	**$200-$300**
Can I Still Drive?	:	**Yes** (Short-term only)

What Does The P2230 Code Mean?

Most ECMs (Engine Control Modules) rely on a varying amount of measurements to accurately provide the engine an optimal air to fuel ratio. The “optimal” air/fuel ratio is called the “stoichiometric” mixture, 14.7 parts air to one part fuel. Some of the values the ECM monitors to keep the fuel mixture as stoichiometric as possible are, but not limited to: air flow, coolant temperature, engine speed, load demand, atmospheric temperature, etc. Some engine management systems rely more on intake and atmospheric pressures to optimize the mixture.

Not to mention these systems use less sensors to accomplish similar results, as far as fuel management/efficiency is concerned anyway. Usually, BAPs (Barometric Air Pressure) sensors are used when MAP (Manifold Absolute Pressure) sensors are also present. BAPs are used to measure atmospheric pressure. This value is integral to determine fuel mixtures because the ECM needs to compare atmospheric pressures to intake manifold pressures to accurately adjust the fuel mixture according to the operator’s driving needs. Altitude is a significant factor to consider when diagnosing BAPs. Depending on your location, your symptoms may actively worsen or improve, especially if you commute frequently through mountainous areas.

When a letter is included within an OBD2 fault code’s description (in this case “A”), most times it will be to pinpoint something specific (i.e. different banks, sensors, circuits, connectors, etc.) about the system in which you are working within. In this case, I would say it is to determine which sensor you

are working with. A lot of times, there will be multiple barometric sensors to ensure accurate readings. Also, to correlate between sensors to assist fuel management not to mention it helps find faults within the sensors or the circuits. All that said, refer to your service manual for specific details on letter specifications for your particular vehicle.

P2230 is set by the ECM when it detects the Barometric pressure (BAP) “A” sensor or it’s circuit(s) has an electrical fault that isn’t consistent or coming and going randomly throughout some drive cycles.

What Are The Symptoms Of The P2230 Code?

Symptoms of a P2230 trouble code may include:

- Lack of engine power and performance (or limited)
- Engine misfiring
- Abnormal engine noise(s)
- Fuel smell
- Decrease in the fuel economy
- Decreased throttle responsiveness

What Are The Potential Causes Of The P2230 Code?

Causes for this P2230 code may include:

- Defective or damaged BAP (Barometric Air pressure) sensor
- Defective or damaged electrical connector
- Wiring issue (e.g. open, short, corrosion)
- Electrical short (internal or mechanical)
- Loose electrical connection
- Heat damage
- Mechanical malfunction causing altered BAP readings
- ECM (Engine Control Module) issue

How Can You Fix The P2230 Code?

Basic Step #1

Locate the BAP (Barometric Air Pressure) sensor on your particular vehicle. The location of these sensors have varied significantly in my experience so locating the correct sensor should be of highest importance. Once located, inspect the BAP sensor for any physical damage. Possible issues can depend on the location so take sensor’s surroundings into consideration (i.e. High heat areas, engine vibrations, exposed to elements/road debris, etc.).

Basic Step #2

Make sure the connector on the sensor itself is seated properly to ensure a good electrical connection. Especially if the sensor is located on the engine, it may be subject to vibrations that could cause connections to come loose or physically damage them.

NOTE: Make sure you remember to disconnect your battery before disconnecting any sensors. Depending on the vehicle/system/sensor you could cause damaging electrical spikes if you forget this step. That said, if you feel uncomfortable here or have limited fundamental electrical knowledge, I would recommend you tow/drive your vehicle to your reputable repair facility.

Basic Step #3

Anything obstructing the sensor? It could be causing false atmospheric pressure readings. Accurate readings are integral for optimal engine performance in these fuel management systems.

Basic Step #4

Using your multimeter and armed with desired electrical values for the barometric air pressure sensor. You will need to disconnect the connector from the sensor itself to gain access to the pins. Once you see the pins, follow manufacturer specific diagnostic procedures with desired values and compare. Anything out of the specific range will indicate a defective sensor. Replace it following proper repair procedures.

Severity Description

Severity will moderately high here. Reading this, a certain sense of urgency needs to be applied in order to maintain efficient engine operation. Anytime a fault can directly affect very important values such as air/fuel ratios, and is actively present, you should not operate your vehicle, to prevent any engine damage. Having that said, if you've driven the vehicle since the fault has been active, don't worry too much, you are probably fine. Big takeaway, if left unattended, this fault could cause expensive internal engine damage in the future.

Reference Sources

P2230 Barometric Pressure Sensor A Intermittent/Erratic, OBD-Codes.