



P0EAA

A/C Compressor Motor Voltage Sensor B Circuit

P0EAA indicates that the powertrain control module (PCM) has detected an abnormal voltage signal on the 'B' circuit of the air conditioning (A/C) compressor motor voltage sensor. This sensor monitors the high-voltage motor inside the electric A/C compressor, and the PCM sets the code when the signal falls outside the expected range or is inconsistent with other sensor inputs.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Generic (all makes)	Medium	Professional	Hybrid propulsion

Symptoms you may notice

- The air conditioning may stop cooling or blow warm air entirely.
- The A/C compressor may fail to engage or may run intermittently.
- A warning light (check engine or A/C system fault) illuminates on the dashboard.
- The climate control system may default to a fixed setting or disable certain functions.
- Often no symptoms besides the warning light, especially if the fault is intermittent.
- Possible reduced engine performance or fuel economy if the PCM limits A/C operation to protect the system.

Common causes, most likely first

- 1 Faulty A/C compressor motor voltage sensor 'B' (internal sensor failure).
- 2 Damaged or corroded wiring or connector at the sensor or PCM.
- 3 Open or short circuit in the sensor 'B' signal circuit.
- 4 Poor electrical connection at the compressor motor or PCM harness.
- 5 Failed A/C compressor motor (winding or internal fault affecting sensor output).
- 6 PCM software glitch or internal fault (less common).
- 7 Moisture intrusion or contamination in the sensor connector.



How to diagnose and fix it

- 1 Perform a visual inspection of the sensor connector and wiring for damage, corrosion, or loose pins.
- 2 Check for technical service bulletins (TSBs) or software updates for the PCM related to this code.
- 3 Use a scan tool to monitor the sensor 'B' voltage signal and compare with expected values.
- 4 Test the sensor 'B' circuit for continuity, shorts, and resistance using a multimeter.
- 5 Swap the sensor with a known-good unit (if accessible) to see if the code changes.
- 6 Inspect the A/C compressor motor and its internal wiring for faults.
- 7 If all else fails, reprogram or replace the PCM as a last resort.

Before replacing the A/C compressor

- A loose or corroded connector at the sensor is a frequent cause that is often overlooked during diagnosis.
- The code can be set by a low battery or charging system issue that causes voltage spikes, so check the battery and alternator first.
- On hybrid and electric vehicles, the A/C compressor motor voltage sensor is part of the high-voltage system, and safety precautions are mandatory.
- Intermittent faults may not store a freeze-frame or may clear after a few drive cycles, so a road test with live data is essential.
- Replacing the sensor alone may not fix the issue if the root cause is a damaged wire harness or PCM fault.

Can I keep driving with P0EAA?

You can generally drive the vehicle with this code, but the air conditioning may not function, which could be uncomfortable in hot weather. Avoid long trips in high temperatures and have the system diagnosed soon to prevent potential compressor damage.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Wiring diagram for the A/C compressor circuit
- Socket set and trim removal tools
- Insulation resistance tester (for high-voltage systems)



Reading P0EAA

P	Powertrain: engine, transmission and emissions.
0	Generic (SAE) code: it means the same thing on every OBD-II vehicle.
E	Hybrid propulsion.
AA	The exact fault within that area.

Often seen with

P0532 A/C Refrigerant Pressure Sensor 'A' Circuit Low · **P0533** A/C Refrigerant Pressure Sensor 'A' Circuit High
 · **P0EA8** DC/DC Converter B Performance · **P0EA9** Auxiliary Cooling System Performance · **P0EAB** A/C Compressor Motor Voltage Sensor B Circuit Range/Performance

See it working

Watch the animated explainer [Readiness Monitors and the OBD-II Drive Cycle](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p0eaa/>

