

GENERIC · POWERTRAIN

P0EAE

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0EAE

A/C Compressor Motor Voltage Sensor B Circuit Intermittent/Erratic

P0EAE indicates that the powertrain control module (PCM) has detected an intermittent or erratic signal from the A/C compressor motor voltage sensor B circuit. This sensor monitors the voltage supplied to the electric A/C compressor motor, and the PCM sets the code when the signal momentarily drops out, spikes, or becomes inconsistent beyond a calibrated threshold.

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

Symptoms you may notice

- The air conditioning may blow warm air intermittently or stop cooling altogether.
- The A/C compressor may fail to engage or may cycle on and off rapidly.
- A warning light (check engine or A/C system light) illuminates on the dashboard.
- Often no symptoms besides the warning light, especially if the fault is brief and the system still cools.
- The blower motor may continue to run, but the air is not chilled.
- In some vehicles, the engine cooling fans may run continuously or the idle speed may fluctuate when the A/C is requested.

Common causes, most likely first

- A loose, corroded, or damaged electrical connector at the A/C compressor motor voltage sensor B.
- Chafed, pinched, or open wiring in the sensor B circuit, often near the compressor or along the harness.
- A failing A/C compressor motor voltage sensor B itself, producing an erratic output.
- Poor ground connection for the A/C compressor motor or sensor circuit.
- Internal fault in the A/C compressor motor (e.g., worn brushes or intermittent short) affecting the voltage signal.
- A faulty powertrain control module (PCM) or A/C control module, though this is less common.
- Electrical interference from other components sharing the same circuit or ground.



How to diagnose and fix it

- 1 Perform a visual inspection of the A/C compressor motor voltage sensor B connector and wiring for looseness, corrosion, or damage.
- 2 Check for technical service bulletins (TSBs) or known issues for the specific vehicle make and model related to this code.
- 3 Use a scan tool to monitor the sensor B voltage signal in real time while wiggling the harness and connectors to identify intermittent faults.
- 4 Measure the sensor B circuit voltage with a digital multimeter and compare to the manufacturer's specification; check for drops or spikes.
- 5 Test the sensor B resistance and output signal according to the service manual, and replace the sensor if it is out of specification.
- 6 Inspect and clean all ground connections associated with the A/C compressor motor and sensor circuit.
- 7 If the sensor and wiring are good, diagnose the A/C compressor motor and control module as per the manufacturer's diagnostic flow chart.

Intermittent A/C Voltage Sensor Faults

- A common oversight is assuming the sensor itself is faulty when the real problem is a loose ground or a chafed wire that only acts up under vibration or temperature changes.
- The code can be set by a momentary voltage spike from the compressor motor during engagement, which may not affect cooling performance and can be a false alarm if the circuit checks out.
- Some vehicles use the same voltage sensor signal for both compressor control and system protection; an erratic signal can cause the PCM to disable the A/C for self-preservation, leading to no cooling even if the sensor is only intermittently bad.
- A failing A/C compressor motor can draw excessive current and create voltage fluctuations that the sensor B circuit picks up, so always check the motor's current draw and mechanical condition.
- After any repair, clear the code and perform a road test with the A/C on max to verify the signal remains stable under all operating conditions.

Can I keep driving with P0EAE?

You can generally continue driving with this code because it primarily affects the air conditioning system and does not compromise engine safety or drivability. However, avoid long trips in hot weather if cooling is inconsistent, and have the fault diagnosed promptly to prevent potential compressor damage.



Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter (DMM)
- Wire piercing probes or back-probe kit
- Service manual or wiring diagram for the specific vehicle
- Basic hand tools (socket set, screwdrivers, pliers)

Reading P0EAE

P	Powertrain: engine, transmission and emissions.
0	Generic (SAE) code: it means the same thing on every OBD-II vehicle.
E	Hybrid propulsion.
AE	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
 · **P0EAD** A/C Compressor Motor Voltage Sensor B Circuit High · **P0EAF** A/C Compressor Motor Current Sensor Circuit
 · **P0EB0** A/C Compressor Motor Current Sensor Circuit Range/Performanc

See it working

Watch the animated explainer [How a Manual Transmission Works: Four-Speed Cutaway](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p0eae/>

