

GENERIC · POWERTRAIN

P0EB5

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0EB5

A/C Compressor Motor Phase U Current Sensor Circuit Range/Performance

P0EB5 means the electric air-conditioning compressor's motor driver has reported that the current sensor for phase U is reading outside its expected range or behaving erratically. The computer compares the phase U current signal against what it commands and flags the circuit when the measured current does not track the commanded current within the allowed window.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Medium

FIX DIFFICULTY

Professional

AREA

Hybrid propulsion

Symptoms you may notice

- Air conditioning stops cooling or blows warm air shortly after being switched on
- The A/C compressor may run intermittently or refuse to engage at all
- A warning light on the dash, often accompanied by a message that the climate system is unavailable
- Reduced cooling performance that worsens in hot weather or under high load
- Often no symptoms besides the warning light, with the A/C still working normally in mild conditions
- Possible battery drain or charging system warnings if the compressor driver keeps retrying

Common causes, most likely first

- 1 Faulty phase U current sensor inside the compressor motor driver or inverter assembly
- 2 Damaged or corroded wiring between the compressor and its control module, especially at connectors exposed to heat and vibration
- 3 Poor ground connection for the compressor or its driver, causing a reference offset in the current measurement
- 4 Internal failure in the compressor inverter, such as a failed current-sense resistor or signal-conditioning circuit
- 5 Low or unstable 12-volt supply to the compressor control electronics during high electrical load
- 6 Software or calibration issue in the compressor driver that misinterprets a valid current signal
- 7 Moisture intrusion into the compressor connector or driver housing causing signal leakage



How to diagnose and fix it

- 1 Scan all modules and record freeze-frame data for P0EB5, then clear the code and verify whether it returns immediately or only under specific A/C load conditions
- 2 Inspect the compressor harness and connectors for chafing, corrosion, pushed pins, and heat damage, and check the ground strap resistance
- 3 Measure the 12-volt supply and ground at the compressor driver under load to rule out voltage drops that skew the current sensor reading
- 4 Back-probe the phase U current sensor signal and compare it with the commanded current using a scan tool with live data, looking for a flat line, offset, or dropout
- 5 Perform a resistance and insulation test on the phase U motor winding to rule out a short or open that would distort the current waveform
- 6 If the signal is erratic but wiring and supply are good, replace the compressor driver or inverter assembly as a unit, then recheck live data
- 7 After repair, run the A/C through several full load cycles and confirm the code does not return in pending or stored memory

What the phase U current sensor really monitors

- This code is set by the compressor's own inverter logic, not by the engine control module, so a generic scan tool may show it only in the climate or hybrid control module rather than under engine codes.
- A weak or failing 12-volt battery can cause this code on electric compressors because the current sensor reference drifts when supply voltage sags during compressor startup.
- Technicians often replace the entire compressor when the fault is a corroded connector pin at the driver, so always inspect the harness before condemning the unit.
- The phase U current sensor is one of three phase sensors, and a fault in one phase can cause the driver to shut down all cooling even though the other two phases test normal.
- Intermittent P0EB5 that appears only on hot restarts often traces to heat-soaked electronics in the compressor driver rather than a wiring fault.

Can I keep driving with P0EB5?

You can usually drive the vehicle with P0EB5 because the engine and drivetrain are unaffected, but avoid long trips in hot weather since the A/C may shut down and cabin temperatures can rise quickly. If the warning light is accompanied by a charging system message or the compressor makes unusual noises, have it checked promptly.



Tools that help

- Scan tool with live data and the ability to read climate or hybrid control modules
- Digital multimeter with min/max recording
- Oscilloscope for viewing the phase current signal waveform
- Insulation tester for motor winding checks
- Back-probe kit and wiring diagrams for the compressor circuit

Reading P0EB5

P	Powertrain: engine, transmission and emissions.
0	Generic (SAE) code: it means the same thing on every OBD-II vehicle.
E	Hybrid propulsion.
B5	The exact fault within that area.

Often seen with

P0EB4 A/C Compressor Motor Phase U Current Sensor Circuit · **P0EB6** Hybrid/EV Battery Pack Voltage Sense Circuit Performance · **P0EB7** A/C Compressor Motor Phase U Current Sensor Circuit High · **P0EB8** A/C Compressor Motor Phase U Current Sensor Circuit Intermittent · **P0EB9** A/C Compressor Motor Phase V Current Sensor Circuit

See it working

Watch the animated explainer [How a Wideband Air-Fuel Sensor Works](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p0eb5/>

