



P0EAF

A/C Compressor Motor Current Sensor Circuit

P0EAF indicates that the powertrain control module has detected an abnormal signal from the air conditioning compressor motor current sensor circuit, which monitors the electrical current drawn by the electric A/C compressor. The computer sets this code when the sensor's voltage or current reading falls outside the expected range for the compressor's operating state, often due to a wiring fault, sensor failure, or compressor issue.

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 or not cool at all because the compressor is disabled
- The climate control panel may show a flashing or solid A/C warning light
- The engine may idle slightly higher or lower as the PCM adjusts for the disabled compressor
- In some vehicles, the radiator cooling fan may run continuously as a failsafe
- Often no symptoms besides the warning light, especially if the ambient temperature is low and A/C is not needed

Common causes, most likely first

- 1 Damaged, corroded, or disconnected wiring or connector at the A/C compressor current sensor
- 2 Failed A/C compressor motor current sensor
- 3 Open or shorted sensor reference or signal circuit
- 4 Poor ground connection for the sensor or compressor motor
- 5 Internal fault in the electric A/C compressor motor causing abnormal current draw
- 6 Faulty powertrain control module (PCM) or climate control module, though rare



How to diagnose and fix it

- 1 Perform a visual inspection of the A/C compressor current sensor connector and wiring for damage, corrosion, or loose pins
- 2 Check the sensor's reference voltage and ground at the connector with a multimeter and compare to manufacturer specifications
- 3 Measure the sensor signal voltage or current output while the A/C is commanded on and verify it changes with compressor load
- 4 Inspect the compressor motor windings and internal wiring for shorts or opens if the sensor circuit tests normal
- 5 Repair or replace any damaged wiring, connectors, or the current sensor as needed
- 6 Clear the diagnostic trouble codes and verify the A/C system operates correctly with no recurring code
- 7 If the code persists after sensor and wiring repairs, follow the manufacturer's diagnostic flow for the compressor motor or control module

When the sensor is not the real culprit

- A weak or failing battery or charging system can cause voltage drops that mimic a current sensor fault, so always check battery health and charging voltage first.
- The A/C compressor motor current sensor is often integrated into the compressor assembly on many modern electric compressors, meaning a sensor fault may require compressor replacement rather than a separate sensor.
- This code can be set by a completely discharged A/C system or low refrigerant charge because the compressor may draw abnormal current when trying to run without proper lubrication or load.
- Intermittent connections at the compressor connector are common due to engine vibration and heat, so wiggle-test the harness while monitoring sensor data.
- Some vehicles require a relearn or calibration procedure after replacing the current sensor or compressor, and skipping it can cause the code to return immediately.

Can I keep driving with P0EAF?

You can generally continue driving with this code because the engine and transmission are not affected, but the air conditioning will likely be inoperative. Avoid using the A/C system until the fault is repaired to prevent potential further damage to the compressor or electrical system.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Wiring diagram for the specific vehicle
- Socket set and basic hand tools
- Refrigerant pressure gauge set (if checking A/C charge)



Reading P0EAF

P	Powertrain: engine, transmission and emissions.
0	Generic (SAE) code: it means the same thing on every OBD-II vehicle.
E	Hybrid propulsion.
AF	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
 · **P0EAE** A/C Compressor Motor Voltage Sensor B Circuit Intermittent/E · **P0EB0** A/C Compressor Motor Current Sensor Circuit Range/Performanc · **P0EB1** A/C Compressor Motor Current Sensor Circuit Low

See it working

Watch the animated explainer [How a Helicopter Flies: Rotor and Tail in X-Ray](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p0eaf/>

