

GENERIC · POWERTRAIN

P0EC0

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0EC0

A/C Compressor Motor Phase W Current Sensor Circuit Low

P0EC0 indicates that the powertrain control module (PCM) has detected an abnormally low current signal from the phase W current sensor circuit of the air conditioning (A/C) compressor motor, which is typically a three-phase electric compressor used in hybrid and electric vehicles. The PCM monitors this sensor to ensure the compressor is operating within safe electrical limits and sets the code when the signal falls below the expected threshold.

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

Symptoms you may notice

- The A/C may stop cooling or blow warm air because the compressor is disabled to protect the system.
- The climate control panel may show a fault or the A/C button may flash or not engage.
- The warning light (check engine or service vehicle soon) illuminates on the dashboard.
- In some vehicles, the electric compressor may be noisy or emit a whine before shutting down.
- Often no symptoms besides the warning light, especially if the fault is intermittent or only affects one phase under specific conditions.

Common causes, most likely first

- A faulty A/C compressor motor phase W current sensor or its internal circuitry.
- Damaged, chafed, or corroded wiring in the phase W current sensor circuit, including the signal, ground, or reference voltage wires.
- Loose or corroded connector pins at the sensor or PCM, causing high resistance and a low signal.
- A short to ground or open circuit in the phase W current sensor signal wire.
- A failing A/C compressor motor (e.g., shorted winding) that draws abnormal current and triggers the sensor fault.
- A PCM software glitch or internal fault in the current sensor input circuit (less common).
- Aftermarket or incorrect A/C compressor components that do not meet OEM specifications.



How to diagnose and fix it

- 1 Perform a visual inspection of the A/C compressor, its connectors, and the wiring harness for obvious damage, corrosion, or loose connections.
- 2 Use a scan tool to check for related codes and freeze-frame data, and verify the phase W current sensor reading with a live data stream if available.
- 3 Measure the resistance and voltage on the phase W current sensor circuit at the sensor connector and compare with manufacturer specifications.
- 4 Check for continuity and short to ground on the signal wire between the sensor and the PCM, repairing any damaged wiring.
- 5 If the sensor is integrated into the compressor, test the compressor motor windings and insulation resistance; replace the compressor if defective.
- 6 Reprogram or update the PCM if a known software issue exists, following the manufacturer's procedure.
- 7 Clear the codes and perform a road test with the A/C on to verify the repair and ensure the code does not return.

Don't overlook the phase W sensor circuit

- A low current signal can be caused by a poor ground connection at the compressor body, which is often overlooked because the ground is shared with other components.
- The phase W current sensor is sometimes part of the compressor's internal electronics, so a sensor fault may require compressor replacement rather than a separate sensor.
- Intermittent code P0EC0 can be set by vibration or heat affecting a marginal connector, so wiggle-testing the harness while monitoring live data is a valuable diagnostic step.
- This code does not always mean the compressor is failing; a simple chafed wire in the sensor circuit can trigger the same low signal without any mechanical issue.
- Some vehicles use the current sensor signal for both protection and performance control, so a fault may cause the A/C to be disabled entirely even if the compressor is mechanically sound.

Can I keep driving with P0EC0?

You can usually continue driving with this code because the A/C system is disabled only to protect the compressor, but avoid using the A/C until the fault is repaired to prevent potential damage. If the warning light is accompanied by other symptoms like overheating or electrical smells, stop driving and seek professional diagnosis.



Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter (DMM)
- Wiring diagram and service information for the specific vehicle
- Back probe kit or breakout box for connector testing
- Insulation resistance tester (megohmmeter) for compressor motor testing

Reading P0EC0

P	Powertrain: engine, transmission and emissions.
0	Generic (SAE) code: it means the same thing on every OBD-II vehicle.
E	Hybrid propulsion.
C0	The exact fault within that area.

Often seen with

P0EBF A/C Compressor Motor Phase W Current Sensor Circuit Range/Pe · **P0EC1** A/C Compressor Motor Phase W Current Sensor Circuit High · **P0EC2** A/C Compressor Motor Phase W Current Sensor Circuit Intermitt · **P0EC3** A/C Refrigerant Temperature Sensor A Circuit · **P0EC4** A/C Refrigerant Temperature Sensor A Circuit Range/Performan

See it working

Watch the animated explainer [Turbocharger Trainer: Boost, Wastegate and Intercooler](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p0ec0/>

