

GENERIC · POWERTRAIN

P2E7E

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P2E7E

A/C Compressor Control Module Internal Temperature Sensor B Circuit High

The powertrain control module (PCM) has detected an abnormally high voltage on the signal circuit from the internal temperature sensor inside the air conditioning (A/C) compressor control module. This high voltage tells the PCM that the sensor circuit is open, shorted to voltage, or that the sensor element itself has failed, preventing the system from accurately monitoring the compressor module's internal temperature for protection and control.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Hybrid propulsion

Symptoms you may notice

- The A/C compressor may stop engaging, resulting in no cold air from the vents.
- The climate control system may default to a fail-safe mode, such as running the blower only or disabling compressor operation entirely.
- An illuminated check engine light or A/C system warning light on the dashboard.
- Intermittent A/C operation that works when cold but cuts out as the module heats up.
- Often no symptoms besides the warning light, with the A/C still functioning normally in mild conditions.

Common causes, most likely first

- 1 An open circuit in the sensor signal wire, such as a broken wire or poor terminal tension at the compressor control module connector.
- 2 A short to voltage on the sensor signal circuit, often from chafed wiring rubbing against a metal component.
- 3 A failed internal temperature sensor inside the A/C compressor control module, reading out of range.
- 4 Corrosion or water intrusion at the compressor control module connector, causing high resistance or intermittent opens.
- 5 A faulty A/C compressor control module itself, where the internal sensor circuit has failed even if the sensor is serviceable separately.
- 6 A poor ground connection for the compressor control module, which can skew sensor voltage readings high.



How to diagnose and fix it

- 1 Verify the code with a scan tool and check for any related A/C system codes or freeze-frame data to confirm the fault is current.
- 2 Inspect the compressor control module connector and harness for corrosion, loose pins, or chafed wiring, repairing as needed.
- 3 Measure the sensor signal circuit voltage with a digital multimeter (DMM) and compare to the manufacturer's specification; a reading near reference voltage indicates an open circuit.
- 4 Perform a resistance check on the internal temperature sensor if accessible, looking for an open or out-of-range value.
- 5 Check the module ground circuit for excessive voltage drop under load, cleaning or repairing the ground as necessary.
- 6 If the sensor is integrated and not serviceable separately, replace the A/C compressor control module and clear the code.
- 7 After repair, clear codes and run the A/C system through a full operating cycle to confirm the code does not return.

Don't overlook the sensor ground circuit

- A high voltage reading on the sensor signal circuit is often caused by a missing or degraded ground at the compressor control module rather than a failed sensor, so always verify ground integrity before condemning parts.
- The internal temperature sensor is frequently integrated into the compressor control module and not sold separately, meaning a sensor fault can require replacing the entire module.
- Intermittent high-voltage codes often appear only after the module heats up, so a cold-engine inspection may miss a thermally induced open circuit in the sensor or wiring.
- Water intrusion into the compressor control module connector is a common hidden cause, especially on vehicles where the module is mounted low in the engine bay, and can create a high-resistance path that mimics a sensor failure.
- This code does not always mean the A/C system is unsafe to use; in many cases the compressor is protected by a fail-safe strategy, but ignoring the code can lead to compressor damage if the module overheats undetected.

Can I keep driving with P2E7E?

You can generally drive the vehicle with this code, but the A/C system may be disabled or operate intermittently, and prolonged driving in hot conditions without A/C could be uncomfortable. Avoid using the A/C until the fault is repaired, as continued operation with a faulty temperature sensor may prevent the system from protecting the compressor from overheating.



Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter (DMM)
- Wiring diagram for the A/C compressor control module circuit
- Terminal pick and electrical contact cleaner
- Heat gun or hair dryer for thermal testing of the module

Reading P2E7E

- P** Powertrain: engine, transmission and emissions.
- 2** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- E** Hybrid propulsion.
- 7E** 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
 · **P0645** A/C Clutch Relay Control Circuit · **P2E7D** A/C Compressor Control Module Internal Temperature Sensor B · **P2E7F** A/C Compressor Control Module Internal Temperature Sensor B

See it working

Watch the animated explainer [How a MAF Sensor Works: Hot-Wire Airflow Explained](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p2e7e/>

