

GENERIC · POWERTRAIN

P2E7C

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P2E7C

A/C Compressor Control Module Internal Temperature Sensor B Circuit

P2E7C indicates that the air conditioning (A/C) compressor control module has detected an abnormal condition in the electrical circuit for its internal temperature sensor B. The module monitors this sensor to protect the compressor from overheating, and it sets the code when the sensor signal voltage or resistance falls outside the expected range.

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 intermittently.
- The climate control panel may show a flashing or steady A/C warning light.
- The compressor clutch may fail to engage, or it may cycle rapidly on and off.
- In some vehicles, the blower motor and other climate functions may default to a fail-safe mode.
- Often no symptoms besides the warning light, especially if the fault is intermittent.
- A stored code may be the only clue if the sensor circuit fails only under certain temperature conditions.

Common causes, most likely first

- 1 A faulty internal temperature sensor B inside the A/C compressor control module.
- 2 Damaged or corroded wiring or connector pins between the sensor and the control module.
- 3 An open or short circuit in the sensor signal or ground circuit.
- 4 Moisture intrusion into the compressor control module or connector, causing signal corruption.
- 5 A failing A/C compressor control module that misreads a good sensor signal.
- 6 Extreme underhood temperatures or vibration causing a temporary circuit break.
- 7 A poor ground connection shared with other climate control components.



How to diagnose and fix it

- 1 Use a scan tool to retrieve all codes and freeze-frame data, then clear the code and test-drive to see if it returns.
- 2 Visually inspect the compressor control module connector and sensor wiring for corrosion, chafing, or loose pins.
- 3 Measure the sensor circuit resistance and voltage at the module connector and compare with the manufacturer's specification.
- 4 Check the sensor ground circuit for excessive resistance back to the module or chassis ground.
- 5 If the wiring and sensor check out, substitute a known-good compressor control module and retest the circuit.
- 6 Repair or replace any damaged wiring, connector pins, or the sensor itself as indicated by the tests.
- 7 After repairs, clear the code and verify that the A/C system operates correctly through several drive cycles.

What the temperature sensor circuit hides

- The internal temperature sensor B is often a thermistor embedded in the compressor control module, so a code for its circuit can be caused by the module itself rather than a separate sensor.
- A common misdiagnosis is replacing the A/C compressor when the real fault is a chafed wire near the compressor clutch connector or a corroded ground point.
- Intermittent codes often appear only after the engine bay heat-soaks, so a cold-engine test may show a perfectly normal sensor signal.
- Some vehicles share the sensor ground with other climate control sensors, so a fault in a different sensor can corrupt the temperature reading and set this code.
- The code does not always mean the A/C system is unsafe to use; it may simply indicate a degraded signal that the module can compensate for until conditions worsen.

Can I keep driving with P2E7C?

You can usually continue driving because the fault mainly affects A/C performance, but avoid long trips in hot weather if the compressor is cycling erratically. Have the circuit inspected soon to prevent compressor damage from overheating.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter with temperature probe
- Wiring diagram and connector pinout for the A/C compressor control module
- Basic hand tools for trim and connector access
- Manufacturer-specific diagnostic software if available



Reading P2E7C

- P** Powertrain: engine, transmission and emissions.
- 2** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- E** Hybrid propulsion.
- 7C** 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 · **P2E7B** Drive Motor A Excitation Current Sensor Circuit · **P2E7D**
 A/C Compressor Control Module Internal Temperature Sensor B

See it working

Watch the animated explainer [How Coil-on-Plug Ignition Works: Coil and Spark Plug](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p2e7c/>

