

GENERIC · POWERTRAIN

P05E2

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P05E2

A/C Refrigerant Pressure Sensor B Circuit Intermittent/Erratic

P05E2 indicates that the powertrain control module (PCM) has detected an intermittent or erratic signal from the A/C refrigerant pressure sensor B circuit. This sensor monitors the high-side refrigerant pressure so the PCM can engage the A/C compressor clutch and protect the system from overpressure or undercharge, and the code sets when the voltage signal jumps or drops out unpredictably.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Vehicle speed, idle control and auxiliary inputs

Symptoms you may notice

- The air conditioning may blow warm or not cool consistently, especially at idle or in traffic.
- The A/C compressor clutch may cycle rapidly or fail to engage at all.
- The warning light (check engine or A/C system light) illuminates on the dashboard.
- In some vehicles, the cooling fans may run continuously or not at all due to the erratic pressure signal.
- Often no symptoms besides the warning light, with the A/C appearing to work normally during a short drive.

Common causes, most likely first

- 1 A faulty A/C refrigerant pressure sensor B, typically due to internal wear or contamination.
- 2 Damaged, chafed, or corroded wiring in the sensor circuit, especially at connectors or where the harness bends.
- 3 Loose or corroded electrical connector pins at the sensor or PCM.
- 4 Low or fluctuating refrigerant charge causing the sensor to read erratically.
- 5 A failing A/C compressor clutch or control circuit that creates electrical noise on the sensor signal.
- 6 PCM software issues or internal driver faults, though these are less common.
- 7 Moisture intrusion into the sensor connector or sensor body, leading to intermittent shorts.



How to diagnose and fix it

- 1 Verify the code with a scan tool and check for any related A/C system codes before clearing anything.
- 2 Inspect the sensor connector and wiring for corrosion, loose pins, or physical damage, and repair as needed.
- 3 Measure the sensor reference voltage and signal voltage with a multimeter while wiggling the harness to catch intermittent faults.
- 4 Check the refrigerant charge with a manifold gauge set to rule out low or fluctuating pressure as the root cause.
- 5 If the sensor signal is erratic and wiring is good, replace the A/C refrigerant pressure sensor B and clear the code.
- 6 After repair, clear codes and run the A/C system through several cycles to confirm the signal remains stable and the code does not return.
- 7 If the code persists, perform a pinpoint test of the circuit from the PCM to the sensor, including a load test on the ground circuit.

Intermittent A/C sensor faults that fool technicians

- A common misdiagnosis is replacing the A/C compressor when the real problem is a \$30 pressure sensor with an intermittent signal that commands the clutch on and off.
- The sensor B circuit often shares a ground with other sensors, so a bad ground can cause erratic readings that look like a sensor failure but are actually a wiring issue.
- Low refrigerant charge can cause the pressure sensor to read outside its normal range and set an intermittent code, so always check system pressures before condemning the sensor.
- On some vehicles, the A/C pressure sensor signal is used by the cooling fan control module, so an erratic signal can cause fan-related codes or symptoms without any A/C complaint.
- A failing A/C compressor clutch can induce voltage spikes that corrupt the sensor signal, so inspect the clutch coil and diode for shorts if the sensor keeps failing.

Can I keep driving with P05E2?

You can usually continue driving with this code because it primarily affects air conditioning performance, but avoid using the A/C until the fault is repaired to prevent potential compressor damage from erratic clutch cycling. If the engine cooling fans also stop working, monitor engine temperature closely and avoid heavy traffic or long idles.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Manifold gauge set for A/C system
- Wire terminal pick and connector cleaning tools
- Service manual or wiring diagram for the specific vehicle



Reading P05E2

- P** Powertrain: engine, transmission and emissions.
- 0** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- 5** Vehicle speed, idle control and auxiliary inputs.
- E2** 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
 · **P0534** Air Conditioner Refrigerant Charge Loss · **P05E1** A/C Refrigerant Pressure Sensor A Circuit Intermittent/Errat · **P0645** A/C Clutch Relay Control Circuit

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/p05e2/>

