

GENERIC · POWERTRAIN

P256F

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P256F

A/C Request B Circuit Range/Performance

P256F indicates that the powertrain control module (PCM) has detected an out-of-range or performance fault in the air conditioning request B circuit, which is the signal path used to tell the engine computer that the climate system needs the compressor engaged. The PCM compares the expected state of this circuit against the actual voltage or signal it receives and sets the code when the two do not agree for a calibrated period.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Generic (all makes)	Low	Intermediate	Vehicle speed, idle control and auxiliary inputs

Symptoms you may notice

- The air conditioning may stop cooling or fail to engage the compressor clutch entirely.
- The A/C request button or climate control panel may appear unresponsive or intermittent.
- The check engine light illuminates, often with no other noticeable driveability complaint.
- In some vehicles, the cooling fans may run continuously or not at all when A/C is requested.
- The engine idle may fluctuate when the A/C is switched on because the PCM cannot properly anticipate compressor load.
- Often no symptoms besides the warning light, especially if the fault is intermittent.

Common causes, most likely first

- A faulty A/C pressure switch or transducer that sends an implausible signal on the request B circuit.
- Damaged, chafed, or corroded wiring between the climate control head, pressure sensor, and PCM.
- A failed A/C compressor clutch relay or a relay coil with incorrect resistance.
- A climate control module or HVAC control head that is not sending the correct request signal.
- Poor ground connection at the A/C request circuit or at the PCM, causing voltage offsets.
- A PCM software calibration issue or, less commonly, an internal PCM driver fault.
- Aftermarket accessories or remote start wiring that backfeed the A/C request circuit.



How to diagnose and fix it

- 1 Connect a scan tool and record all freeze-frame data and any related body or climate control codes before clearing anything.
- 2 Inspect the A/C request B circuit wiring and connectors for chafing, corrosion, or loose pins, especially near the compressor and pressure switch.
- 3 Test the A/C pressure switch or transducer signal with a multimeter and compare it to the manufacturer's specification for the ambient temperature.
- 4 Check the A/C compressor clutch relay by swapping it with an identical relay or testing coil resistance and contact continuity.
- 5 Verify the climate control head is commanding A/C request by monitoring live data on the scan tool while pressing the A/C button.
- 6 Perform a voltage drop test on the ground side of the A/C request circuit and the PCM ground to rule out resistance faults.
- 7 If all inputs and wiring test good, follow the manufacturer's diagnostic flow for PCM reflash or replacement as a last step.

What the A/C request circuit really does

- Many technicians replace the A/C compressor when the real fault is a \$30 pressure switch or a chafed wire that only shorts when the engine bay is hot.
- The A/C request B circuit is often a low-current signal line, so a cheap test light can damage the PCM driver if probed incorrectly; always use a high-impedance multimeter.
- A weak battery or poor charging system voltage can cause the PCM to misread the A/C request signal, setting P256F without any actual circuit fault.
- On some vehicles, the A/C request signal passes through the body control module (BCM), so a BCM communication fault or body code can be the true root cause.
- Clearing the code without checking freeze-frame data often leads to a comeback because intermittent faults may not reset until the exact temperature and load conditions repeat.

Can I keep driving with P256F?

The vehicle remains safe to drive because P256F affects the air conditioning request circuit and does not impair engine operation or safety systems. Avoid using the A/C until the fault is repaired, and do not clear the code repeatedly, as that can erase useful freeze-frame data for diagnosis.



Tools that help

- OBD-II scan tool with live data and freeze-frame capability
- Digital multimeter with high-impedance input
- Wiring diagram for the A/C request circuit
- Relay puller and test leads
- Basic hand tools for trim and connector access

Reading P256F

- P** Powertrain: engine, transmission and emissions.
- 2** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- 5** Vehicle speed, idle control and auxiliary inputs.
- 6F** 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 · **P256E** Engine Idle Speed Selector Sensor/Switch Circuit Intermittent
- **P2570** Direct Ozone Reduction Catalyst Temperature Sensor Circuit H

See it working

Watch the animated explainer [How a Refrigerator Works: The Cooling Cycle](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p256f/>

