

GENERIC · POWERTRAIN

P2520

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P2520

A/C Request 'A' Circuit Low

P2520 indicates that the powertrain control module (PCM) has detected a low voltage condition on the air conditioning request 'A' circuit, which is the signal wire from the climate control head or A/C switch to the PCM. The PCM expects to see a voltage within a specific range when A/C is requested, and a low reading means the circuit is shorted to ground, open, or the switch is not providing the correct signal.

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 not engage at all when requested.
- The A/C compressor clutch may fail to engage, leaving only warm air from the vents.
- The check engine light (malfunction indicator lamp) illuminates on the dashboard.
- In some vehicles, the A/C may run continuously or default to a fixed mode due to the fault.
- Often no symptoms besides the warning light, especially if the A/C system still functions normally.

Common causes, most likely first

- A short to ground in the A/C request signal wire between the climate control head and the PCM.
- An open circuit in the A/C request circuit, such as a broken wire or poor connection.
- A faulty A/C request switch or climate control panel that is not sending the correct voltage signal.
- Corroded or damaged electrical connectors at the PCM or climate control unit.
- A defective PCM that is misinterpreting the A/C request signal (rare).
- Aftermarket accessories or wiring repairs that have tapped into the A/C request circuit and altered its voltage.



How to diagnose and fix it

- 1 Verify the code with a scan tool and check for any related codes in the climate control or body control modules.
- 2 Inspect the A/C request switch and climate control panel for proper operation and signal output using a multimeter.
- 3 Check the wiring harness and connectors between the climate control head and the PCM for signs of damage, corrosion, or loose pins.
- 4 Measure the voltage on the A/C request circuit at the PCM while pressing the A/C button; compare to manufacturer specifications.
- 5 If the signal is low, disconnect the climate control head and check for a short to ground on the signal wire; repair as needed.
- 6 If the wiring and switch are good, test the PCM with a known-good unit or perform a continuity check on the circuit to rule out internal PCM faults.
- 7 Clear the code and verify the repair by cycling the A/C on and off and confirming the code does not return.

Common misdiagnosis traps for P2520

- A low A/C request signal can be caused by a faulty climate control panel that is not providing the correct pull-up voltage, which many technicians overlook when focusing only on the PCM.
- The A/C request circuit often shares a ground or reference voltage with other sensors, so a problem in a related circuit can set P2520 even if the A/C switch itself is fine.
- Aftermarket remote starters or alarm systems that tap into the A/C request wire can introduce a short to ground and trigger this code, so always check for non-factory wiring.
- On some vehicles, the A/C request signal is a pulse-width modulated (PWM) signal rather than a simple voltage, and a standard multimeter may not read it correctly; use an oscilloscope for accurate diagnosis.
- P2520 can be set by a low battery or charging system issue that causes the PCM to see a low voltage on the A/C request circuit during engine cranking, so check battery health first.

Can I keep driving with P2520?

The vehicle is safe to drive with P2520 because it does not affect engine operation or safety systems, but the air conditioning may not work. Avoid using the A/C until the fault is repaired to prevent potential compressor damage from short cycling.

Tools that help

- OBD-II scan tool
- Digital multimeter
- Oscilloscope (for PWM signal testing)
- Wiring diagram for the specific vehicle
- Trim removal tools for accessing the climate control panel



Reading P2520

- 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.
- 20** 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
 · **P251F** PTO Engine Shutdown Circuit High · **P2521** A/C Request 'A' Circuit High · **P2522** A/C Request 'B' Circuit

See it working

Watch the animated explainer [How a Fuel Injector Works: Pulse Width and Spray](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p2520/>

