

GENERIC · POWERTRAIN

P0D6B

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

## P0D6B

# A/C Compressor Motor Voltage Sensor A Circuit Low

P0D6B indicates that the powertrain control module (PCM) has detected a low voltage condition on the signal circuit from the A/C compressor motor voltage sensor, which is typically a position or speed sensor integrated into the electric A/C compressor. The PCM expects a voltage within a specific range that varies with compressor speed or rotor position, and a sustained low reading triggers this code.

| SYSTEM     | CODE TYPE           | SEVERITY | FIX DIFFICULTY | AREA              |
|------------|---------------------|----------|----------------|-------------------|
| Powertrain | Generic (all makes) | Medium   | Intermediate   | Hybrid propulsion |

## Symptoms you may notice

- The air conditioning may blow warm air or not cool at all because the compressor is disabled.
- The A/C compressor clutch may not engage, or on electric compressors the unit may not spin.
- A noticeable drop in cooling performance, especially at idle or in high ambient temperatures.
- The check engine light or A/C system warning light is illuminated.
- In some vehicles, the engine cooling fans may run continuously as a failsafe.
- Often no symptoms besides the warning light, with the A/C still functioning normally.

## Common causes, most likely first

- A damaged, frayed, or disconnected wire in the sensor signal circuit, particularly at the compressor connector.
- Corroded or loose electrical terminals at the A/C compressor motor voltage sensor or the PCM connector.
- A failed A/C compressor motor voltage sensor (internal to the compressor on many electric compressors).
- A short to ground on the signal circuit, pulling the voltage below the expected range.
- A faulty PCM or A/C control module that is misreading the sensor signal.
- Low system voltage or a weak battery causing erratic sensor readings.
- Aftermarket electrical accessories improperly wired into the A/C circuit.



## How to diagnose and fix it

- 1 Perform a visual inspection of the A/C compressor wiring harness and connector for chafing, corrosion, or loose pins.
- 2 Check for any technical service bulletins (TSBs) or software updates for the A/C control module that address sensor signal faults.
- 3 Measure the sensor reference voltage and signal voltage at the compressor connector with a digital multimeter and compare to specifications.
- 4 Backprobe the signal wire at the PCM and check for continuity and short to ground while wiggling the harness.
- 5 If the wiring and connectors are good, test the sensor with an oscilloscope to verify a clean square wave or linear voltage change with compressor rotation.
- 6 Replace the A/C compressor motor voltage sensor or the compressor assembly if the sensor is not serviceable separately.
- 7 Clear the code and perform a road test with the A/C on to verify the repair and ensure the code does not return.

## Before you replace the A/C compressor

- A low voltage on the signal circuit is often caused by a poor ground connection at the compressor housing rather than a failed sensor.
- Some vehicles set this code when the A/C system is low on refrigerant because the compressor cannot spin fast enough to generate a valid signal.
- The sensor may be part of the compressor and not available separately, but always check the wiring first before condemning the compressor.
- Intermittent low voltage can be caused by water intrusion into the compressor connector, especially after driving through deep puddles.
- A failing battery or alternator can cause multiple low-voltage sensor codes, so check charging system health before deep diagnosis.

## Can I keep driving with P0D6B?

You can usually continue driving with this code because the A/C system may be disabled to protect the compressor, but avoid using the A/C until repaired to prevent potential compressor damage. If the engine overheats or the cooling fans run constantly, address the issue promptly.

## Tools that help

- Digital multimeter (DMM)
- Oscilloscope
- Wire piercing probes or backprobe pins
- Scan tool with live data capability
- Vehicle-specific wiring diagram



## Reading P0D6B

- P** Powertrain: engine, transmission and emissions.
- 0** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- D** Hybrid propulsion.
- 6B** 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  
 · **P0D6A** A/C Compressor Motor Voltage Sensor A Circuit High · **P0D6C** A/C Compressor Motor Voltage Sensor A Circuit Intermittent/E · **P0D6D** A/C Compressor Motor Voltage A Low

## See it working

Watch the animated explainer [How a MAP Sensor Works: Engine Vacuum and Load](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p0d6b/>

