

GENERIC · POWERTRAIN

P0D7D

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0D7D

A/C Compressor Motor Phase V Current High

P0D7D indicates that the powertrain control module has detected excessive current draw on phase V of the air conditioning compressor motor, which is typically a three-phase brushless DC motor. The computer monitors current feedback from the inverter circuit and sets this code when the measured current exceeds the calibrated threshold for a specified time, signaling a potential short circuit, winding fault, or inverter problem.

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

Symptoms you may notice

- The air conditioning may stop cooling entirely or blow warm air.
- The A/C compressor clutch may fail to engage or may disengage intermittently.
- The blower motor may still run, but the air from the vents is not cold.
- A noticeable decrease in engine performance or fuel economy may occur if the compressor is seized or dragging.
- Often no symptoms besides the warning light, especially if the fault is intermittent or only occurs under specific conditions.
- In some vehicles, the climate control system may default to a fail-safe mode, disabling A/C operation.

Common causes, most likely first

- A short circuit or damaged wiring in the compressor motor phase V circuit, including chafed or pinched wires.
- A faulty A/C compressor motor with a shorted or grounded winding in phase V.
- A failed inverter or power module that supplies current to the compressor motor, causing excessive current on one phase.
- Corrosion or loose connections at the compressor motor connector or the inverter connector, leading to increased resistance and current spikes.
- A malfunctioning current sensor or feedback circuit within the inverter that incorrectly reports high current.
- A seized or mechanically binding compressor, which increases current draw across all phases, with phase V being the first to exceed the threshold.
- Software or calibration issues in the powertrain control module or inverter that cause false current readings.



How to diagnose and fix it

- 1 Perform a visual inspection of the compressor motor wiring and connectors for damage, corrosion, or loose pins, and repair as needed.
- 2 Use a scan tool to clear the code and verify if it returns; if it does, proceed with circuit testing.
- 3 Measure the resistance of the compressor motor windings (phase to phase and phase to ground) with a multimeter and compare to specifications to check for shorts or opens.
- 4 Check the inverter output for proper voltage and current signals using an oscilloscope or manufacturer-specific diagnostic equipment.
- 5 Inspect the compressor for mechanical binding or seizure by attempting to rotate the compressor shaft (if accessible) or checking for abnormal noise during operation.
- 6 If the motor and wiring test good, suspect the inverter or power module and follow the manufacturer's diagnostic flow chart for replacement or reprogramming.
- 7 After repairs, clear codes and perform a road test with the A/C on to confirm the code does not return and the system operates correctly.

Phase V current faults often misdiagnosed

- A high current reading on phase V can be caused by a failing inverter rather than the compressor motor itself, so testing the inverter output is critical before replacing the compressor.
- Intermittent wiring faults that only appear when the engine is hot or vibrating can set this code without any permanent failure, so wiggle tests and load tests are essential.
- Some vehicles use the compressor motor for both A/C and battery cooling, so a fault here may also affect hybrid or electric vehicle thermal management, leading to additional codes.
- The current sensor circuit inside the inverter can drift and report false high current, which is often overlooked and leads to unnecessary compressor replacement.
- A low refrigerant charge can cause the compressor to run at higher speed or under unusual load, indirectly increasing current draw and triggering this code even though the root cause is a leak.

Can I keep driving with P0D7D?

You can generally drive the vehicle with this code, but the air conditioning may not function, and if the compressor is mechanically failing, continued driving could lead to further damage. Avoid using the A/C system until the fault is diagnosed, and if you notice unusual noises or engine performance issues, have the vehicle inspected promptly.



Tools that help

- OBD-II scan tool with manufacturer-specific capabilities
- Digital multimeter with resistance and current measurement
- Oscilloscope for analyzing phase current waveforms
- Wiring diagram and service information for the specific vehicle
- Insulation tester (megohmmeter) for checking motor winding insulation

Reading P0D7D

P	Powertrain: engine, transmission and emissions.
0	Generic (SAE) code: it means the same thing on every OBD-II vehicle.
D	Hybrid propulsion.
7D	The exact fault within that area.

Often seen with

P0D7A A/C Compressor Motor Phase U Current Low · **P0D7B** A/C Compressor Motor Phase U Current High ·
P0D7C A/C Compressor Motor Phase V Current Low · **P0D7E** A/C Compressor Motor Phase W Current Low ·
P0D7F A/C Compressor Motor Phase W Current High

See it working

Watch the animated explainer [How a Padlock Works: Pin Tumbler Lock in X-Ray](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p0d7d/>

