

GENERIC · POWERTRAIN

P2CFF

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P2CFF

A/C Clutch Control Circuit Driver Current/Temperature Too High

P2CFF indicates that the air conditioning (A/C) clutch control circuit driver has detected excessive current or temperature, meaning the module that powers the A/C compressor clutch is protecting itself from damage. The computer monitors the driver circuit for overcurrent or overheating conditions and sets this code when the measured current or calculated driver temperature exceeds a safe threshold.

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

Symptoms you may notice

- The A/C compressor clutch may stop engaging, resulting in no cold air from the vents.
- The climate control panel may show a flashing or steady A/C indicator, or the system may default to vent-only operation.
- In some vehicles, the engine cooling fan may run continuously as a failsafe when the A/C request is disabled.
- A stored trouble code may be the only sign, with no noticeable performance change if the fault is intermittent.
- The A/C clutch may engage briefly and then disengage repeatedly (short cycling) before the code sets.
- Other electronic systems may exhibit odd behavior if the fault lies in a shared power or ground circuit.

Common causes, most likely first

- A failing A/C compressor clutch coil that draws excessive current due to shorted windings or internal damage.
- Damaged or chafed wiring in the clutch control circuit, causing a short to ground or to power.
- Corroded or loose electrical connectors at the clutch, the control module, or inline harness splices.
- A faulty A/C clutch control module or driver circuit inside the body control module (BCM) or powertrain control module (PCM).
- A seized or dragging A/C compressor clutch assembly that increases mechanical load and current draw.
- Poor ground connections for the A/C clutch circuit or the control module, leading to abnormal current flow.
- Aftermarket electrical accessories tapped into the A/C circuit, causing unexpected current draw.



How to diagnose and fix it

- 1 Inspect the A/C clutch coil and connector for signs of overheating, melted plastic, or corrosion, and clean or replace connectors as needed.
- 2 Measure the resistance of the A/C clutch coil and compare it to the manufacturer's specification to rule out a shorted or open coil.
- 3 Check the clutch control circuit wiring for continuity, shorts to ground, and shorts to power using a multimeter and wiring diagram.
- 4 Verify that the A/C compressor clutch spins freely by hand and that the clutch air gap is within specification.
- 5 Test the control module's driver output with a scan tool or oscilloscope to confirm whether the module is commanding the clutch correctly.
- 6 If the module is suspected, perform a voltage drop test on the power and ground circuits to the module before condemning it.
- 7 Clear the code and road-test the vehicle with the A/C on to confirm the repair and ensure the code does not return.

Clutch coil shorts mimic module failures

- A shorted A/C clutch coil often draws enough current to trigger this code without blowing a fuse, so technicians who only check fuses miss the real cause.
- The driver temperature calculation is based on internal module logic, so a code for 'temperature too high' can set even when the module feels cool to the touch.
- Aftermarket remote starters or alarm systems that tap into the A/C request wire can introduce back-feeds that cause this code intermittently.
- A weak battery or charging system can cause the module to misread current, leading to a false P2CFF if voltage drops during clutch engagement.
- Always check the clutch air gap before replacing the compressor; an excessive gap can cause the clutch to slip and overheat the coil.

Can I keep driving with P2CFF?

You can drive the vehicle with this code because the A/C system is disabled for protection, but avoid using the A/C until repaired to prevent further damage to the clutch or control module. If the engine cooling fan runs continuously or you notice electrical smells, have the vehicle inspected promptly.

Tools that help

- Digital multimeter with resistance and current measurement
- Scan tool capable of reading body control module codes and live data
- Wiring diagram for the A/C clutch control circuit
- Feeler gauge set for checking clutch air gap
- Socket set and basic hand tools for component access



Reading P2CFF

- P** Powertrain: engine, transmission and emissions.
- 2** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- C** Hybrid propulsion.
- FF** 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 · **P0646** A/C Clutch Relay Control Circuit Low

See it working

Watch the animated explainer [Manual Car Driving Simulator: Learn Clutch Control](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p2cff/>

