

CHRYSLER · POWERTRAIN

P1489

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1489 · Chrysler

High Speed Fan CTRL Relay Circuit Open Or Shorted

P1489 on a Chrysler vehicle means the powertrain control module (PCM) has detected an open or shorted circuit in the control wire for the high-speed cooling fan relay. The PCM commands the relay on during high coolant temperature or air conditioning (A/C) operation, and it monitors the control circuit for expected voltage changes; when the voltage stays out of range, this code sets.

SYSTEM

Powertrain

CODE TYPE

Chrysler specific

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Auxiliary emission controls

Symptoms you may notice

- The check engine light is illuminated, often with no other noticeable symptoms.
- The high-speed cooling fan may not run at all, leading to higher coolant temperatures in traffic or during A/C use.
- The A/C may blow warm air or cut out when the engine is hot because the high-speed fan is disabled.
- The engine temperature gauge may climb above normal in stop-and-go driving or when idling for long periods.
- In some cases, the low-speed fan works but the high-speed fan never engages, which the driver may not notice until the engine overheats.
- A stored P1489 may be accompanied by a P0480 or P0481 code if the fan relay control circuit affects multiple fan speeds.

Common causes, most likely first

- 1 A failed high-speed cooling fan relay (open coil or burned contacts).
- 2 A broken, corroded, or disconnected wire in the relay control circuit between the PCM and the relay.
- 3 A short to ground or short to voltage in the control wire, often from chafed insulation near the fan shroud or relay box.
- 4 Corroded or loose terminals at the relay socket or at the PCM connector.
- 5 A faulty powertrain control module (PCM) driver for the fan relay, though this is less common.
- 6 A seized or shorted cooling fan motor that draws excessive current and damages the relay or wiring.
- 7 Water intrusion into the relay box or fan connector causing intermittent opens or shorts.



How to diagnose and fix it

- 1 Verify the code with a scan tool and check for any related fan or A/C codes before replacing parts.
- 2 Inspect the high-speed fan relay and its socket for corrosion, loose terminals, or a burned smell; swap the relay with a known-good identical relay to test.
- 3 Check the control wire from the PCM to the relay for continuity and shorts to ground or power using a digital multimeter (DMM).
- 4 Test the cooling fan motor by applying battery voltage directly to the fan connector to confirm it spins freely and does not draw excessive current.
- 5 Inspect the wiring harness along the fan shroud and near the relay box for chafing, heat damage, or water intrusion.
- 6 If the control circuit and relay are good, check the PCM driver output with a test light or oscilloscope; replace the PCM only after confirming all other possibilities.
- 7 Clear the code and verify the high-speed fan operates when commanded by the scan tool or when the engine reaches the activation temperature.

Before you replace the fan relay

- A common mistake is replacing the high-speed fan relay without checking the control wire for a short to ground, which will burn out the new relay as soon as it is installed.
- The PCM may set P1489 even when the fan still works at low speed, because the high-speed circuit is monitored separately and a failure there does not always affect low-speed operation.
- Corrosion inside the relay box from a leaking battery or clogged drain can cause intermittent opens that only appear in wet weather, so inspect for water tracks before condemning the relay.
- A shorted cooling fan motor can damage the relay and the control circuit, so always test the motor before installing a new relay to avoid a repeat failure.
- On some Chrysler models, the high-speed fan relay is controlled by a ground-side driver in the PCM, so a short to ground on the control wire will set this code even if the relay itself is good.

Can I keep driving with P1489?

You can drive the vehicle short distances at low speed, but avoid heavy traffic, long idling, and sustained A/C use until the fault is repaired because the high-speed fan may not engage and the engine could overheat. If the temperature gauge rises above normal, pull over and shut the engine off.



Tools that help

- OBD-II scan tool with bidirectional control capability
- Digital multimeter (DMM)
- Test light
- Wire probe and jumper wires
- Relay puller or small flat-blade screwdriver
- Factory service information or wiring diagram for the specific Chrysler model

Reading P1489

P Powertrain: engine, transmission and emissions.

1 Manufacturer-specific code (Chrysler): its meaning depends on the make.

4 Auxiliary emission controls.

89 The exact fault within that area.

Often seen with

P1490 Vacuum Cut Valve Bypass Valve Circuit · **P1490** Low Speed Fan Control Relay Fault · **P1490** Low Speed Fan CTRL Relay Circuit Open Or Shorted · **P1490** Low Speed Fan CTRL Relay Circuit Open Or Shorted · **P0480** Cooling Fan 1 Control Circuit Malfunction · **P0481** Cooling Fan 2 Control Circuit Malfunction · **P0482** Cooling Fan 3 Control Circuit Malfunction · **P0483** Fan Rationality Check

See it working

Watch the animated explainer [How a Radiator Fan Relay Circuit Works](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/chrysler-p1489/>

