

MITSUBISHI · POWERTRAIN

**P1489**

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

## P1489 · Mitsubishi

# High Speed Condenser Fan Control Relay Fault

P1489 on a Mitsubishi means the engine control module (ECM) has detected an electrical fault in the control circuit for the high-speed condenser fan relay, which is the relay that powers the extra fan used to pull air through the air conditioning condenser when demand is high. The ECM monitors the relay control wire for expected voltage changes when it commands the relay on and off, and it sets this code when the circuit does not respond as designed.

SYSTEM

**Powertrain**

CODE TYPE

**Mitsubishi specific**

SEVERITY

**Medium**

FIX DIFFICULTY

**Intermediate**

AREA

**Auxiliary emission controls**

## Symptoms you may notice

- The check engine light illuminates and the air conditioning may blow warm at idle or in stop-and-go traffic.
- The high-speed condenser fan may not run at all, or it may run continuously whenever the key is on.
- Engine coolant temperature can climb above normal in slow traffic because the condenser fan also helps move air through the radiator on many models.
- A clicking or buzzing relay may be heard from the underhood fuse box after the engine is shut off.
- Often no symptoms besides the warning light, especially in cool weather when the high-speed fan is rarely commanded.

## Common causes, most likely first

- 1 Failed high-speed condenser fan relay, usually due to burned contacts or a stuck coil.
- 2 Open or corroded wiring between the ECM and the relay control terminal.
- 3 Blown fuse or fusible link in the high-speed condenser fan power circuit.
- 4 Damaged or disconnected condenser fan motor connector causing excessive current draw.
- 5 Seized or dragging condenser fan motor that overloads the relay circuit.
- 6 Corroded ECM connector pins or water intrusion into the ECM or relay box.
- 7 A short to ground or short to voltage on the relay control wire, often from chafed harness insulation.



## How to diagnose and fix it

- 1 Verify the code with a scan tool and check for any related fan or air conditioning codes before touching hardware.
- 2 Inspect the underhood fuse box for a blown high-speed condenser fan fuse and replace it only after checking for a short.
- 3 Test the high-speed condenser fan relay by swapping it with an identical relay from a non-critical circuit and clearing the code.
- 4 Measure resistance across the condenser fan motor and compare it to specification; a seized or open motor must be replaced.
- 5 Back-probe the relay control wire at the ECM and command the fan on with a scan tool to confirm the ECM is grounding the circuit.
- 6 Inspect the harness from the ECM to the relay for chafing, corrosion, or water damage, repairing any damaged sections.
- 7 Clear the code and road-test with the air conditioning on to confirm the high-speed fan engages and the code does not return.

## What the high-speed fan relay test misses

- A relay that clicks does not mean the contacts are good; always load-test the relay or swap it with a known-good unit before condemning the ECM.
- Many technicians replace the condenser fan motor when the real fault is a corroded relay socket that causes intermittent open circuits under vibration.
- The ECM may set P1489 if the condenser fan motor draws too much current and damages the relay, so a new relay can fail again unless the motor is checked.
- On some Mitsubishi models the high-speed condenser fan relay shares a ground with the radiator fan circuit, so a bad ground can set this code along with fan performance codes.
- A weak battery or charging system fault can cause the ECM to misread relay feedback voltage, so check system voltage before replacing expensive modules.

## Can I keep driving with P1489?

You can drive the car with P1489, but avoid heavy air conditioning use in hot weather or slow traffic because the high-speed fan may not run and coolant temperature can rise. If the temperature gauge climbs above normal, pull over and shut the engine off.



## Tools that help

- OBD-II scan tool with bidirectional control
- Digital multimeter
- Relay puller or small flat-blade screwdriver
- Test light
- Factory service information or wiring diagram

## Reading P1489

**P** Powertrain: engine, transmission and emissions.

**1** Manufacturer-specific code (Mitsubishi): 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 · **P1488** Auxiliary 5 Volt Supply Output Too Low · **P1490** Low Speed Fan CTRL Relay Circuit Open Or Shorted · **P1488** Auxiliary 5 Volt Supply Output Too Low · **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

## 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/mitsubishi-p1489/>

