

GM · POWERTRAIN

P1545

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1545 · GM

A/C Clutch Relay Control Circuit

P1545 on a GM vehicle means the powertrain control module (PCM) commanded the air conditioning (A/C) clutch relay on, but the feedback circuit did not confirm the clutch engaged. The PCM monitors the relay control circuit and the clutch engagement signal, and it sets this code when the expected voltage or current signature is missing.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	GM specific	Low	Intermediate	Vehicle speed, idle control and auxiliary inputs

Symptoms you may notice

- The A/C blows warm air even though the blower motor works on all speeds
- The A/C clutch does not engage or engages intermittently, especially when the engine is hot
- The A/C compressor short-cycles or clicks on and off rapidly
- The A/C indicator light on the dash may flash or stay off when requested
- Often no symptoms besides the warning light if the fault is in the feedback circuit only
- The engine cooling fans may run constantly because the PCM defaults to a protection strategy

Common causes, most likely first

- Failed A/C clutch relay, especially a relay with burned or pitted contacts
- Open or shorted wire in the A/C clutch relay control circuit between the PCM and the relay
- Corroded or loose connector terminals at the relay, the A/C clutch, or the PCM
- Defective A/C compressor clutch coil that is open, shorted, or drawing excessive current
- Blown fuse or poor ground connection for the A/C clutch circuit
- PCM internal driver failure on the relay control output
- Aftermarket alarm or remote start wiring that tapped into the A/C clutch circuit



How to diagnose and fix it

- 1 Scan all modules for stored codes and record freeze-frame data before clearing anything
- 2 Inspect the A/C clutch relay, swap it with an identical relay from a non-critical circuit, and retest
- 3 Check the A/C clutch fuse and verify battery voltage at the relay terminals with the key on
- 4 Disconnect the A/C clutch coil connector and measure coil resistance and current draw against the GM service specification
- 5 Back-probe the relay control wire at the PCM and command the A/C on with a scan tool to confirm the driver pulls the circuit low
- 6 Perform a voltage drop test on the ground side of the clutch circuit and repair any corroded terminals
- 7 If the control circuit and clutch coil test good but the PCM does not command the relay, diagnose the PCM driver or replace the PCM after confirming powers and grounds

What a P1545 rarely tells you

- A failed A/C clutch relay is the most common cause on GM trucks and SUVs, and many technicians replace the compressor before testing the relay because the symptom feels like a bad clutch.
- The PCM sets P1545 based on the feedback circuit, so a perfectly working A/C system can still trigger this code if the feedback wire is chafed or the PCM cannot see clutch engagement.
- Low refrigerant charge or a faulty A/C pressure sensor can prevent clutch engagement and set this code indirectly, so always check pressures and related A/C codes before condemning the clutch.
- Aftermarket remote start or alarm installers often splice into the A/C clutch relay control wire, creating intermittent opens that only appear when the harness is flexed.
- On some GM platforms the cooling fan relay shares a ground or power path with the A/C clutch relay, so a fan fault can set P1545 as a companion code.

Can I keep driving with P1545?

You can drive the vehicle safely with P1545 because the fault affects only the air conditioning, but avoid long trips in hot weather and do not keep cycling the A/C switch, which can stress the clutch and relay further. Repair it before summer to prevent secondary damage to the compressor.

Tools that help

- Scan tool with bidirectional A/C control capability
- Digital multimeter with min/max and current clamp
- Test light or logic probe
- Relay puller and terminal pick set
- GM service information wiring diagrams



Reading P1545

- P** Powertrain: engine, transmission and emissions.
- 1** Manufacturer-specific code (GM): its meaning depends on the make.
- 5** Vehicle speed, idle control and auxiliary inputs.
- 45** The exact fault within that area.

Often seen with

P1546 Boost Pressure Control Valve Short To B+ · **P1546** Air Conditioning (A/C) Clutch Feedback Circuit Low Voltage · **P1546** Air Conditioning (A/C) Clutch Feedback Circuit Low Voltage · **P1546** Pedal Position Sensor · **P0530** A/C Refrigerant Pressure Sensor 'A' Circuit · **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

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/gm-p1545/>

