

GM · POWERTRAIN

P1538

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1538 · GM

A/C Request Circuit Voltage High

P1538 on a GM vehicle means the powertrain control module (PCM) has detected an abnormally high voltage on the air conditioning request circuit, which is the signal wire from the HVAC control head to the PCM. The PCM expects this circuit to rest at a low reference voltage and pull low when A/C is requested, so a sustained high voltage tells the module the request line is open, shorted to voltage, or the control head is not pulling it down.

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 compressor may not engage at all, leaving the cabin air warm even with the climate control set to max cold.
- The A/C request button or mode selector may appear to do nothing, with no change in blower or compressor operation.
- The check engine light (malfunction indicator lamp) is illuminated on the instrument cluster.
- The HVAC control head may show erratic behavior, such as intermittent blower speeds or unresponsive mode doors.
- Often no symptoms besides the warning light, because the PCM may default to allowing A/C operation or the driver may not notice a slight reduction in cooling.
- In some cases the compressor clutch may cycle rapidly or stay engaged continuously, depending on how the PCM failsafe strategy reacts to the high voltage.

Common causes, most likely first

- An open circuit or broken wire in the A/C request signal circuit between the HVAC control head and the PCM, which lets the PCM pull the line high.
- A short to voltage on the A/C request wire, often from chafing against a power wire in the dash harness or engine harness.
- A failed HVAC control head that no longer provides the expected low-side pull-down on the request circuit.
- Corroded or loose terminals at the PCM connector or the HVAC control head connector, adding resistance that drives the voltage high.
- A faulty PCM driver on the A/C request input, though this is less common than wiring and control head faults.
- Aftermarket accessories or remote start wiring tapped into the A/C request circuit, introducing an unintended voltage source.



How to diagnose and fix it

- 1 Connect a scan tool and confirm P1538 is current, then command the A/C on and off while watching the A/C request status parameter to see whether the PCM recognizes the request.
- 2 Inspect the HVAC control head connector and the PCM connector for corrosion, pushed-out pins, or loose terminals, and clean or repair as needed.
- 3 Disconnect the HVAC control head and the PCM, then measure resistance end-to-end on the A/C request wire to check for an open circuit.
- 4 With the key on and connectors reconnected, back-probe the A/C request wire at the PCM and measure voltage while pressing the A/C button; a line that stays high confirms the control head is not pulling it low.
- 5 Check for a short to voltage by measuring the A/C request wire to ground with both ends disconnected; any voltage present indicates a short in the harness.
- 6 If wiring and connectors test good, substitute a known-good HVAC control head and recheck the request signal and code status.
- 7 If the control head and harness are confirmed good but the PCM still reports high voltage, diagnose the PCM input circuit or replace the PCM after ruling out all other causes.

What most techs miss on P1538

- A common misdiagnosis is replacing the A/C compressor or clutch when the real fault is a five-dollar connector terminal at the HVAC control head that has lost its tension and no longer pulls the request line low.
- The A/C request circuit is a low-current signal line, so a high-voltage code often appears with no drivability complaint and the compressor may still engage through a separate PCM strategy, leading owners to ignore the light until inspection time.
- Aftermarket remote start or alarm installations frequently tap into the A/C request wire for climate pre-conditioning, and a poor splice there can introduce the high voltage that sets P1538.
- On some GM platforms the HVAC control head communicates with the PCM over a data bus as well as the discrete request wire, so a control head that works perfectly on the bus can still fail the discrete voltage check.
- A weak or failing PCM ground can cause the module to misinterpret the A/C request voltage, so check PCM ground integrity before condemning the module itself.

Can I keep driving with P1538?

You can keep driving with P1538 because the fault affects only the air conditioning request signal and does not compromise engine safety or drivability. Avoid relying on A/C operation until the circuit is repaired, and have the wiring inspected soon to prevent a simple connector fault from turning into a control head or PCM replacement.



Tools that help

- Scan tool with GM-specific data display capability
- Digital multimeter with back-probe pins
- Wiring diagram for the specific GM model and year
- Trim removal tools for accessing the HVAC control head
- Terminal pick and crimping tools for connector repair

Reading P1538

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.

38 The exact fault within that area.

Often seen with

P1537 Engine Shutoff Solenoid Malfunction · **P1537** A/C Request Circuit Voltage Low · **P1537** Intake Manifold Runner Control Stuck Open · **P1537** A/C Request Circuit Low Voltage · **B0228** Front Fog Lamp 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 [How a Refrigerator Works: The Cooling Cycle](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/gm-p1538/>

