

GENERIC · POWERTRAIN

P0536

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0536

A/C Evaporator Temperature Sensor Circuit Range/Performance

P0536 means the powertrain control module (PCM) has detected that the air conditioning (A/C) evaporator temperature sensor signal is outside its expected range or is not behaving in a plausible way over time. The PCM compares the sensor voltage against calibrated limits and cross-checks it against other A/C and engine data, and when the signal stays out of bounds or changes too abruptly, it stores this range/performance code.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Vehicle speed, idle control and auxiliary inputs

Symptoms you may notice

- The A/C warning light or check engine light is illuminated on the dashboard.
- The air conditioning may blow warm or intermittently cold air because the PCM cannot properly regulate compressor operation.
- The A/C compressor clutch may cycle rapidly, stay disengaged, or fail to engage at all.
- The climate control system may default to a fixed setting or stop responding to temperature adjustments.
- Often no symptoms besides the warning light, especially if the sensor fault is intermittent or only slightly out of range.

Common causes, most likely first

- 1 A failing A/C evaporator temperature sensor that has drifted out of calibration or has an intermittent internal fault.
- 2 Damaged, chafed, or corroded wiring between the sensor and the PCM, often near the evaporator core or firewall pass-through.
- 3 A poor electrical connection at the sensor connector or at the PCM harness, including loose pins or water intrusion.
- 4 A sensor signal circuit shorted to ground or to voltage, which pulls the reading outside the expected range.
- 5 A restricted or blocked evaporator core that causes the sensor to see temperatures outside the normal operating window.
- 6 A PCM calibration issue or internal PCM fault that misinterprets a valid sensor signal, though this is less common.
- 7 Aftermarket or incorrect sensor replacement that does not match the original resistance curve.



How to diagnose and fix it

- 1 Connect a scan tool and record the A/C evaporator temperature sensor live data in degrees, comparing it to actual vent temperature and ambient conditions.
- 2 Visually inspect the sensor, connector, and harness for chafing, corrosion, or loose pins, and repair any obvious wiring damage first.
- 3 Measure sensor resistance with a multimeter and compare it to the manufacturer's temperature-resistance chart to confirm the sensor is in specification.
- 4 Back-probe the signal circuit at the PCM and check for a stable voltage that changes smoothly as the evaporator temperature changes.
- 5 Check for shorts to ground or voltage on the signal wire with the sensor disconnected, and repair any circuit faults found.
- 6 Replace the A/C evaporator temperature sensor if resistance testing confirms it is out of range or intermittent, then clear the code and verify the live data reads correctly.
- 7 If the circuit and sensor test good, check for a PCM software update or, as a last resort, diagnose a possible internal PCM fault.

What the A/C evaporator sensor code hides

- A common misdiagnosis is replacing the A/C compressor when the real fault is a cheap evaporator temperature sensor sending a skewed signal that prevents the PCM from engaging the clutch.
- The sensor is often buried behind the dash or inside the evaporator case, so technicians sometimes overlook a simple connector corrosion issue at the firewall before condemning the sensor itself.
- This code can set from a completely different root cause such as low refrigerant charge or a restricted expansion valve, because those conditions push evaporator temperature outside the range the PCM expects.
- Intermittent wiring faults that only appear when the engine bay is hot or wet can set P0536 without any permanent sensor failure, so wiggle testing the harness while watching live data is essential.
- Some vehicles use the evaporator temperature sensor for automatic climate control and compressor protection, so a fault can cause the A/C to default to full cold or disable the compressor entirely even when pressures are normal.

Can I keep driving with P0536?

You can usually drive the vehicle safely with P0536 because it does not affect engine operation or safety systems, but the air conditioning may not work correctly and prolonged operation with a faulty sensor can lead to evaporator icing or compressor cycling problems. Avoid relying on the A/C for long trips in hot weather until the fault is repaired, and do not ignore the code if the compressor is short-cycling.



Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Manufacturer service information with sensor resistance chart
- Back-probe kit or pin probes
- Trim removal tools for accessing the evaporator sensor

Reading P0536

P	Powertrain: engine, transmission and emissions.
0	Generic (SAE) code: it means the same thing on every OBD-II vehicle.
5	Vehicle speed, idle control and auxiliary inputs.
36	The exact fault within that area.

Often seen with

P0534 Air Conditioner Refrigerant Charge Loss · **P0535** A/C Evaporator Temperature Sensor Circuit · **P0537** A/C Evaporator Temperature Sensor Circuit Low · **P0538** A/C Evaporator Temperature Sensor Circuit High · **P0645** A/C Clutch Relay Control Circuit

See it working

Watch the animated explainer **V6 Engine Explained: 60° Bank and Firing Order** on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p0536/>

