

GM · POWERTRAIN

P1536

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1536 · GM

A/C System ECT Overtemperature

P1536 on GM vehicles means the powertrain control module has detected that the engine coolant temperature has risen above the threshold it considers safe while the air conditioning system is requesting compressor operation. The computer is protecting the engine by interrupting or limiting A/C compressor engagement until coolant temperature returns to a normal range.

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

Symptoms you may notice

- The air conditioning may blow warm or stop cooling intermittently, especially in traffic or on hot days
- The check engine light or service vehicle soon message illuminates on the dashboard
- The engine temperature gauge may read higher than normal or fluctuate
- The A/C compressor clutch may cycle rapidly or fail to engage at all
- Often no symptoms besides the warning light if the overtemperature event was brief
- Reduced engine power or a message to turn off the A/C may appear on some models

Common causes, most likely first

- Low engine coolant level from a slow leak, air pocket, or neglected cooling system service
- A faulty engine coolant temperature sensor reading higher than actual temperature
- A stuck-open or weak thermostat causing poor coolant circulation and localized overheating
- A failing cooling fan or fan relay that prevents airflow through the radiator at low speed
- A restricted radiator, debris-packed condenser, or collapsed hose reducing heat rejection
- A refrigerant overcharge or faulty A/C pressure sensor causing excessive compressor load
- Wiring damage or corrosion at the ECT sensor connector or A/C compressor clutch circuit



How to diagnose and fix it

- 1 Check engine coolant level and condition when the engine is cold, then pressure-test the system for leaks
- 2 Scan all modules for stored and pending codes, and compare live ECT readings against an infrared thermometer at the thermostat housing
- 3 Verify cooling fan operation at both low and high speed commands using a scan tool bidirectional test
- 4 Test the thermostat by monitoring coolant temperature rise from cold start to normal operating temperature
- 5 Inspect the radiator and condenser fins for debris or bent fins, and check for a restricted radiator using a temperature drop test
- 6 Check A/C refrigerant pressures and the A/C pressure sensor reading to rule out an overcharge or sensor fault
- 7 Inspect the ECT sensor connector and wiring for corrosion or chafing, and repair or replace as needed

Why P1536 is often a cooling system warning

- Many technicians replace the A/C compressor when the real problem is a marginal cooling system that only overheats under A/C load, so always verify coolant temperature accuracy first.
- A weak radiator cap that does not hold pressure can allow coolant to boil at a lower temperature and trigger this code without any visible leak.
- On some GM trucks and SUVs, a dirty condenser that blocks airflow to the radiator causes the ECT to climb only when the A/C is on, mimicking a compressor fault.
- The code can set from a brief overtemperature event during a long idle or trailer tow, and may not return after clearing if the cooling system is healthy.
- A failing ECT sensor can read high without the engine actually overheating, so compare the sensor reading to a manual thermometer before condemning cooling components.

Can I keep driving with P1536?

You can usually drive the vehicle to a shop, but turn off the air conditioning and monitor the temperature gauge closely. If the gauge climbs into the red or you see steam, pull over and stop the engine to avoid head gasket damage.

Tools that help

- OBD-II scan tool with live data and bidirectional control
- Infrared thermometer
- Cooling system pressure tester
- A/C manifold gauge set
- Basic hand tools and socket set



Reading P1536

- 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.
- 36** The exact fault within that area.

Often seen with

P0117 Engine Coolant Temperature Circuit Low Input · **P0118** Engine Coolant Temperature Circuit High Input · **P0128** Coolant Thermostat (Coolant Temperature Below Thermostat Reg · **P0218** Transmission Over-Temperature Condition · **P0532** A/C Refrigerant Pressure Sensor 'A' Circuit Low

See it working

Watch the animated explainer [How a MAF Sensor Works: Hot-Wire Airflow Explained](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/gm-p1536/>

