

GM · POWERTRAIN

P1118

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1118 · GM

Engine Coolant Temperature Above Maximum Voltage

P1118 on a GM vehicle means the engine control module (ECM) has detected an abnormally high voltage on the engine coolant temperature (ECT) sensor circuit, which it interprets as a coolant temperature above the maximum allowed value. The ECM monitors the sensor signal voltage and flags this code when the voltage exceeds the calibrated upper limit, typically because the circuit is open or the sensor resistance is too high.

SYSTEM

Powertrain

CODE TYPE

GM specific

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Fuel and air metering

Symptoms you may notice

- Illuminated check engine light, often with no other noticeable symptoms
- Temperature gauge reading cold or below normal even after the engine warms up
- Poor fuel economy and rich-running condition because the ECM thinks the engine is cold
- Hard starting or rough idle when the engine is warm
- Electric cooling fan running constantly or not at all, depending on fail-safe strategy
- In some cases, the engine may overheat if the ECM misjudges coolant temperature

Common causes, most likely first

- 1 Open or damaged wire in the ECT sensor signal circuit (high resistance or break)
- 2 Faulty ECT sensor with an open internal element or incorrect resistance
- 3 Corroded or loose connection at the ECT sensor or ECM connector
- 4 High resistance in the sensor ground circuit
- 5 Failed ECM driver or internal circuit fault (rare but possible)
- 6 Aftermarket sensor with incorrect resistance curve installed
- 7 Coolant level low enough to expose the sensor, causing erratic readings



How to diagnose and fix it

- 1 Scan all modules and record freeze-frame data to confirm the ECT voltage is actually high and not a stored history code
- 2 Inspect the ECT sensor connector and wiring for corrosion, chafing, or loose pins, and repair as needed
- 3 Measure resistance across the ECT sensor terminals and compare to the GM temperature-resistance chart for the exact engine
- 4 Backprobe the ECT signal circuit at the ECM and check voltage with the key on, engine off, to isolate a wiring or sensor fault
- 5 Check the sensor ground circuit for excessive resistance using a voltage drop test
- 6 Replace the ECT sensor if resistance is out of specification or the signal circuit tests good but voltage remains high
- 7 Clear codes and verify the ECT reading agrees with actual coolant temperature using a scan tool after a road test

Why a cold engine can set a hot code

- A P1118 is often set by an open sensor signal wire rather than a failed sensor, so always check circuit continuity before replacing parts.
- The ECM may default to a fixed coolant temperature value when the signal is lost, which can mask the problem and make the engine run rich without obvious driveability complaints.
- On some GM engines, the ECT sensor shares a ground with other sensors, so a bad ground can cause multiple codes and misleading temperature readings.
- A stuck-open thermostat can cause the engine to run cold, but it will not set P1118 because the sensor signal would be low, not high; do not confuse the two.
- Aftermarket sensors with the wrong resistance curve are a common cause of repeat P1118 codes even after replacement.

Can I keep driving with P1118?

You can usually drive the vehicle short distances to a repair shop, but avoid heavy loads or long trips because the ECM may run the engine rich and the cooling fan strategy may be incorrect. If the temperature gauge shows overheating or the engine runs poorly, stop and have it towed.

Tools that help

- Scan tool with live data capability
- Digital multimeter
- Backprobe pins or breakout box
- GM service information for temperature-resistance charts
- Basic hand tools for sensor replacement



Reading P1118

- P** Powertrain: engine, transmission and emissions.
- 1** Manufacturer-specific code (GM): its meaning depends on the make.
- 1** Fuel and air metering.
- 18** The exact fault within that area.

Often seen with

P0115 Engine Coolant Temperature Circuit Malfunction · **P0116** Engine Coolant Temperature Circuit Range/Performance · **P0117** Engine Coolant Temperature Circuit Low Input · **P0118** Engine Coolant Temperature Circuit High Input · **P0128** Coolant Thermostat (Coolant Temperature Below Thermostat Reg

See it working

Watch the animated explainer [Engine Cooling System Trainer: How Engines Stay Cool](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/gm-p1118/>

