

GENERIC · POWERTRAIN

P008F

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P008F

Engine Coolant Temperature/Fuel Temperature Correlation

P008F indicates that the powertrain control module (PCM) has detected an implausible relationship between the engine coolant temperature (ECT) sensor and the fuel temperature sensor during cold starts or specific operating conditions. The PCM expects the fuel temperature to rise in a predictable manner relative to coolant temperature, and when the two signals deviate beyond calibrated limits, this code is set.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Low

FIX DIFFICULTY

Intermediate

AREA

Fuel and air metering and auxiliary emission controls

Symptoms you may notice

- Illumination of the malfunction indicator lamp (MIL) with often no other noticeable symptoms.
- Rough idle or hesitation during cold engine operation.
- Reduced fuel economy or poor performance under load.
- Hard starting or extended cranking when the engine is cold.
- In rare cases, the engine may enter limp mode or exhibit reduced power.
- No drivability issues at all, with the code being the only indication of a problem.

Common causes, most likely first

- 1 Faulty fuel temperature sensor or its wiring connector.
- 2 Faulty engine coolant temperature (ECT) sensor or its circuit.
- 3 Corroded, chafed, or open wiring in the sensor circuits.
- 4 Poor electrical connection at the PCM or sensor grounds.
- 5 Sticking or failed thermostat causing abnormal coolant temperature behavior.
- 6 Low fuel level or fuel system issues affecting fuel temperature readings.
- 7 PCM software calibration issue or internal PCM fault (less common).



How to diagnose and fix it

- 1 Connect a scan tool and record freeze-frame data for both ECT and fuel temperature sensors to see the actual values when the code set.
- 2 Visually inspect the fuel temperature sensor and ECT sensor connectors and wiring for damage, corrosion, or loose pins.
- 3 Measure the resistance of both sensors with a multimeter and compare to manufacturer specifications across temperature ranges.
- 4 Check the thermostat operation and coolant level to rule out cooling system faults that could skew ECT readings.
- 5 Perform a voltage drop test on the sensor ground and signal circuits to ensure integrity under load.
- 6 If sensor values are within spec but the code persists, check for technical service bulletins (TSBs) or PCM software updates.
- 7 Replace the faulty sensor or repair wiring as needed, clear the code, and verify the repair by monitoring live data during a cold start.

What most technicians overlook with P008F

- A marginal thermostat that opens slightly early or late can cause the ECT signal to fall outside the expected correlation window without setting a thermostat-specific code.
- Fuel temperature sensor readings are often ignored during routine diagnostics, but they can drift gradually and only trigger P008F under specific cold-start conditions.
- Wiring harness damage near the fuel tank or along the frame rail is a common hidden cause, especially on vehicles with prior underbody repairs.
- The code can be set by a weak battery or charging system issue that causes voltage spikes affecting sensor signals during cranking.
- Replacing both sensors without verifying the circuits is a costly misdiagnosis; always check resistance and voltage drop first.

Can I keep driving with P008F?

The vehicle is generally safe to drive with P008F because it rarely causes immediate drivability problems, but you should avoid extended driving until the cause is diagnosed to prevent potential fuel economy loss or unnoticed sensor failure. Schedule a diagnostic inspection at your earliest convenience.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Infrared thermometer
- Wiring diagram for the specific vehicle
- Basic hand tools for sensor removal



Reading P008F

- P** Powertrain: engine, transmission and emissions.
- 0** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- 0** Fuel and air metering and auxiliary emission controls.
- 8F** The exact fault within that area.

Often seen with

P0087 Fuel Rail/System Pressure - Too Low · **P0088** Fuel Rail/System Pressure - Too High · **P0093** Fuel System Leak Detected - Large Leak · **P0115** Engine Coolant Temperature Circuit Malfunction · **P0116** Engine Coolant Temperature Circuit Range/Performance

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/p008f/>

