

GENERIC · POWERTRAIN

P007F

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P007F

Charge Air Cooler Temperature Sensor Bank1/Bank2 Correlation

P007F indicates that the engine control module has detected an implausible relationship between the charge air cooler temperature sensor readings for bank 1 and bank 2, meaning the two sensors disagree by more than the calibrated threshold under the same operating conditions. The computer compares the two signals to verify that both sensors are reporting a consistent post-cooler air temperature, and it sets this code when the correlation falls outside the expected range.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Fuel and air metering and auxiliary emission controls

Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms
- Reduced engine power or limp mode in some vehicles when the fault is active
- Poor fuel economy or slightly rough running during acceleration
- Inconsistent boost pressure or turbocharger performance felt as hesitation
- In rare cases, a noticeable loss of power after the intercooler heat-soaks in traffic

Common causes, most likely first

- 1 Faulty charge air cooler temperature sensor on bank 1 or bank 2
- 2 Damaged or corroded wiring harness or connector at either sensor
- 3 Intake air leaks or restrictions affecting one bank's charge air cooler
- 4 Charge air cooler internally restricted or externally blocked on one side
- 5 Engine control module software calibration issue or outdated firmware
- 6 Failed engine control module, though this is uncommon



How to diagnose and fix it

- 1 Use a scan tool to record freeze-frame data and compare bank 1 and bank 2 charge air cooler temperature sensor readings with the engine at idle and during a road test
- 2 Visually inspect both sensors, their connectors, and the wiring harness for chafing, corrosion, or loose pins
- 3 Check for intake air leaks or restrictions between the turbocharger and the charge air cooler on both banks
- 4 Perform a resistance or voltage check on each sensor according to the manufacturer's specification and compare the results
- 5 Verify that the charge air cooler is not externally blocked by debris or internally restricted by oil sludge or carbon
- 6 Reprogram or update the engine control module calibration if a known software issue exists for the vehicle
- 7 Replace the faulty sensor or repair the wiring as needed, then clear the code and verify the correlation returns to normal during a test drive

What the correlation code really means

- A P007F code often sets because one sensor is slow to respond to temperature changes rather than completely failed, so a simple resistance check at room temperature may not reveal the fault.
- Technicians sometimes replace both sensors unnecessarily when the real problem is a partially restricted charge air cooler on one bank causing a genuine temperature difference.
- The code can be triggered by a software calibration issue in some vehicles, so checking for technical service bulletins before replacing parts is a smart step.
- Intake air leaks after the intercooler can cause one bank to run hotter than the other, leading to a correlation fault that mimics a sensor failure.
- After any repair, a road test with live data monitoring is essential because the code may not reset immediately during idle-only diagnostics.

Can I keep driving with P007F?

You can generally continue driving with this code if the engine runs smoothly and the check engine light is steady, but avoid heavy acceleration or towing until the fault is diagnosed. If the light flashes or you notice a significant loss of power, stop driving and seek professional diagnosis to prevent potential engine damage.

Tools that help

- OBD-II scan tool with live data and freeze-frame capability
- Digital multimeter for sensor and wiring testing
- Infrared thermometer to compare charge air cooler outlet temperatures
- Basic hand tools for connector and sensor access
- Smoke machine for intake leak detection



Reading P007F

- 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.
- 7F** The exact fault within that area.

Often seen with

P007C Charge Air Cooler Temperature Sensor Circuit Low Bank 1 · **P007D** Charge Air Cooler Temperature Sensor Circuit High Bank 1 · **P007E** Charge Air Cooler Temperature Sensor Circuit Intermittent/Er · **P00B0** Turbocharger/Supercharger Boost Control B Module Performance · **P00B1** Radiator Coolant Temperature Sensor Circuit

See it working

Watch the animated explainer [Turbocharger Trainer: Boost, Wastegate and Intercooler](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p007f/>

