

GENERIC · POWERTRAIN

P2199

OBD-II TROUBLE CODE

P2199

Intake Air Temperature Sensor 1 / 2 Correlation

P2199 indicates that the powertrain control module (PCM) has detected a correlation error between the two intake air temperature (IAT) sensors, typically IAT sensor 1 and IAT sensor 2. The PCM compares their readings under conditions where they should closely match, and when the difference exceeds a calibrated threshold for a set time, it stores this code.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Generic (all makes)	Low	Intermediate	Fuel and air metering

Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms
- Rough idle or hesitation when the engine is cold
- Poor fuel economy or rich-running condition
- Black smoke from the exhaust due to over-fueling
- Hard starting or stalling shortly after startup in cold weather
- In rare cases, a drop in engine performance or reduced power

Common causes, most likely first

- 1 Faulty intake air temperature sensor 1 or 2
- 2 Damaged or corroded wiring or connector at either IAT sensor
- 3 Open or short circuit in the sensor signal or ground circuit
- 4 Intake air leak between the two sensor locations, such as a cracked intake tube or loose clamp
- 5 Contamination or physical damage to a sensor element
- 6 PCM software calibration issue or internal fault (less common)



How to diagnose and fix it

- 1 Use a scan tool to record freeze-frame data and compare live IAT 1 and IAT 2 readings when the engine is cold and after warm-up
- 2 Visually inspect both IAT sensors, their connectors, and the wiring harness for damage, corrosion, or loose pins
- 3 Check for intake air leaks between the two sensor locations using a smoke machine or visual inspection of the intake tract
- 4 Measure resistance of each IAT sensor with a multimeter and compare to the manufacturer's temperature-resistance chart
- 5 Backprobe the sensor signal and ground circuits to verify voltage drops and continuity to the PCM
- 6 If wiring and sensors test good, check for technical service bulletins (TSBs) or PCM calibration updates before condemning the PCM
- 7 Replace the faulty sensor or repair the wiring as needed, clear the code, and verify the repair with a test drive

What most technicians overlook with P2199

- A dirty or contaminated mass airflow (MAF) sensor can skew intake air temperature readings and trigger P2199 even when both IAT sensors are functioning correctly.
- The code can set intermittently due to a poor ground connection at the sensor or PCM, which often escapes a basic resistance check.
- After replacing an IAT sensor, some vehicles require a PCM relearn or calibration reset to prevent the code from returning immediately.
- An intake air leak between the two sensors can cause a temperature difference that mimics a sensor failure, so always smoke-test the intake before replacing parts.
- P2199 is sometimes stored alongside misfire or fuel trim codes, but those may be secondary to the temperature correlation fault rather than separate issues.

Can I keep driving with P2199?

The vehicle is generally safe to drive with P2199 because it rarely causes immediate drivability or safety issues, but avoid prolonged driving with the check engine light on. Have the fault diagnosed soon to prevent potential fuel economy loss or secondary codes from developing.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Smoke machine for intake leak testing
- Basic hand tools (screwdrivers, socket set)
- Wiring diagram for the specific vehicle



Reading P2199

- P** Powertrain: engine, transmission and emissions.
- 2** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- 1** Fuel and air metering.
- 99** The exact fault within that area.

Often seen with

P0111 Intake Air Temperature Circuit Range/Performance · **P0112** Intake Air Temperature Circuit Low Input · **P0113** Intake Air Temperature Circuit High Input · **P0116** Engine Coolant Temperature Circuit Range/Performance · **P0125** Insufficient Coolant Temperature for Closed Loop Fuel Control

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/p2199/>

