

VOLKSWAGEN · POWERTRAIN

P1196

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1196 · Volkswagen

Oxygen Sensor Heater Circuit Bank 1 Sensor 1 Electrical Malfunction

P1196 on Volkswagen vehicles indicates that the engine control module has detected an electrical malfunction in the heater circuit for the upstream oxygen sensor on bank 1. The computer monitors the heater element's current draw and expects a specific resistance range; when the circuit is open, shorted, or out of specification, this code is stored.

SYSTEM

Powertrain

CODE TYPE

Volkswagen
specific

SEVERITY

Low

FIX DIFFICULTY

Intermediate

AREA

Fuel and air
metering

Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms
- Slightly longer time to enter closed-loop fuel control after a cold start, which may cause rough idle for the first minute
- A subtle decrease in fuel economy over time as the heater fails to bring the sensor up to temperature quickly
- In rare cases, a pending misfire or lean-condition code may accompany P1196 if the sensor remains cold too long
- No driveability complaints at all in many cases, especially in warmer ambient temperatures

Common causes, most likely first

- 1 Failed oxygen sensor heater element (open circuit or excessive resistance inside the sensor)
- 2 Damaged or corroded wiring harness between the oxygen sensor and the engine control module
- 3 Blown fuse or faulty relay that supplies power to the oxygen sensor heater circuit
- 4 Poor electrical connection at the oxygen sensor connector, often due to water intrusion or terminal fretting
- 5 Engine control module internal driver failure for the heater circuit (less common but possible)
- 6 Aftermarket oxygen sensor with incorrect heater resistance installed previously



How to diagnose and fix it

- 1 Check the fuse and relay that feed the oxygen sensor heater circuit, replacing any blown fuse after verifying no short to ground
- 2 Inspect the oxygen sensor connector and harness for corrosion, chafing, or loose terminals, and repair as needed
- 3 Measure the resistance of the heater element at the sensor connector and compare to the manufacturer's specification
- 4 Check for battery voltage and ground at the heater circuit with the key on, engine off, to confirm power and ground integrity
- 5 If resistance is out of specification or the circuit is open, replace the upstream oxygen sensor with an OEM-quality part
- 6 Clear the fault memory and perform a road test to verify the heater circuit monitor completes without resetting the code
- 7 If the code persists after sensor and wiring repairs, diagnose the engine control module driver circuit for the heater

When the heater circuit fools you

- A P1196 can be set by a heater circuit that tests fine at room temperature but fails when cold, so always check resistance with the sensor at ambient temperature before condemning it.
- Volkswagen engines often use a shared power supply for multiple oxygen sensor heaters, so a blown fuse may also disable the downstream sensor heater and set additional codes.
- The heater element can be damaged by contamination from coolant or oil burning in the exhaust, so a failed sensor may be a symptom of a larger engine issue.
- Some scan tools show heater circuit data as a current draw in amps; a reading of zero amps with the engine running confirms an open circuit rather than a lazy sensor.
- Replacing the oxygen sensor without checking the heater fuse and relay is a common misdiagnosis that leads to a repeat failure of the new sensor.

Can I keep driving with P1196?

You can usually continue driving with P1196 because the engine will still run and the only effect is delayed oxygen sensor heating, which may slightly increase emissions and fuel consumption when cold. Avoid extended idling from a cold start and have the fault repaired soon to prevent secondary codes and to maintain fuel efficiency.



Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Fuse puller and test light
- Socket set and oxygen sensor wrench
- Wiring diagram for the specific Volkswagen model

Reading P1196

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

Often seen with

P1197 Oxygen Sensor Heater Circuit Bank 2 Sensor 1 Electrical Malf · **P1198** Oxygen Sensor Heater Circuit Bank 1 Sensor 2 Electrical Malf · **P1197** Mileage Switch Circuit · **P1198** Fuel Level Input Circuit High · **P1197** O2 Sensor 1/2 (Bank 1 Sensor 2) Slow During Catalyst Monitor · **P1198** Radiator Temperature Sensor Voltage Too High · **P1197** Key Off Voltage Low · **P1198** Pump Rotor Control Underfueling · **P1197** O2 Sensor 1/2 (Bank 1 Sensor 2) Slow During Catalyst Monitor · **P1198** Radiator Temperature Sensor Voltage Too High · **P0134** O2 Sensor Circuit No Activity (Bank 1 Sensor 1) · **P0135** O2 Sensor Heater Circuit Malfunction (Bank 1 Sensor 1) · **P0141** O2 Sensor Heater Circuit Malfunction (Bank 1 Sensor 2)

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/volkswagen-p1196/>

