

GENERIC · POWERTRAIN

P0059

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0059

HO2S Heater Resistance (Bank 2 Sensor 1)

P0059 means the powertrain control module has measured a heater circuit resistance in the upstream oxygen sensor on bank 2 that falls outside the expected range, so the sensor cannot reach operating temperature quickly enough. The computer detects this by monitoring the current or voltage on the heater control circuit and comparing it to a calibrated threshold when the heater is commanded on.

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

- Illuminated check engine light, often with no other noticeable symptoms
- Extended time before the engine enters closed-loop fuel control, causing slightly rough idle when cold
- A small increase in fuel consumption during warm-up because the sensor stays cold longer
- Intermittent check engine light that may clear and reset depending on temperature and vibration
- In rare cases, a slight hesitation or stumble when accelerating from a cold start

Common causes, most likely first

- 1 Failed oxygen sensor heater element inside the bank 2 sensor 1 assembly
- 2 Damaged or corroded wiring or connector at the sensor or along the heater circuit
- 3 Blown fuse or faulty relay that supplies power to the oxygen sensor heater circuit
- 4 Open or shorted heater circuit caused by chafed harness insulation near hot exhaust components
- 5 Poor ground connection for the heater circuit at the engine or chassis
- 6 Corrosion or water intrusion in the connector causing high resistance
- 7 Rarely, a driver circuit fault inside the powertrain control module



How to diagnose and fix it

- 1 Inspect the bank 2 sensor 1 connector and wiring for corrosion, chafing, or loose pins, and repair as needed
- 2 Check the heater circuit fuse and relay, replacing any that are blown or faulty
- 3 Measure the resistance of the oxygen sensor heater element with a multimeter and compare to the manufacturer's specification
- 4 Test the heater supply voltage and ground circuit at the sensor connector with the key on to confirm power and ground integrity
- 5 If the heater resistance is out of specification or the circuit tests good but the code persists, replace the bank 2 sensor 1 oxygen sensor
- 6 Clear the diagnostic trouble codes and perform a road test to verify the repair and confirm the monitor runs to completion

What the heater resistance code really tells you

- A P0059 can be set by a heater circuit that tests fine at room temperature but opens when hot, so always check resistance both cold and after warming the sensor with a heat gun or by running the engine.
- Many technicians replace the oxygen sensor only to find the real fault is a corroded connector pin or a chafed wire that intermittently shorts to ground when the engine moves under load.
- The heater circuit is often shared with other components through a common fuse or relay, so a blown fuse may also disable other sensors or emission controls and set additional codes.
- A weak battery or charging system can cause the heater circuit voltage to drop below threshold during cranking, setting a false P0059 without any sensor fault.
- Do not assume the sensor is bad just because the code points to bank 2 sensor 1; always verify the heater control circuit from the PCM side before condemning the sensor.

Can I keep driving with P0059?

The vehicle remains safe to drive because the heater fault only delays the oxygen sensor from reaching operating temperature, but avoid extended idling and heavy throttle until the engine is warm. Have the fault repaired soon to prevent increased emissions and possible fuel economy loss.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Heat gun or hot air blower
- Wire piercing probes or back probe pins
- Fuse puller and test light



Reading P0059

- 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.
- 59** The exact fault within that area.

Often seen with

P0054 HO2S Heater Resistance (Bank 1 Sensor 2) · **P0055** HO2S Heater Resistance (Bank 1 Sensor 3) · **P0056** HO2S Heater Control Circuit (Bank 2 Sensor 2) · **P0057** HO2S Heater Control Circuit Low (Bank 2 Sensor 2) · **P0058** HO2S Heater Control Circuit High (Bank 2 Sensor 2)

See it working

Watch the animated explainer [How a Jet Engine Works: Two-Spool Turbofan](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p0059/>

