

GENERIC · POWERTRAIN

P0056

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0056

HO2S Heater Control Circuit (Bank 2 Sensor 2)

P0056 indicates that the powertrain control module has detected an open circuit, short to ground, or excessive current draw in the heater circuit for the downstream oxygen sensor on bank 2, which is the side of the engine that does not contain cylinder number one. The computer commands the heater on to bring the sensor up to operating temperature quickly, but the feedback voltage on the control circuit does not match the expected value, so the heater is disabled and the malfunction indicator lamp is illuminated.

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, often with no other noticeable symptoms
- A slight increase in fuel consumption because the downstream sensor stays cold longer and the engine runs richer during warm-up
- Occasional rough idle or hesitation when the engine is first started cold
- A pending or stored oxygen sensor heater circuit code when scanned with a diagnostic tool
- In rare cases, a failed heater element can blow the fuse that powers several sensors, causing multiple codes at once

Common causes, most likely first

- 1 Failed heater element inside the bank 2 sensor 2 oxygen sensor
- 2 Open or damaged wire in the heater power or ground circuit between the sensor and the powertrain control module
- 3 Corroded or loose electrical connector at the oxygen sensor or at the module
- 4 Blown fuse that supplies power to the oxygen sensor heater circuit
- 5 Short to ground or short to voltage on the heater control wire
- 6 Faulty powertrain control module driver for the heater circuit, though this is uncommon



How to diagnose and fix it

- 1 Scan all modules and record freeze-frame data to confirm P0056 is the only heater circuit code and not a companion to a bank 1 or sensor 1 fault
- 2 Inspect the bank 2 sensor 2 connector and the harness for corrosion, chafing, or loose pins, and repair any damage found
- 3 Check the fuse that feeds the oxygen sensor heater circuit and replace it only after confirming the circuit is not shorted
- 4 Measure resistance across the heater element at the sensor connector and compare it to the manufacturer's specification, replacing the sensor if it is open or out of range
- 5 With the key on and the sensor disconnected, check for battery voltage on the heater power wire and good ground on the ground wire
- 6 Command the heater on with a scan tool and measure voltage or current on the control circuit to verify the driver and wiring are intact
- 7 Clear the codes and perform a road test with several cold-start cycles to confirm the repair and that the monitor runs to completion

Why the downstream heater fails first

- The downstream sensor heater is exposed to more condensation and thermal cycling than the upstream sensor, so its element often fails before the sensor's signal accuracy degrades.
- A blown fuse for the oxygen sensor heater circuit frequently takes out power to multiple sensors, so a single P0056 can appear alongside codes for other heaters even though only one sensor is faulty.
- Technicians sometimes replace the sensor only to find the connector pins are pushed back or corroded, so always perform a voltage drop test on both the power and ground sides before condemning the sensor.
- P0056 does not mean the oxygen sensor's signal circuit is bad; the sensor may still report correctly once the engine is warm, and the code is strictly about the heater circuit.
- On some vehicles the heater control is pulse-width modulated, so a standard test light or meter may not show a steady voltage, and a scan tool with bidirectional control is needed to confirm the driver is working.

Can I keep driving with P0056?

The vehicle remains safe to drive because the heater circuit only affects how quickly the downstream sensor reaches operating temperature, but prolonged driving with the code set can increase emissions and fuel consumption slightly. Avoid ignoring the warning light for months, and have the circuit checked at the next convenient service interval.



Tools that help

- OBD-II scan tool with bidirectional control and live data
- Digital multimeter with resistance and voltage scales
- Back probe pins or breakout leads
- Fuse puller and test light
- Vehicle-specific wiring diagram

Reading P0056

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

Often seen with

P0053 HO2S Heater Resistance (Bank 1 Sensor 1) · **P0054** HO2S Heater Resistance (Bank 1 Sensor 2) · **P0055** HO2S Heater Resistance (Bank 1 Sensor 3) · **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 Regenerative Braking Works in Electric Cars](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p0056/>

