

GENERIC · POWERTRAIN

P0146

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0146

O2 Sensor Circuit No Activity Detected (Bank 1 Sensor 3)

P0146 means the engine computer has detected no switching activity from the downstream oxygen sensor on Bank 1, which is the sensor after the catalytic converter on the side of the engine containing cylinder one. The computer expects the sensor's voltage to oscillate within a narrow range once the engine is warm, and it sets this code when the signal stays flat for too long.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Fuel and air metering

Symptoms you may notice

- Illuminated check engine light, often with no other noticeable symptoms
- Slightly rough idle or hesitation on acceleration in some cases
- Poor fuel economy if the sensor has failed in a way that affects fuel trim
- Failed emissions test due to the sensor monitor not completing
- In rare cases, a sulfur or rotten egg smell from the exhaust if the sensor is stuck lean
- No drivability change at all when the fault is limited to the downstream sensor's monitoring circuit

Common causes, most likely first

- 1 Failed downstream oxygen sensor (Bank 1 Sensor 3) due to age or contamination
- 2 Open or shorted wiring in the sensor signal circuit between the sensor and the computer
- 3 Corroded or loose sensor connector pins causing an intermittent signal
- 4 Blown fuse or faulty relay supplying power to the oxygen sensor heater circuit
- 5 Exhaust leak upstream of the sensor allowing outside air to affect the reading
- 6 Failed catalytic converter that no longer stores oxygen, causing the downstream sensor to stay flat
- 7 Engine computer internal fault on the sensor input circuit, though this is rare



How to diagnose and fix it

- 1 Scan all modules for stored codes and freeze-frame data to confirm P0146 is the only oxygen sensor code
- 2 Inspect the sensor wiring and connector for damage, corrosion, or loose pins, and repair as needed
- 3 Check the oxygen sensor heater circuit fuse and relay, and test for battery voltage at the sensor connector with the key on
- 4 Use a scan tool to watch the downstream oxygen sensor voltage in live data; a healthy sensor should switch between roughly 0.1 and 0.9 volts
- 5 Perform a resistance check on the sensor heater element and compare to the manufacturer's specification
- 6 If the signal is flat and wiring is good, replace the downstream oxygen sensor with a direct-fit unit
- 7 Clear codes and complete a drive cycle to verify the repair and confirm the monitor runs without resetting the code

Why a lazy downstream sensor fools many diyers

- A downstream oxygen sensor that stays flat can be caused by a failing catalytic converter rather than the sensor itself, so always compare upstream and downstream switching before condemning the sensor.
- Some vehicles use the downstream sensor to fine-tune fuel trim, so a failed sensor can cause a subtle rich or lean condition that shows up as poor fuel economy rather than a hard fault.
- An exhaust leak between the converter and the sensor draws in outside oxygen and can mimic a dead sensor, so inspect the pipe and gaskets before replacing parts.
- The sensor heater circuit is often overlooked; a blown fuse or bad relay will keep the sensor from reaching operating temperature and set a no-activity code even though the sensor element is fine.
- After replacement, the new sensor may need several drive cycles before the monitor runs, so do not assume the fix failed if the code does not clear immediately.

Can I keep driving with P0146?

You can usually continue driving with P0146 because the downstream sensor mainly monitors catalytic converter efficiency, but avoid long-term driving without diagnosis since a hidden converter or wiring fault can worsen. Have the system inspected soon, especially if you notice poor fuel economy or a rough idle.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Socket set and oxygen sensor wrench
- Wiring diagram for the vehicle
- Jack and jack stands or ramps



Reading P0146

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

Often seen with

P0136 O2 Sensor Circuit Malfunction (Bank 1 Sensor 2) · **P0137** O2 Sensor Circuit Low Voltage (Bank 1 Sensor 2) · **P0138** O2 Sensor Circuit High Voltage (Bank 1 Sensor 2) · **P0141** O2 Sensor Heater Circuit Malfunction (Bank 1 Sensor 2) · **P0420** Catalyst System Efficiency Below Threshold (Bank 1)

See it working

Watch the animated explainer [How the PCV System Works: Crankcase Ventilation](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p0146/>

