

GENERIC · POWERTRAIN

P2218

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P2218

NOx Sensor Heater Control Circuit/Open (Bank 2 Sensor 1)

P2218 indicates that the powertrain control module has detected an open circuit or excessive resistance in the heater circuit of the upstream nitrogen oxide (NOx) sensor on bank 2. The heater element is responsible for bringing the sensor up to operating temperature quickly, and when the circuit is open the sensor cannot function, triggering the malfunction indicator lamp.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Fuel and air metering (injector circuits)

Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms
- Reduced engine performance or power, particularly under load
- Decreased fuel economy due to the system running in a default mode
- Possible rough idle or hesitation if the fault affects closed-loop fueling
- In some vehicles, a message on the driver information center indicating an emissions system fault
- Failure to pass an emissions inspection due to the stored code

Common causes, most likely first

- 1 Open or damaged wiring in the NOx sensor heater circuit, including broken wires or corroded connectors
- 2 Failed NOx sensor heater element, which is internal to the sensor and not serviceable separately
- 3 Blown fuse or faulty relay that supplies power to the NOx sensor heater
- 4 Poor electrical connection at the sensor harness or at the control module
- 5 Corrosion or water intrusion in the connector causing high resistance
- 6 Rarely, a fault in the powertrain control module driver circuit for the heater



How to diagnose and fix it

- 1 Visually inspect the NOx sensor wiring and connector for damage, corrosion, or loose pins, and repair as needed
- 2 Check the fuse and relay that supply power to the NOx sensor heater circuit and replace if faulty
- 3 Measure the resistance of the NOx sensor heater element with a multimeter and compare to the manufacturer's specification
- 4 Perform a voltage drop test on the heater circuit to identify excessive resistance in the wiring
- 5 If the heater resistance is out of specification or the circuit is open internally, replace the NOx sensor
- 6 Clear the diagnostic trouble codes and verify the repair by running the appropriate monitor or test drive

What to check before replacing the NOx sensor

- A blown fuse for the NOx sensor heater is a common cause that is often overlooked because the fuse may also power other circuits, leading to additional codes.
- The heater circuit is separate from the sensor signal circuit, so a P2218 does not necessarily mean the sensor's measuring element is faulty, only its heater.
- On many vehicles, the NOx sensor heater is controlled by the powertrain control module via a pulse-width modulated ground, so a simple voltage test at the connector may not reveal the fault.
- Corrosion inside the connector can mimic a failed sensor, so always inspect and clean the terminals before condemning the sensor.
- Bank 2 Sensor 1 refers to the upstream sensor on the bank of cylinders that does not contain cylinder 1, which can be confusing on V6 and V8 engines.

Can I keep driving with P2218?

The vehicle can generally be driven with this code, but the NOx sensor will not function, which may lead to increased emissions and reduced fuel economy. Avoid long-distance driving or heavy loads until the fault is repaired, and be aware that the vehicle may fail an emissions test.

Tools that help

- OBD-II scan tool
- Digital multimeter
- Wire repair kit
- Fuse puller
- Vehicle service information for wiring diagrams and resistance specifications



Reading P2218

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

Often seen with

P2200 NOx Sensor Circuit (Bank 1 Sensor 1) · **P2217** NOx Sensor Circuit Intermittent Input (Bank 2 Sensor 1) · **P2219** NOx Sensor Heater Control Circuit Low (Bank 2 Sensor 1) · **P229E** NOx Sensor Circuit (Bank 1 Sensor 2) · **P229F** NOx Sensor Circuit Range/Performance Bank 1 Sensor 2

See it working

Watch the animated explainer [How a Knock Sensor Works: Spark Timing and Octane](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p2218/>

