

GENERIC · POWERTRAIN

# P2217

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

## P2217

### NOx Sensor Circuit Intermittent Input (Bank 2 Sensor 1)

P2217 means the engine computer has detected an intermittent or erratic signal from the upstream nitrogen oxide (NOx) sensor on bank 2, which monitors exhaust after the catalytic converter on the side of the engine that does not contain cylinder 1. The computer expects a steady, plausible voltage or current reading from this sensor, and an intermittent input means the signal drops out or jumps around outside the normal range for brief periods.

|            |                     |          |                |                                           |
|------------|---------------------|----------|----------------|-------------------------------------------|
| SYSTEM     | CODE TYPE           | SEVERITY | FIX DIFFICULTY | AREA                                      |
| Powertrain | Generic (all makes) | Medium   | Intermediate   | Fuel and air metering (injector circuits) |

### Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms
- Reduced engine power or limp mode in some vehicles as a protective measure
- Poor fuel economy or increased diesel exhaust fluid (DEF) consumption on diesel applications
- Occasional rough running or hesitation if the fault affects fuel mixture calculations
- Failed emissions test due to increased nitrogen oxide (NOx) output
- In rare cases, a sulfur smell or exhaust odor from the tailpipe

### Common causes, most likely first

- 1 Faulty or degraded NOx sensor on bank 2 sensor 1
- 2 Damaged or corroded wiring harness or connector at the sensor
- 3 Exhaust leaks before the sensor allowing outside air to affect readings
- 4 Contaminated sensor element from excessive oil ash or coolant intrusion
- 5 Software calibration issue in the engine control module (ECM) requiring an update
- 6 Poor electrical ground or voltage supply to the sensor heater circuit
- 7 Failed sensor control module or aftertreatment control unit in some systems



## How to diagnose and fix it

- 1 Scan all modules for stored and pending codes, and record freeze-frame data to understand when the fault occurs
- 2 Visually inspect the NOx sensor, its connector, and the wiring harness for damage, corrosion, or loose pins
- 3 Check for exhaust leaks upstream of the sensor using a smoke machine or visual inspection of gaskets and pipes
- 4 Measure the sensor heater resistance and supply voltage with a multimeter to rule out electrical faults
- 5 Perform a manufacturer-specific NOx sensor functional test or live data review to confirm intermittent signal behavior
- 6 If the sensor is confirmed faulty, replace it with a quality part and clear codes, then verify the repair with a road test
- 7 Check for and install any available ECM software updates that address NOx sensor signal processing

## What most technicians overlook with P2217

- An intermittent NOx sensor code often stems from a poor connection at the sensor plug rather than a failed sensor, so always wiggle-test the harness while watching live data.
- Exhaust leaks upstream of the sensor can dilute the sample with outside air and mimic a sensor fault, so a smoke test is a cheap and decisive check.
- On many diesel vehicles, a weak battery or charging system can cause voltage spikes that disrupt the sensor's sensitive electronics and set intermittent codes.
- Replacing the sensor without checking for a software update may lead to a repeat failure because the ECM may misinterpret normal sensor behavior as intermittent.
- The code can be set by a sensor that is slow to respond rather than completely dead, so a live data graph during a test drive is more revealing than a static resistance check.

## Can I keep driving with P2217?

You can usually continue driving with P2217, but avoid heavy loads or long trips until it is diagnosed, because the fault can increase emissions and may lead to reduced power or fuel economy. If the check engine light starts flashing or you notice severe power loss, stop driving and seek professional help.

## Tools that help

- OBD-II scan tool with live data and graphing capability
- Digital multimeter
- Smoke machine for exhaust leak testing
- Socket set and wrenches for sensor removal
- Manufacturer-specific diagnostic software or app



## Reading P2217

- 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).
- 17** The exact fault within that area.

## Often seen with

**P2200** NOx Sensor Circuit (Bank 1 Sensor 1) · **P2201** NOx Sensor Circuit Range/Performance (Bank 1 Sensor 1) · **P2216** NOx Sensor Circuit High Input (Bank 2 Sensor 1) · **P2218** NOx Sensor Heater Control Circuit/Open (Bank 2 Sensor 1) · **P2A00** O2 Sensor Circuit Range/Performance (Bank 1 Sensor 1)

## 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/p2217/>

