

GENERIC · POWERTRAIN

P2213

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P2213

NOx Sensor Circuit (Bank 2 Sensor 1)

P2213 indicates that the powertrain control module (PCM) has detected an abnormal condition in the nitrogen oxide (NOx) sensor circuit for bank 2 sensor 1, which monitors NOx levels in the exhaust after the catalytic converter on the bank that does not contain cylinder 1. The PCM compares the sensor's signal voltage to expected values and sets this code when the circuit is out of range, indicating a fault in the sensor, its wiring, or the associated processing circuit.

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 performance or power, particularly under load.
- Decreased fuel efficiency as the PCM may alter fuel delivery to compensate.
- Possible rough idle or hesitation during acceleration.
- In some vehicles, a message indicating emissions system fault or service required.
- Failure to pass an emissions inspection due to the stored code.

Common causes, most likely first

- 1 Faulty NOx sensor on bank 2 sensor 1.
- 2 Damaged or corroded wiring or connector at the NOx sensor.
- 3 Open or short circuit in the sensor signal or heater circuit.
- 4 Exhaust leaks upstream of the sensor affecting readings.
- 5 Contaminated sensor element from excessive oil ash or coolant intrusion.
- 6 PCM software issue or internal fault in the NOx sensor processing circuit.



How to diagnose and fix it

- 1 Perform a visual inspection of the NOx sensor, wiring, and connectors for damage or corrosion.
- 2 Check for technical service bulletins (TSBs) or software updates for the PCM related to NOx sensor operation.
- 3 Use a scan tool to monitor NOx sensor live data and compare to specifications.
- 4 Test the sensor heater circuit resistance and supply voltage with a multimeter.
- 5 Inspect for exhaust leaks between the turbocharger and the sensor location.
- 6 Replace the NOx sensor if testing indicates it is faulty.
- 7 Clear the code and perform a drive cycle to verify the repair.

Diagnosing NOx Sensor Circuit Faults

- A common misdiagnosis is replacing the NOx sensor when the actual problem is a corroded connector or chafed wire harness, so always perform a thorough circuit test first.
- Exhaust leaks upstream of the sensor can cause lean or rich readings that mimic a sensor failure, so inspect the exhaust system carefully before condemning the sensor.
- Some vehicles require a relearn or adaptation reset after replacing the NOx sensor, and skipping this step can cause the code to return.
- The NOx sensor is heated, and a failed heater circuit often sets this code without any driveability symptoms, leading owners to ignore it until emissions testing.
- Bank 2 sensor 1 refers to the sensor located after the catalytic converter on the bank that does not contain cylinder 1, which can be confusing on V6 and V8 engines.

Can I keep driving with P2213?

You can generally continue driving with this code, but avoid heavy loads or aggressive acceleration until it is repaired, as prolonged driving may increase emissions and potentially lead to more extensive damage to the emissions system.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Socket set and wrenches
- Wiring diagram for the specific vehicle
- Exhaust leak detector or smoke machine



Reading P2213

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

Often seen with

P2200 NOx Sensor Circuit (Bank 1 Sensor 1) · **P2212** NOx Sensor Heater Sense Circuit Intermittent (Bank 1 Sensor 1) · **P2214** NOx Sensor Circuit Range/Performance (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 Radiator Fan Relay Circuit Works](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p2213/>

