

GENERIC · POWERTRAIN

P2214

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P2214

NOx Sensor Circuit Range/Performance (Bank 2 Sensor 1)

P2214 indicates that the powertrain control module has detected an out-of-range or performance fault in the nitrogen oxide (NOx) sensor circuit for bank 2 sensor 1, which is the upstream NOx sensor on the bank of cylinders that does not contain cylinder one. The computer compares the sensor's signal against expected values for the current engine operating conditions and flags the code when the voltage, current, or response time falls outside the acceptable range.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Generic (all makes)	Medium	Professional	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 consumption
- Rough running, hesitation, or misfire-like behavior under load
- Failed emissions inspection due to increased nitrogen oxide output
- In rare cases, a sulfur or ammonia smell from the exhaust

Common causes, most likely first

- 1 Faulty NOx sensor (bank 2 sensor 1) due to contamination, age, or internal failure
- 2 Damaged, corroded, or disconnected wiring and connectors in the sensor circuit
- 3 Exhaust leaks upstream of the sensor allowing outside air to skew readings
- 4 Contaminated sensor element from excessive oil consumption, coolant intrusion, or fuel additives
- 5 Failed sensor control module or software calibration issue in the powertrain control module
- 6 Restricted or damaged diesel particulate filter affecting exhaust flow and sensor readings
- 7 Low or contaminated diesel exhaust fluid (DEF) causing abnormal NOx levels



How to diagnose and fix it

- 1 Perform a visual inspection of the sensor, wiring harness, and connectors for damage, corrosion, or loose pins
- 2 Check for exhaust leaks between the turbocharger and the NOx sensor using a smoke machine or visual inspection
- 3 Verify diesel exhaust fluid level and quality, and confirm the DEF system is functioning correctly
- 4 Use a scan tool to read live NOx sensor data and compare it to expected values under various engine loads
- 5 Test the sensor circuit for proper voltage, ground, and communication signals according to the manufacturer's procedure
- 6 Replace the bank 2 sensor 1 NOx sensor if testing confirms an internal sensor fault
- 7 Clear the code and perform a road test to verify the repair and ensure the monitor completes

Before you replace the NOx sensor

- A P2214 code is often set by a contaminated sensor rather than a completely failed one, so diagnosing the root cause of contamination such as oil or coolant intrusion is critical to prevent repeat failure.
Exhaust leaks upstream of the sensor are a commonly overlooked cause because they introduce oxygen that skews the NOx reading without triggering a separate leak code.
- The bank 2 sensor 1 designation refers to the upstream sensor on the bank without cylinder one, and on V6 or V8 engines this is often the harder sensor to access, leading to misdiagnosis from improper testing.
- Some vehicles require a software update to the powertrain control module to correct overly sensitive NOx sensor monitoring thresholds before any hardware replacement is attempted.

A weak battery or charging system fault can cause intermittent NOx sensor codes by disrupting the sensor heater circuit, so always verify battery and charging system health first.

Can I keep driving with P2214?

You can generally continue driving with a P2214 code, but avoid heavy loads and long trips until diagnosed, as prolonged driving may increase emissions and lead to more extensive damage to the emissions system. If the vehicle enters limp mode or you notice significant power loss, seek service promptly.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Smoke machine for exhaust leak detection
- Socket and ratchet set
- Manufacturer-specific diagnostic software



Reading P2214

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

Often seen with

P207F Reductant Quality Performance · **P2201** NOx Sensor Circuit Range/Performance (Bank 1 Sensor 1) · **P2213** NOx Sensor Circuit (Bank 2 Sensor 1) · **P2215** NOx Sensor Circuit Low Input (Bank 2 Sensor 1) · **P229E** NOx Sensor Circuit (Bank 1 Sensor 2)

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/p2214/>

