

GENERIC · POWERTRAIN

P013A

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P013A

O2 Sensor Slow Response - Rich to Lean Bank 1 Sensor 2

P013A means the downstream oxygen sensor on bank 1 (sensor 2) is taking too long to switch from a rich to a lean signal. The engine computer commands a lean condition and watches how quickly the sensor voltage drops; if the response is slower than the calibrated threshold, it stores this code.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Generic (all makes)	Low	Intermediate	Fuel and air metering

Symptoms you may notice

- Illuminated check engine light, often with no other noticeable symptoms
- A slight decrease in fuel economy over time
- Occasional rough idle or hesitation during acceleration
- Failed emissions test due to incomplete readiness monitors
- In rare cases, a sulfur or rotten-egg smell from the exhaust

Common causes, most likely first

- 1 Aging or contaminated downstream oxygen sensor (sensor 2) that responds sluggishly
- 2 Exhaust leaks between the sensor and the atmosphere, allowing outside air to affect readings
- 3 Wiring damage or corroded connectors at the sensor or along the harness
- 4 A failing catalytic converter that is not storing and releasing oxygen as designed
- 5 An exhaust leak upstream of the sensor that skews the rich-to-lean transition
- 6 Engine misfires or fuel delivery issues that alter exhaust gas composition
- 7 Use of leaded fuel or silicone-based sealants that poison the sensor



How to diagnose and fix it

- 1 Inspect the downstream oxygen sensor wiring and connector for damage, corrosion, or loose pins
- 2 Check for exhaust leaks around the sensor bung and upstream piping using a smoke test or visual inspection
- 3 Verify the sensor's response with a scan tool by graphing the downstream O2 sensor voltage during a commanded rich-to-lean transition
- 4 Test the sensor's heater circuit resistance and compare to specifications if the sensor is slow to activate
- 5 Replace the downstream oxygen sensor if it fails the response test or shows physical damage
- 6 If the sensor is good, evaluate the catalytic converter's oxygen storage capacity with a scan tool or backpressure test
- 7 Repair any engine performance issues (misfires, fuel trim problems) that could affect exhaust gas composition

What a slow downstream sensor really tells you

- A P013A can be set by a perfectly functional sensor if the catalytic converter is degraded and not switching the exhaust chemistry as expected.
Many technicians replace the downstream sensor only to find the code returns because the root cause is an exhaust leak or a failing converter.
- The downstream sensor's slow response is often a symptom of upstream issues, so always check fuel trims and misfire counters before condemning the sensor.
- Some vehicles require a specific drive cycle to complete the monitor, and the code may not reset immediately after a repair.
Aftermarket sensors with incorrect resistance or slow heating elements can mimic a failing OEM sensor and set this code.

Can I keep driving with P013A?

You can usually continue driving with this code, but avoid heavy acceleration and towing until it is diagnosed. The vehicle may fail an emissions inspection, and prolonged driving with a rich condition can damage the catalytic converter.

Tools that help

- OBD-II scan tool with graphing capability
- Digital multimeter
- Exhaust smoke machine
- Oxygen sensor socket
- Jack and jack stands or ramps



Reading P013A

- 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.
- 3A** The exact fault within that area.

Often seen with

P0133 O2 Sensor Circuit Slow Response (Bank 1 Sensor 1) · **P0134** O2 Sensor Circuit No Activity (Bank 1 Sensor 1) · **P0171** System Too Lean (Bank 1) · **P0300** Random/Multiple Cylinder Misfire Detected · **P0420** Catalyst System Efficiency Below Threshold (Bank 1)

See it working

Watch the animated explainer [How a Helicopter Flies: Rotor and Tail in X-Ray](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p013a/>

