

GENERIC · POWERTRAIN

P015B

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P015B

O2 Sensor Delayed Response - Lean to Rich Bank 1 Sensor 1

P015B indicates that the upstream air-fuel ratio sensor on Bank 1 (Sensor 1) is responding too slowly when the engine transitions from a lean condition to a rich condition. The powertrain control module (PCM) monitors the sensor's voltage or current signal and flags the code when the response time exceeds a calibrated threshold, meaning the sensor is not reacting quickly enough to changing exhaust oxygen levels.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Fuel and air metering

Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms.
- A slight hesitation or stumble during acceleration when the engine is cold or under light load.
- Poor fuel economy as the PCM may default to a richer fuel mixture to compensate for the slow sensor.
- Occasional rough idle or unstable engine speed at stoplights.
- In some cases, a faint sulfur or rotten egg smell from the exhaust due to an overly rich condition.

Common causes, most likely first

- 1 A contaminated or aged oxygen sensor (Bank 1 Sensor 1) that has lost its responsiveness.
- 2 Exhaust leaks upstream of the sensor, allowing outside air to skew the reading and slow the response.
- 3 Wiring or connector issues at the sensor, such as corrosion, chafing, or a loose pin, causing intermittent signal delay.
- 4 A failing mass airflow (MAF) sensor or vacuum leak that creates an erratic air-fuel mixture the sensor cannot track quickly enough.
- 5 Fuel system problems, such as a weak fuel pump or clogged injectors, leading to inconsistent fuel delivery.
- 6 A PCM software calibration issue or, rarely, a faulty PCM driver circuit for the sensor heater.



How to diagnose and fix it

- 1 Perform a visual inspection of the Bank 1 Sensor 1 wiring and connector for damage, corrosion, or loose pins, and repair as needed.
- 2 Check for exhaust leaks between the engine and the sensor using a smoke machine or by listening for ticking sounds when cold.
- 3 Use a scan tool to view live data for the upstream oxygen sensor and compare its response time to the downstream sensor or a known-good value.
- 4 Test the sensor's heater circuit resistance and supply voltage to rule out a heater fault that could delay sensor readiness.
- 5 If the sensor is slow but not failed, perform a propane enrichment test to confirm the sensor's reaction time before replacement.
- 6 Replace the Bank 1 Sensor 1 oxygen sensor with a quality part if diagnostics confirm it is sluggish or contaminated.
- 7 After repair, clear the codes and complete a drive cycle to verify the monitor runs and the code does not return.

What a slow O2 sensor really tells you

- A slow response from the upstream sensor often mimics a lean condition, causing the PCM to add fuel and create a rich-running engine that can eventually damage the catalytic converter.
- Exhaust leaks upstream of the sensor are a commonly missed cause because they introduce outside oxygen that the sensor reads as a lean spike, delaying its switch to rich.
- The code can be set by a lazy sensor that still passes a basic voltage swing test, so comparing its response time to the downstream sensor or using a lab scope is more reliable than a simple pass/fail check.
- A dirty or failing mass airflow sensor can create an erratic mixture that the oxygen sensor cannot track quickly enough, so always check fuel trims and MAF readings before condemning the sensor.
- On some vehicles, a weak battery or charging system can cause voltage drops that affect sensor heater performance and lead to a false slow-response code.

Can I keep driving with P015B?

You can usually continue driving with P015B, but avoid heavy acceleration or towing until it is repaired, as the slow sensor can cause poor fuel economy and eventually damage the catalytic converter. Have the vehicle diagnosed promptly to prevent secondary failures.



Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Propane enrichment tool or smoke machine
- Socket set and oxygen sensor wrench
- Lab scope (optional for response time analysis)

Reading P015B

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.
5B	The exact fault within that area.

Often seen with

P015A O2 Sensor Delayed Response - Rich to Lean Bank 1 Sensor 1 · **P015C** O2 Sensor Delayed Response - Rich to Lean Bank 2 Sensor 1 · **P015D** O2 Sensor Delayed Response - Lean to Rich Bank 2 Sensor 1 · **P0171** System Too Lean (Bank 1) · **P0172** System Too Rich (Bank 1)

See it working

Watch the animated explainer [How a Gyroscope Works: Gimbals and Precession](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p015b/>

