

GENERIC · POWERTRAIN

P01F7

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P01F7

O2 Sensor Signal Biased/Stuck Rich Bank 1 Sensor 4

P01F7 means the powertrain control module (PCM) has detected that the downstream oxygen sensor on bank 1, sensor 4, is reporting a mixture that stays biased rich or stuck rich beyond a calibrated threshold. The PCM monitors this sensor's voltage and compares it to expected behavior; when the signal remains higher than it should for too long, it flags the sensor as biased or stuck rich.

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 decrease in fuel economy as the PCM adds fuel based on the false rich signal
- Possible rough idle or hesitation if the rich bias affects fuel trim enough
- Black sooty exhaust or a strong fuel smell in severe cases
- Failed emissions test due to the sensor monitor not completing or out-of-range readings

Common causes, most likely first

- 1 A failed oxygen sensor that is internally shorted or contaminated, causing a fixed rich bias
- 2 A wiring fault such as a short to voltage or chafed harness between the sensor and PCM
- 3 An exhaust leak upstream of the sensor that draws in air and skews the reading
- 4 A leaking fuel injector or high fuel pressure that genuinely makes the mixture rich
- 5 A restricted air intake or dirty mass airflow sensor causing inaccurate fueling
- 6 A PCM calibration issue or faulty PCM driver for that sensor circuit

How to diagnose and fix it

- 1 Connect a scan tool and record freeze-frame data and fuel trim values to confirm the rich bias
- 2 Visually inspect the sensor, its connector, and the wiring harness for damage or contamination
- 3 Check for exhaust leaks between the engine and the sensor using a smoke test or listening for ticks
- 4 Measure the sensor's signal voltage with a multimeter and compare to the scan tool reading to verify circuit integrity
- 5 Test for a short to voltage on the signal wire with the sensor disconnected and the key on
- 6 Replace the oxygen sensor if it is confirmed stuck rich and the wiring tests good
- 7 Clear the codes and perform a road test to verify the repair and that the monitor completes



Why a rich code may not be the sensor

- A stuck-rich downstream sensor often follows a genuine rich condition upstream, so check fuel trims and injector balance before condemning the sensor.
- Exhaust leaks before the sensor can pull in outside air and cause a lean reading, but a leak after the sensor can trap rich exhaust and falsely bias the sensor rich.
- Contamination from silicone sealants or coolant can coat the sensor element and cause a permanent rich bias that no amount of cleaning will fix.
- Some vehicles use a wideband sensor for sensor 4, and a biased reading may indicate a reference circuit fault rather than a failed sensing element.
- A faulty thermostat that keeps the engine cold can cause the PCM to command a rich mixture, indirectly setting this code without any sensor fault.

Can I keep driving with P01F7?

You can usually drive the vehicle short distances to a repair shop, but avoid heavy acceleration or towing because the rich condition can damage the catalytic converter over time. If the check engine light is flashing or you notice rough running, stop driving and seek immediate service.

Tools that help

- OBD-II scan tool with live data and freeze-frame capability
- Digital multimeter with back-probing pins
- Smoke machine for exhaust leak testing
- Fuel pressure gauge
- Socket set and oxygen sensor wrench

Reading P01F7

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.
F7	The exact fault within that area.

Often seen with

P0132 O2 Sensor Circuit High Voltage (Bank 1 Sensor 1) · **P0152** O2 Sensor Circuit High Voltage (Bank 2 Sensor 1) · **P0172** System Too Rich (Bank 1) · **P0175** System Too Rich (Bank 2) · **P0420** Catalyst System Efficiency Below Threshold (Bank 1)



See it working

Watch the animated explainer [Excavator Simulator: Hydraulics You Can Operate](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p01f7/>

