

GENERIC · POWERTRAIN

P01F2

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P01F2

O2 Sensor Circuit Low Voltage Bank 1 Sensor 4

P01F2 means the powertrain control module has detected a low-voltage condition on the downstream oxygen sensor circuit for bank 1 sensor 4, which monitors post-catalytic converter oxygen content on that bank. The computer compares the sensor signal to an expected voltage range and flags the circuit when the signal stays below the calibrated threshold for too long.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Low

FIX DIFFICULTY

Intermediate

AREA

Fuel and air metering

Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms
- Slightly reduced fuel economy as the computer substitutes a default value for the faulty sensor signal
- A pending or stored P01F2 code with no drivability complaint in many cases
- Occasional rough idle or hesitation if the low signal skews fuel trim on bank 1
- Failed emissions inspection due to the oxygen sensor monitor not completing or reporting a fault

Common causes, most likely first

- 1 A failed or contaminated oxygen sensor on bank 1 sensor 4
- 2 A damaged, corroded, or disconnected electrical connector at the sensor
- 3 A chafed or open signal wire between the sensor and the powertrain control module
- 4 A poor ground connection for the sensor heater or signal return circuit
- 5 An exhaust leak upstream of the sensor allowing outside air to affect the reading
- 6 A short to ground on the signal circuit pulling the voltage below the expected range
- 7 A rare internal fault in the powertrain control module driver circuit



How to diagnose and fix it

- 1 Connect a scan tool and record the freeze-frame data and oxygen sensor voltage readings for bank 1 sensor 4
- 2 Visually inspect the sensor, connector, and wiring harness for damage, corrosion, or loose pins
- 3 Check the sensor heater resistance and signal circuit continuity with a digital multimeter against the manufacturer's specification
- 4 Inspect for exhaust leaks upstream of the sensor that could introduce false air
- 5 Backprobe the signal wire at the powertrain control module to confirm whether the low voltage originates at the sensor or in the harness
- 6 Replace the oxygen sensor if the circuit tests good but the signal remains stuck low
- 7 Clear the codes and complete a drive cycle to verify the oxygen sensor monitor passes

Why this sensor often gets replaced unnecessarily

- A low-voltage code on a downstream oxygen sensor is frequently caused by a poor ground or a chafed wire rather than the sensor itself, so circuit testing before replacement saves money.
- An exhaust leak just ahead of the sensor can pull in outside air and drive the signal low, mimicking a failed sensor even when the sensor is healthy.
- Some vehicles set this code when the sensor heater circuit fails, because a cold sensor cannot produce a valid signal, so always check heater resistance first.
- The downstream sensor on bank 1 sensor 4 may be located after a secondary catalytic converter on V8 and V10 engines, making access and heat damage more likely than on the primary sensor.
- A low signal can also be caused by a short to ground in the harness where it rubs against the frame or exhaust shield, which a simple sensor swap will not fix.

Can I keep driving with P01F2?

The vehicle is generally safe to drive with this code because the fault affects emissions monitoring more than immediate drivability, but avoid long-term driving with the check engine light on. Have the circuit inspected soon to prevent secondary damage and to ensure the vehicle passes emissions testing.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Backprobe pins or breakout leads
- Jack and jack stands or ramps for under-vehicle access
- Wiring diagram for the oxygen sensor circuit



Reading P01F2

- 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.
- F2** The exact fault within that area.

Often seen with

P0137 O2 Sensor Circuit Low Voltage (Bank 1 Sensor 2) · **P0141** O2 Sensor Heater Circuit Malfunction (Bank 1 Sensor 2) · **P0157** O2 Sensor Circuit Low Voltage (Bank 2 Sensor 2) · **P01F1** O2 Sensor Circuit Bank 1 Sensor 4 · **P01F3** O2 Sensor Circuit High Voltage Bank 1 Sensor 4

See it working

Watch the animated explainer [How a Fuel Injector Works: Pulse Width and Spray](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p01f2/>

