

FORD · POWERTRAIN

P1128

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1128 · Ford

Upstream Heated Oxygen Sensor Signals Reversed

P1128 on Ford vehicles means the powertrain control module (PCM) has detected that the two upstream heated oxygen sensor (HO2S) signals are reversed, so the sensor that should report bank 1 activity is reporting bank 2 activity and vice versa. The PCM compares the switching patterns of both upstream sensors and flags this code when their expected voltage behaviors are swapped, which usually points to crossed sensor connectors, a harness routing error, or a sensor installed in the wrong bank.

SYSTEM

Powertrain

CODE TYPE

Ford specific

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Fuel and air metering

Symptoms you may notice

- Often no symptoms besides the warning light, especially if the sensors are simply plugged into the wrong connectors.
- Rough idle or unstable idle quality because fuel trim corrections are being applied to the wrong cylinder bank.
- Poor fuel economy as the PCM struggles to balance air-fuel ratio using reversed feedback.
- Hesitation or stumble during acceleration when the engine is under load.
- A noticeable sulfur or rotten-egg smell from the exhaust if the reversed signals cause an overly rich condition.
- Possible misfire codes or lean/rich codes for the wrong bank if the condition persists.

Common causes, most likely first

- 1 Upstream oxygen sensor electrical connectors swapped left-to-right, either at the sensors or at the harness junctions.
- 2 Oxygen sensor harness routed incorrectly during a previous repair, crossing bank 1 and bank 2 wiring.
- 3 A replacement upstream sensor installed in the wrong bank, so its signal does not match the PCM's expected cylinder bank.
- 4 Chafed or damaged wiring in the upstream sensor circuits that causes the two signal wires to short or cross.
- 5 A faulty upstream heated oxygen sensor that produces a switching pattern the PCM interprets as reversed.
- 6 PCM calibration or internal driver issue, though this is rare and should only be considered after all wiring and sensor checks pass.



How to diagnose and fix it

- 1 Verify the code with a scan tool and check freeze-frame data to confirm both upstream oxygen sensors are switching and whether their signals appear swapped.
- 2 Visually inspect the upstream oxygen sensor connectors and harness routing on both banks to confirm bank 1 and bank 2 connectors are not crossed.
- 3 Compare the live upstream oxygen sensor voltages on both banks while revving the engine; a reversed pattern confirms the signal swap.
- 4 Check the sensor part numbers and installation positions to ensure the correct sensor is in the correct bank.
- 5 Perform a wiggle test on the upstream sensor harnesses while watching live data to expose intermittent shorts or crossed wires.
- 6 Repair any crossed or damaged wiring, reconnect the sensors to the correct banks, and clear the code.
- 7 Road test the vehicle through a complete drive cycle to confirm the code does not return and fuel trims stay within normal range.

Check connectors before replacing sensors

- A very common cause of P1128 is a previous repair where the upstream oxygen sensor connectors were accidentally swapped, so always trace both harnesses before condemning a sensor.
- The code does not automatically mean a sensor has failed; the PCM is reporting a signal relationship problem, and the sensors themselves may be working perfectly.
- On some Ford engines the bank 1 and bank 2 upstream sensor connectors are physically identical and close together, making it easy to plug them into the wrong side during service.
- A reversed signal can also be caused by a replacement sensor with the wrong connector keyway or an aftermarket sensor that does not match the original pinout.
- If the code appears after engine work that involved removing the exhaust or sensors, suspect crossed wiring or swapped sensor positions before any electrical diagnosis.

Can I keep driving with P1128?

You can drive the vehicle short distances to a repair shop, but avoid heavy acceleration and long trips because the reversed oxygen sensor signals can cause poor fuel control and eventually damage the catalytic converter. If the check engine light starts flashing or the engine runs poorly, stop driving and have it towed.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Wiring diagram for the specific Ford model and engine
- Jack and jack stands or ramps for access to the sensors
- Basic hand tools for connector and harness inspection



Reading P1128

- P** Powertrain: engine, transmission and emissions.
- 1** Manufacturer-specific code (Ford): its meaning depends on the make.
- 1** Fuel and air metering.
- 28** The exact fault within that area.

Often seen with

P0130 O2 Sensor Circuit Malfunction (Bank 1 Sensor 1) · **P0133** O2 Sensor Circuit Slow Response (Bank 1 Sensor 1) · **P0150** O2 Sensor Circuit Malfunction (Bank 2 Sensor 1) · **P0153** O2 Sensor Circuit Slow Response (Bank 2 Sensor 1) · **P0171** System Too Lean (Bank 1)

See it working

Watch the animated explainer [How Hydraulic Brakes Work: Pedal to Caliper](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/ford-p1128/>

