

VOLKSWAGEN · POWERTRAIN

P1189

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1189 · Volkswagen

Linear Oxygen Sensor Compensation Resistor Short To B+

P1189 on Volkswagen vehicles indicates that the engine control module has detected a short to battery voltage on the compensation resistor circuit of the linear oxygen sensor, which is the wideband air-fuel ratio sensor. The compensation resistor is a calibrated element inside the sensor that allows the controller to precisely trim the sensor's output, and a short to B+ means the signal wire is seeing abnormal positive voltage instead of the expected reference.

SYSTEM

Powertrain

CODE TYPE

Volkswagen specific

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
- Rough idle or unstable engine operation if the sensor feedback is corrupted
- Poor fuel economy or rich-running condition as the controller defaults to a safe strategy
- Hesitation or stumble during acceleration in some cases
- Failed emissions test due to incorrect air-fuel ratio control
- In rare cases, a no-start or stalling condition if the short affects shared sensor supply wiring

Common causes, most likely first

- 1 Chafed or shorted wire in the linear oxygen sensor harness contacting a positive voltage source
- 2 Failed linear oxygen sensor with an internal short in the compensation resistor circuit
- 3 Corroded or contaminated connector pins at the sensor or engine control module
- 4 Water intrusion into the sensor connector or wiring loom causing a conductive path
- 5 Engine control module internal fault driving voltage onto the compensation resistor circuit
- 6 Aftermarket sensor or wiring repair with incorrect pinout or poor insulation



How to diagnose and fix it

- 1 Scan all modules and record freeze-frame data to confirm P1189 is active and not a stored history code
- 2 Visually inspect the linear oxygen sensor harness for chafing, pinching, or contact with hot or moving components
- 3 Disconnect the sensor and measure resistance and voltage on the compensation resistor circuit to check for a short to B+
- 4 Check the sensor connector for corrosion, water intrusion, and bent pins, then clean and reseat if needed
- 5 Substitute a known-good linear oxygen sensor and clear codes to see if the fault returns
- 6 If the fault persists, perform a continuity and short-to-power test on the wiring between the sensor and the engine control module
- 7 Repair or replace the affected harness section or, as a last resort, the engine control module after confirming all other possibilities

What the compensation resistor really does

- The compensation resistor is a laser-trimmed element inside the wideband sensor that calibrates the pump cell current, so a short to B+ can set this code even when the sensor still appears to respond on a scan tool.
- A common misdiagnosis is replacing the oxygen sensor immediately, but chafed harness wiring near the exhaust manifold or transmission bell housing often causes the short and the new sensor will not fix it.
- Volkswagen linear oxygen sensors are sensitive to contamination from silicone sprays or coolant leaks, which can alter the resistor value and trigger this code without any visible wiring damage.
- This code can be set intermittently by water ingress into the connector after engine washing or heavy rain, so a dry-out and dielectric grease application may resolve it without parts replacement.
- Technicians should verify the sensor part number matches the vehicle's engine code, because incorrect aftermarket sensors with different resistor values can set P1189 even when installed correctly.

Can I keep driving with P1189?

You can usually drive the vehicle short distances to a repair shop, but avoid sustained heavy acceleration or towing because the engine may run rich and dilute the oil. If the check engine light flashes or the engine runs poorly, stop driving and have it diagnosed promptly.

Tools that help

- OBD-II scan tool with manufacturer-specific code reading capability
- Digital multimeter with resistance and voltage measurement
- Wiring diagram for the specific Volkswagen model and engine code
- Back probe pins and jumper wires for circuit testing
- Dielectric grease and electrical contact cleaner



Reading P1189

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

Often seen with

P0130 O2 Sensor Circuit Malfunction (Bank 1 Sensor 1) · **P0131** O2 Sensor Circuit Low Voltage (Bank 1 Sensor 1) · **P0132** O2 Sensor Circuit High Voltage (Bank 1 Sensor 1) · **P0133** O2 Sensor Circuit Slow Response (Bank 1 Sensor 1) · **P2237** O2 Sensor Positive Current Control Circuit/Open (Bank 1 Sens

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/volkswagen-p1189/>

