



P1151 · BMW

O2 Sensor Heater Circuit Signal Intermittent Bank 2 Sensor 1

P1151 on a BMW indicates that the engine control module (DME) has detected an intermittent fault in the heater circuit for the pre-catalyst oxygen sensor on bank 2, sensor 1. The heater is responsible for bringing the sensor up to operating temperature quickly, and an intermittent signal means the circuit is making and breaking contact rather than failing completely. This can cause the sensor to respond slowly during cold starts, potentially affecting fuel trim and emissions.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	BMW specific	Low	Intermediate	Fuel and air metering

Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms.
- Rough running or hesitation during cold starts until the engine warms up.
- Slightly increased fuel consumption, especially in short-trip driving.
- Intermittent poor idle quality that may come and go.
- Failed emissions inspection due to readiness monitors not setting.
- In rare cases, a stored pending code or limp mode if the fault escalates.

Common causes, most likely first

- 1 Chafed or cracked wiring in the oxygen sensor heater circuit, often near the exhaust manifold or connector.
- 2 Corroded or loose electrical connector at the bank 2 sensor 1 oxygen sensor.
- 3 Internal intermittent failure of the oxygen sensor heater element itself.
- 4 Faulty oxygen sensor relay or fuse supplying power to the heater circuit.
- 5 Damaged pins or terminals in the DME connector causing an intermittent signal.
- 6 Engine wiring harness damage from heat, vibration, or previous repairs.



How to diagnose and fix it

- 1 Perform a visual inspection of the bank 2 sensor 1 oxygen sensor wiring and connector for damage, corrosion, or loose pins.
- 2 Check the oxygen sensor heater circuit fuse and relay, and verify power and ground at the sensor connector with a multimeter.
- 3 Wiggle-test the wiring harness while monitoring heater circuit resistance or voltage to reproduce the intermittent fault.
- 4 Measure the heater element resistance at the sensor itself and compare to BMW specifications; replace the sensor if out of range or intermittent.
- 5 If the sensor and wiring check out, inspect the DME connector and terminals for corrosion or loose pins, and repair as needed.
- 6 Clear the fault codes and perform a road test with live data to confirm the heater circuit operates correctly and the code does not return.

Intermittent O2 heater faults on BMW

- A common oversight is replacing the oxygen sensor without addressing a chafed wire that only loses contact when the engine moves under load, so the new sensor suffers the same intermittent fault.
- The heater circuit is powered through a fuse and relay that can develop high resistance or intermittent operation, and testing them under load is more reliable than a simple continuity check.
- On many BMW engines, the bank 2 sensor 1 connector is difficult to reach and the wiring is routed close to hot components, making heat damage a frequent root cause that is easily missed.
- An intermittent heater circuit can set P1151 without ever illuminating the check engine light if the fault is brief, so a scan tool with freeze-frame data is essential to confirm the conditions.
- Do not assume the sensor is faulty just because the code points to it; the DME detects voltage drops or current irregularities that can originate anywhere in the circuit, including the ground path.

Can I keep driving with P1151?

The vehicle is generally safe to drive with this code because the fault is intermittent and the engine management system can compensate, but avoid extended idling or heavy load until repaired. Have the circuit inspected soon to prevent worsening symptoms or emissions test failure.

Tools that help

- OBD-II scan tool with live data and freeze-frame capability
- Digital multimeter with min/max recording
- Wiring diagram for the specific BMW model
- Back probe pins and jumper wires
- Heat gun or hair dryer for thermal testing of the circuit



Reading P1151

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

Often seen with

P1150 Oxygen Sensor Control Bank 2 Out Of Range · **P1152** Bank 1 Long Term Fuel Trim Range 2 Lower Lean Limit Exceeded · **P1150** Air/Fuel Sensor Circuit Range Performance Bank 1 Sensor 2 · **P1150** Front Oxygen Sensor Heater Circuit High Input · **P1150** HO2S Bank 2 Sensor 1 Not Switching Fuel Control Limit Reached · **P1152** HO2S Bank 2 Sensor 1 Signal Above 0.45v AF Ratio Too Rich · **P1150** Lack of Upstream Heated Oxygen Sensor Switch Adaptive Fuel L · **P1152** Lack of Upstream Heated Oxygen Sensor Switch Sensor Indicate · **P1152** O2 Sensor Heater Circuit Low Voltage Bank 2 Sensor 1 · **P0135** O2 Sensor Heater Circuit Malfunction (Bank 1 Sensor 1) · **P0141** O2 Sensor Heater Circuit Malfunction (Bank 1 Sensor 2) · **P0155** O2 Sensor Heater Circuit Malfunction (Bank 2 Sensor 1)

See it working

Watch the animated explainer [How an EGR Valve Works: Exhaust Gas Recirculation](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/bmw-p1151/>

