

BMW · POWERTRAIN

**P1187**

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1187 · BMW

## O2 Sensor Heater Control Circuit Bank 2 Sensor 2

P1187 on BMW vehicles indicates that the engine control module has detected a problem with the heater circuit for the downstream oxygen sensor on bank 2, which is the sensor after the catalytic converter. The computer monitors the heater's electrical current and expects it to draw a specific amperage when commanded on; if the current is too low, too high, or absent, it sets this code.

SYSTEM

Powertrain

CODE TYPE

BMW specific

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 higher fuel consumption due to the sensor not reaching operating temperature quickly
- A pending or stored code that may cause the vehicle to fail an emissions inspection
- In rare cases, a rough idle or hesitation when the engine is cold if the sensor feedback is affected
- No drivability issues in most cases because the downstream sensor mainly monitors catalyst efficiency

### Common causes, most likely first

- 1 Failed oxygen sensor heater element inside the bank 2 sensor 2
- 2 Open or shorted wiring in the heater circuit between the sensor and the engine control module
- 3 Corroded or damaged electrical connector at the oxygen sensor
- 4 Blown fuse that supplies power to the oxygen sensor heater circuit
- 5 Faulty engine control module driver for the heater circuit (rare)
- 6 Exhaust leaks or contamination that damage the sensor over time

### How to diagnose and fix it

- 1 Use a scan tool to verify the code and check for any related oxygen sensor or heater circuit codes
- 2 Inspect the oxygen sensor connector and wiring for corrosion, damage, or loose pins
- 3 Check the fuse that powers the oxygen sensor heater circuit and replace if blown
- 4 Measure the resistance of the heater element across the sensor terminals and compare to specification
- 5 Check for battery voltage at the heater supply wire with the key on and engine off
- 6 Test the heater control wire for continuity and shorts to ground or power
- 7 If all electrical checks pass, replace the bank 2 sensor 2 oxygen sensor and clear the code



## Don't overlook the heater fuse and wiring

- A blown fuse for the oxygen sensor heater circuit is a common cause that is often overlooked because the fuse may also power other components, so always check it first.
- The heater element can fail intermittently, so a resistance check when the engine is cold may not reveal the fault; wiggle the harness and test again after warming the engine.
- A P1187 code does not always mean the sensor is bad; corroded connector pins can mimic a failed heater and are a frequent misdiagnosis trap.
- On some BMW models, the oxygen sensor heater circuit is shared with other emissions components, so a fault elsewhere can set this code.
- Replacing the sensor without checking the heater circuit voltage can lead to a repeat failure if the root cause is a wiring short or a faulty control module.

## Can I keep driving with P1187?

You can continue driving with this code because the downstream oxygen sensor heater mainly affects emissions and cold-start efficiency, not immediate safety. However, avoid long-term driving with the check engine light on, as it may mask other issues and will cause an emissions test failure.

## Tools that help

- OBD-II scan tool
- Digital multimeter
- Wire probe set
- Fuse puller
- Socket set and oxygen sensor wrench

## Reading P1187

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

## Often seen with

**P1186** Linear Oxygen Sensor Common Ground Short To B+ · **P1186** O2 Sensor Heater Circuit Shorted, Hardware Fault · **P1186** Engine Oil Temperature Circuit Performance · **P1186** FTS Low Fuel Pump Temperature Sensor Low · **P1186** EOT Circuit Performance · **P1186** O2 Sensor Heater Control Circuit Bank 1 Sensor 2 · **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) · **P0161** O2 Sensor Heater Circuit Malfunction (Bank 2 Sensor 2)



## See it working

Watch the animated explainer [How a Jet Engine Works: Two-Spool Turbofan](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/bmw-p1187/>

