

BMW · POWERTRAIN

P1139

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1139 · BMW

O2 Sensor Heater Circuit High Voltage Bank 1 Sensor 2

P1139 on a BMW means the engine computer (DME) has detected an abnormally high voltage on the heater circuit for the post-catalyst oxygen sensor on Bank 1, which is Sensor 2. The heater is designed to bring the sensor up to operating temperature quickly, and a high-voltage reading tells the DME that the circuit is drawing too little current or is open, so the sensor will not heat properly and closed-loop fuel control may be affected.

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

Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms
- A slight increase in fuel consumption because the post-catalyst sensor stays cold and the DME may run a richer default mixture
- Occasional rough idle or hesitation when the engine is cold, as the sensor does not reach operating temperature quickly
- A stored pending or confirmed fault code that returns shortly after being cleared
- In some cases, a noticeable delay in the oxygen sensor readiness monitor completing during an emissions test
- No drivability complaints at all when the heater circuit fails open but the sensor signal itself remains intact

Common causes, most likely first

- 1 Open or damaged heater element inside the Bank 1 Sensor 2 oxygen sensor itself, which is the most common cause on higher-mileage BMW engines
- 2 Corroded, backed-out, or damaged pins in the oxygen sensor connector or the corresponding DME harness connector
- 3 Broken or chafed heater circuit wiring between the sensor and the DME, often near the exhaust manifold heat shield or along the transmission tunnel
- 4 Blown fuse that supplies the oxygen sensor heater circuit, sometimes shared with other emissions-related components
- 5 Failed DME heater driver circuit, which is rare but possible after a short circuit or water intrusion into the electronics box
- 6 High resistance in the heater circuit ground path, typically at a chassis ground point near the engine or transmission



How to diagnose and fix it

- 1 Clear the fault code and verify with a scan tool that P1139 returns, then check the freeze-frame data to confirm the engine was cold when the fault set
- 2 Inspect the Bank 1 Sensor 2 oxygen sensor connector and the DME harness connector for corrosion, loose pins, or pushed-out terminals, and repair as needed
- 3 Measure the resistance of the oxygen sensor heater element across the two heater pins with a multimeter and compare to BMW specifications; an open circuit confirms a failed sensor
- 4 Check the heater circuit fuse and verify battery voltage is present at the sensor connector with the key on and engine off
- 5 Perform a voltage drop test on the heater ground circuit and the power feed to rule out high-resistance wiring before condemning the sensor
- 6 If wiring and fuses are good but the heater resistance is out of spec, replace the Bank 1 Sensor 2 oxygen sensor with a quality OEM or equivalent part
- 7 After repair, clear the codes, run the engine through a complete drive cycle, and confirm the oxygen sensor heater monitor and the post-catalyst monitor both pass

What a high-voltage heater code really means

- A high-voltage code on a heater circuit almost always means the circuit is open or has excessive resistance, not that the sensor is receiving too much voltage, so technicians who chase a short to power waste time.
- The post-catalyst sensor on BMW engines often fails its heater element long before the sensing element degrades, so a P1139 does not automatically mean the sensor's signal is inaccurate.
- A corroded connector pin at the sensor can mimic a failed heater element, and replacing the sensor without inspecting the plug often leads to the same code returning within a few days.
- On some BMW models the oxygen sensor heater fuse is shared with the secondary air pump or another emissions component, so a blown fuse may set additional codes that point away from the real problem.
- The DME may set P1139 only during a cold-start heater test, so a sensor that works fine when warm can still be the cause and should be tested when the engine is at ambient temperature.

Can I keep driving with P1139?

You can usually continue driving with P1139 because the engine will still run, but the post-catalyst sensor will not heat properly and fuel economy or emissions may suffer. Avoid long periods of idling and have the fault diagnosed soon, especially if you need to pass an emissions inspection.



Tools that help

- OBD-II scan tool with BMW-specific software or a capable generic scan tool that can read freeze-frame data
- Digital multimeter with resistance and voltage measurement capability
- Back probe pins or breakout leads for testing the oxygen sensor connector without damaging it
- Wiring diagram for the specific BMW model and engine to identify heater circuit pins and fuse locations
- Oxygen sensor socket and hand tools for sensor replacement if testing confirms a failed heater

Reading P1139

P Powertrain: engine, transmission and emissions.

1 Manufacturer-specific code (BMW): its meaning depends on the make.

1 Fuel and air metering.

39 The exact fault within that area.

Often seen with

P1129 Long Term Fuel Trim Bank 2 System Too Rich · **P1129** Electric Throttle Control System · **P1129** MAP Higher Than Expected · **P1129** Downstream HO2S Sensors Swapped · **P1129** MAP Higher Than Expected · **P1129** Downstream Heated Oxygen Sensor Signals Reversed · **P0130** O2 Sensor Circuit Malfunction (Bank 1 Sensor 1) · **P0135** O2 Sensor Heater Circuit Malfunction (Bank 1 Sensor 1) · **P0136** O2 Sensor Circuit Malfunction (Bank 1 Sensor 2) · **P0141** O2 Sensor Heater Circuit Malfunction (Bank 1 Sensor 2)

See it working

Watch the animated explainer [How a Supercharger Works: Roots Blower in X-Ray](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/bmw-p1139/>

