

SUBARU · POWERTRAIN

P1151

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1151 · Subaru

Rear Oxygen Sensor Heater Circuit High Input

P1151 on a Subaru means the engine control module (ECM) has detected an abnormally high voltage on the rear oxygen sensor heater circuit, which points to an open circuit, high resistance, or a short to voltage in that heater wiring. The ECM commands the heater on to bring the sensor up to operating temperature quickly, and it monitors the circuit for expected voltage drop; a high input tells the ECM the heater is not drawing the current it should.

SYSTEM

Powertrain

CODE TYPE

Subaru 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
- Slightly higher fuel consumption because the rear sensor stays cold longer and the ECM may run a richer default mixture
- Occasional rough idle or hesitation when the engine is cold and the heater cannot warm the sensor
- A pending or stored P1151 that returns quickly after clearing if the circuit fault is hard
- In some cases, a faint electrical smell or visible damaged wiring near the rear sensor connector

Common causes, most likely first

- 1 Open or broken wire in the rear oxygen sensor heater circuit, often from corrosion or flex fatigue near the connector
- 2 Failed rear oxygen sensor heater element (open circuit inside the sensor)
- 3 High resistance at the rear sensor connector pins, typically from water intrusion or green corrosion
- 4 Short to voltage on the heater control wire, which can be caused by chafed harness insulation against a power wire
- 5 Faulty ECM driver for the rear heater circuit, though this is far less common than wiring or sensor faults
- 6 Blown fuse or poor ground for the heater circuit, which can mimic a high-input condition depending on circuit design



How to diagnose and fix it

- 1 Clear the code and road-test to confirm P1151 returns; note any freeze-frame data such as engine coolant temperature and time since start
- 2 Inspect the rear oxygen sensor connector and harness for corrosion, water intrusion, chafed insulation, or a loose pin fit
- 3 Measure the resistance of the rear oxygen sensor heater element across its two heater pins and compare to the manufacturer's specification for your Subaru model
- 4 Check for battery voltage on the heater supply wire with the key on and engine off, then check the heater control wire for a short to voltage with the ECM disconnected
- 5 Perform a voltage drop test on the heater ground circuit and repair any excessive resistance in the ground path
- 6 If wiring and connector tests pass, substitute a known-good rear oxygen sensor and recheck; replace the sensor only after confirming the circuit is intact
- 7 After repair, clear codes and complete a drive cycle that includes cold start and closed-loop operation to verify the heater monitor runs and passes

Rear heater circuit faults that fool technicians

- A high-input code does not automatically mean the sensor is bad; a corroded connector pin or a broken heater wire often sets P1151 while the sensor element itself is still healthy.
- On many Subaru models the rear oxygen sensor heater shares a ground point with other engine sensors, so a loose or corroded ground can set P1151 along with unrelated codes and send you chasing the wrong circuit.
- Water intrusion into the rear sensor connector is a common cause on vehicles driven in wet or salty conditions, and the corrosion can be hidden inside the boot where a quick visual check misses it.
- A short to voltage on the heater control wire can be intermittent and only set the code when the harness flexes over bumps, so a wiggle test of the harness while monitoring heater voltage is often more revealing than a static resistance check.
- Replacing the rear oxygen sensor without checking the heater circuit resistance and voltage drop first is the most common misdiagnosis; the new sensor will set the same code if the wiring fault remains.

Can I keep driving with P1151?

You can usually drive the vehicle with P1151 set, but the rear oxygen sensor may stay cold longer and the ECM could run a richer mixture, which hurts fuel economy and can eventually damage the catalytic converter. Avoid long periods of idling and get the circuit diagnosed soon, especially if the check engine light flashes or other codes appear.



Tools that help

- OBD-II scan tool with live data and freeze-frame capability
- Digital multimeter with resistance and voltage drop functions
- Back-probe pins or breakout leads for connector testing
- Wiring diagram for the specific Subaru model and engine
- Socket or wrench set for oxygen sensor removal if replacement is needed

Reading P1151

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

Often seen with

P1152 Bank 1 Long Term Fuel Trim Range 2 Lower Lean Limit Exceeded · **P1153** Air/Fuel Sensor Circuit Response Bank 1 Sensor 2 · **P1152** HO2S Bank 2 Sensor 1 Signal Above 0.45v AF Ratio Too Rich · **P1153** Bank 2 Fuel Control Shifted Lean FAOSC · **P1153** O2 Sensor Low Switching (Bank 2 Sensor 1) · **P1152** Lack of Upstream Heated Oxygen Sensor Switch Sensor Indicate · **P1153** Bank 2 Fuel Control Shifted Lean · **P1153** HO2S Insufficient Switching · **P1152** O2 Sensor Heater Circuit Low Voltage Bank 2 Sensor 1 · **P1153** O2 Sensor Heater Circuit High Voltage Bank 2 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 Drive-by-Wire Works: Electronic Throttle Body](#) on Auto Veteran to see the parts involved moving.

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

