

VOLKSWAGEN · POWERTRAIN

P1118

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1118 · Volkswagen

Oxygen Sensor Heater Circuit Open Bank 1 Sensor 2

P1118 on Volkswagen vehicles means the engine control module has detected an open circuit in the heater element of the downstream oxygen sensor on bank 1, which is the sensor after the catalytic converter. The heater is a resistive element inside the sensor that brings it up to operating temperature quickly, and an open circuit means the control module sees no current flow through that heater circuit when it commands it on.

SYSTEM

Powertrain

CODE TYPE

Volkswagen specific

SEVERITY

Low

FIX DIFFICULTY

Intermediate

AREA

Fuel and air metering

Symptoms you may notice

- Illuminated check engine light, often the only noticeable symptom
- Slightly higher fuel consumption during cold starts because the downstream sensor stays cold longer
- A pending or stored P1118 with no drivability complaint in most cases
- Occasional rough running or hesitation during the first minute after a cold start on some cars
- In rare cases, a slight exhaust smell or elevated emissions at idle when the sensor never reaches temperature

Common causes, most likely first

- 1 Failed heater element inside the bank 1 sensor 2 oxygen sensor
- 2 Broken or corroded wire in the sensor heater circuit between the sensor and the control module
- 3 Loose, water-intruded or backed-out terminal at the oxygen sensor connector
- 4 Blown fuse or faulty relay supplying power to the oxygen sensor heater circuit
- 5 Damaged pin or open trace inside the engine control module heater driver, usually after a shorted sensor
- 6 Rodent damage or chafing of the heater wiring harness near the exhaust or underbody



How to diagnose and fix it

- 1 Scan all modules and record freeze-frame data to confirm the fault is present and not a historic memory
- 2 Inspect the bank 1 sensor 2 connector and harness for corrosion, water intrusion, chafing or rodent damage
- 3 Check the oxygen sensor heater fuse and relay, then verify battery voltage at the heater supply wire with the key on
- 4 Measure heater resistance across the sensor-side heater terminals and compare with the Volkswagen specification for that engine
- 5 With the sensor disconnected, check for continuity and voltage drop on the ground and signal-return side of the heater circuit back to the control module
- 6 If wiring and supply check out, replace the bank 1 sensor 2 oxygen sensor with the correct part for the engine code
- 7 Clear the fault memory, run a cold-start readiness cycle and confirm the heater monitor passes without the code returning

What the heater circuit test really checks

- A P1118 can be set by a heater circuit that is open only when cold, so a resistance check on a warm engine may look normal and send you chasing the wrong part.
- Volkswagen control modules often set this code when the heater driver has been damaged by a shorted sensor, so replacing the sensor without checking the driver can leave the new sensor dead on arrival.
- The downstream sensor heater is not needed for fuel control, which is why many cars with P1118 drive perfectly normally and the fault is missed until an emissions test.
- Corrosion inside the connector pins at the sensor is a common cause on cars that see road salt, and it can mimic a failed heater even when the sensor element itself is good.
- A P1118 on some Volkswagen engines can be triggered by a low or weak battery during cranking, so check charging system health before condemning the sensor.

Can I keep driving with P1118?

The car is safe to drive with P1118 because the downstream heater only affects emissions readiness and cold-start sensor response, not immediate engine safety. Avoid long periods of short cold-start trips until it is repaired, and get it diagnosed before an emissions inspection because the monitor will not complete.

Tools that help

- OBD-II scan tool with Volkswagen-specific software or a capable generic scanner
- Digital multimeter with resistance and voltage-drop capability
- Wiring diagram for the specific Volkswagen engine code
- Back-probe pins and a fused jumper wire
- Oxygen sensor socket and hand tools



Reading P1118

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

Often seen with

P1114 Bank 1 Sensor 2 Resistance Too High · **P1116** Oxygen Sensor Heater Circuit Open Bank 1 Sensor 1 · **P1116** Engine Torque Control Cut Signal Circuit Low Input · **P1114** Intake Air Temperature Sensor Circuit Low Input · **P1116** ECT Sensor Circuit Out Of Self Test Range · **P1114** Engine Coolant Temperature Sensor Intermittent · **P1116** Engine Coolant Temperature Sensor Erratic · **P1114** Intake Air Temperature B (IAT2) Circuit Low Input · **P1116** Engine Coolant Temperature Sensor is Out of Self-Test Range · **P1114** Engine Coolant Temperature (ECT) Sensor Circuit Intermittent · **P1116** ECT Signal Unstable Or Intermittent · **P1116** Mass Or Volume Air Flow Circuit Range Performance Problem Ba · **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 [Turbocharger Trainer: Boost, Wastegate and Intercooler](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/volkswagen-p1118/>

