

VOLKSWAGEN · POWERTRAIN

P1457

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1457 · Volkswagen

Exhaust Gas Temperature Sensor 2 Open Short To B+

P1457 on Volkswagen vehicles means the engine control module has detected an open circuit or a short to battery voltage on the signal circuit for exhaust gas temperature sensor 2, which is the downstream sensor monitoring the temperature after the catalytic converter. The computer expects a voltage within a specific range from that sensor, and the reading has gone outside the acceptable window, so it flags the fault and may disable certain emissions strategies.

SYSTEM

Powertrain

CODE TYPE

Volkswagen specific

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Auxiliary emission controls

Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms
- Slightly reduced fuel economy if the ECM defaults to a richer mixture for component protection
- Intermittent or permanent failure of the emissions readiness monitors during inspection
- A stored freeze-frame showing the fault occurred during steady cruising or after a cold start
- Rarely, a slight hesitation or rough running if the ECM substitutes a fixed temperature value that is far from actual

Common causes, most likely first

- 1 Broken or chafed wire in the sensor 2 signal circuit, especially near the exhaust heat shield or connector
- 2 Corroded or water-intruded electrical connector at the exhaust gas temperature sensor 2
- 3 Failed exhaust gas temperature sensor 2 itself, with an internal open circuit
- 4 Short to battery voltage in the harness where it rubs against a metal bracket or passes near the battery positive cable
- 5 Loose or damaged terminal in the engine control module connector for the sensor 2 signal pin
- 6 Aftermarket or replacement exhaust components that routed the sensor wiring too close to a heat source or moving part



How to diagnose and fix it

- 1 Scan all modules and record freeze-frame data for P1457, then clear the code and verify whether it returns immediately or only after a specific drive cycle
- 2 Visually inspect the exhaust gas temperature sensor 2 wiring from the sensor connector to the first harness clip, looking for chafing, melted insulation, or a pinched section
- 3 Disconnect the sensor 2 connector and check for corrosion, water intrusion, or pushed-back terminals, then measure the sensor resistance and compare it to the expected value for the current exhaust temperature
- 4 With the key on and the sensor disconnected, measure voltage on the signal circuit at the sensor connector to confirm whether battery voltage is present, which indicates a short to B+
- 5 If battery voltage is present, isolate the circuit by disconnecting the engine control module and checking for continuity to battery positive, then repair the short in the harness
- 6 If the circuit tests good, substitute a known-good sensor and recheck live data to confirm the temperature reading tracks realistically after a cold start
- 7 After repair, clear the code and complete a full drive cycle including a cold start and a steady cruise to verify the sensor 2 reading and confirm the monitor runs without resetting P1457

What the short-to-B+ wording really means

- A short to B+ on the signal circuit often comes from a harness that rubbed through against a positive battery cable or a nearby power distribution point, not from the sensor itself, so always check voltage at the sensor connector before replacing parts.
- The code can set intermittently when the engine bay is hot and a chafed wire touches a metal bracket only under heat expansion, so a wiggle test of the harness while watching live sensor 2 data is more reliable than a static resistance check.
- Volkswagen exhaust gas temperature sensors use a resistance element that changes with heat, and a sensor that reads plausibly at idle can still go open circuit at 600 degrees Celsius, so a bench test at room temperature does not prove the sensor is good.
- A failed sensor 2 on a Volkswagen can cause the ECM to substitute a fixed exhaust temperature, which may keep the check engine light off for a while and mask the fault until a specific regeneration or monitoring condition is met.
- Replacing the sensor without repairing a chafed signal wire will often restore normal operation briefly, then set P1457 again once vibration moves the damaged wire back into contact with the short.

Can I keep driving with P1457?

You can usually drive the vehicle short distances to a repair shop because the fault mainly affects emissions monitoring rather than immediate engine safety, but avoid heavy towing or sustained high-speed driving until the circuit is repaired. If the check engine light begins flashing or the engine runs rough, stop driving and have the vehicle towed.



Tools that help

- OBD-II scan tool with live data and freeze-frame capability
- Digital multimeter with resistance and voltage measurement
- Back probe pins or a breakout lead set for testing connectors without damage
- Wiring diagram for the specific Volkswagen model and engine code
- Heat-resistant wire repair splices and loom if the harness is damaged

Reading P1457

- P** Powertrain: engine, transmission and emissions.
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- 1** Manufacturer-specific code (Volkswagen): its meaning depends on the make.
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- 4** Auxiliary emission controls.
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- 57** The exact fault within that area.

Often seen with

P1456 Exhaust Gas Temperature Control Bank 1 Limit Attained · **P1458** Exhaust Gas Temperature Sensor 2 Short To Ground · **P1456** Evaporative Emission Control System Leak Detected Fuel Tank · **P1456** Fuel Tank Temperature Sensor Circuit · **P1458** A/C Compressor Clutch Signal Fault · **P1458** A/C Compressor Clutch Signal Fault · **P1456** Evaporative Emission Control System Leak Detected Fuel Tank · **P1456** Heated Catalyst Heater Power Supply Open Circuit Bank 1 · **P0136** O2 Sensor Circuit Malfunction (Bank 1 Sensor 2) · **P0420** Catalyst System Efficiency Below Threshold (Bank 1) · **P0430** Catalyst System Efficiency Below Threshold (Bank 2)

See it working

Watch the animated explainer [Inline-Four Engine X-Ray: Firing Order 1-3-4-2](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/volkswagen-p1457/>

