

GENERIC · POWERTRAIN

P0032

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0032

HO2S Heater Control Circuit High (Bank 1 Sensor 1)

P0032 means the engine computer has detected an abnormally high voltage on the heater control circuit for the upstream oxygen sensor on bank 1, which is the sensor ahead of the catalytic converter on the cylinder bank that contains cylinder number one. The heater circuit is designed to bring the sensor up to operating temperature quickly, and a high voltage reading on the control wire tells the computer that the circuit is shorted to power or that the heater element has failed in a way that prevents normal current flow.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Fuel and air metering and auxiliary emission controls

Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms
- A slight decrease in fuel economy as the engine computer may default to a less efficient fuel strategy
- Occasional rough idle or hesitation when the engine is cold, because the sensor takes longer to become active
- A pending or stored P0032 code that returns quickly after being cleared
- In some vehicles, the engine may enter a fail-safe mode that limits performance until the fault is repaired

Common causes, most likely first

- 1 A short to battery voltage in the heater control wiring between the oxygen sensor and the engine computer
- 2 A failed oxygen sensor heater element that has an internal short or open circuit
- 3 Corroded, damaged, or loose electrical connectors at the oxygen sensor or along the heater circuit
- 4 A faulty engine computer driver for the heater control circuit, though this is less common
- 5 Water intrusion into the wiring harness or connector causing a short to power
- 6 Aftermarket accessories or improper repairs that have tapped into the heater circuit wiring



How to diagnose and fix it

- 1 Inspect the oxygen sensor heater circuit wiring for chafing, pinching, or contact with hot exhaust components, and repair any damage found
- 2 Disconnect the oxygen sensor connector and check for corrosion or water intrusion, cleaning or replacing the connector as needed
- 3 Measure the resistance of the oxygen sensor heater element with a multimeter and compare it to the manufacturer's specification to determine if the sensor is faulty
- 4 With the sensor disconnected and the key on, check for battery voltage on the heater control wire at the sensor connector to confirm a short to power
- 5 If a short to power is present, trace the wire back to the engine computer and repair the short, or replace the engine computer if the driver is faulty
- 6 Replace the upstream oxygen sensor if the heater element is out of specification or if the sensor is the confirmed cause
- 7 Clear the diagnostic trouble codes and perform a road test to verify the repair and ensure the code does not return

What a high voltage heater code really means

- A high voltage reading on the heater control circuit often indicates a short to power rather than a failed sensor, so replacing the sensor without checking the wiring can be a costly misdiagnosis.
- The oxygen sensor heater is controlled by the engine computer through a pulse-width modulated ground, and a short to voltage on that control wire will set P0032 even if the sensor itself is perfectly functional.
- Some vehicles use a smart oxygen sensor with an integrated heater driver, and a fault in that module can set a heater circuit code that mimics a wiring problem.
- P0032 is often stored alongside other oxygen sensor heater codes for different sensors, which can point to a shared power or ground circuit issue rather than multiple failed sensors.
- A weak or failing battery or charging system can cause voltage spikes that trigger a high voltage heater code, so always verify system voltage is stable before condemning the sensor.

Can I keep driving with P0032?

You can usually continue driving with P0032, but the engine may run less efficiently and emissions will be higher until the fault is repaired. Avoid long periods of idling or heavy load if you notice rough running, and have the circuit inspected soon to prevent damage to the catalytic converter from unburned fuel.



Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Wiring diagram for the specific vehicle
- Basic hand tools for connector and sensor removal
- Jack and jack stands or ramps for access to the sensor

Reading P0032

- P** Powertrain: engine, transmission and emissions.
- 0** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- 0** Fuel and air metering and auxiliary emission controls.
- 32** The exact fault within that area.

Often seen with

P0030 HO2S Heater Control Circuit (Bank 1 Sensor 1) · **P0031** HO2S Heater Control Circuit Low (Bank 1 Sensor 1) · **P0033** Turbo Charger Bypass Valve Control Circuit · **P0034** Turbo Charger Bypass Valve Control Circuit Low · **P0135** O2 Sensor Heater Circuit Malfunction (Bank 1 Sensor 1)

See it working

Watch the animated explainer [How a Boxer Engine Works: Flat Engine Cutaway](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p0032/>

