

GENERIC · POWERTRAIN

**P046B**

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

## P046B

# Catalyst Temperature Sensor 1/2 Correlation Bank 2

P046B is a generic powertrain code indicating that the engine control module (ECM) has detected a correlation error between the two catalyst temperature sensors on bank 2. The ECM compares the temperature readings from the pre-catalyst and post-catalyst sensors and expects them to follow a predictable relationship; when the signals deviate beyond a calibrated threshold, it sets this code.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

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.
- Reduced engine performance or power, especially under load.
- Decreased fuel economy due to the ECM entering a protective mode.
- In rare cases, a slight sulfur or rotten egg smell from the exhaust.
- Intermittent rough running or hesitation if the fault affects fuel control.
- Failed emissions inspection due to the stored code.

## Common causes, most likely first

- 1 Faulty catalyst temperature sensor on bank 2 (either sensor 1 or sensor 2).
- 2 Damaged, corroded, or shorted wiring in the sensor circuit.
- 3 Poor electrical connection at the sensor connector.
- 4 Exhaust leaks before or near the sensors, causing false temperature readings.
- 5 A failing catalytic converter on bank 2 that alters the temperature profile.
- 6 ECM software calibration issues or internal ECM faults (less common).



## How to diagnose and fix it

- 1 Perform a visual inspection of the bank 2 catalyst temperature sensors and their wiring for damage, corrosion, or loose connectors.
- 2 Use a scan tool to read live data from both catalyst temperature sensors on bank 2 and compare their readings during warm-up and steady driving.
- 3 Check for exhaust leaks around the sensors and repair any leaks found.
- 4 Test the sensor circuits with a multimeter for continuity, short circuits, and proper reference voltage according to the manufacturer's specifications.
- 5 If a sensor is suspect, swap it with a known-good sensor from the same bank (if accessible) to see if the code follows the sensor.
- 6 Replace the faulty catalyst temperature sensor if testing confirms it is out of specification.
- 7 Clear the code and perform a drive cycle to verify the repair; if the code returns, further diagnose the catalytic converter or ECM.

## Diagnosing P046B Without Throwing Parts

- A common mistake is replacing the catalytic converter immediately, but the code often stems from a failing temperature sensor or wiring issue that costs far less to fix.
- The ECM may set this code due to a lazy sensor that responds slowly to temperature changes, which may not be obvious from static resistance checks alone.
- Exhaust leaks upstream of the sensors can cause temperature correlation errors by allowing outside air to affect readings, so always inspect the exhaust system first.
- On some vehicles, a weak battery or charging system issue can cause voltage drops that affect sensor signals and trigger false correlation codes.
- After repairs, the ECM may require a specific drive cycle to relearn the catalyst temperature profile; simply clearing the code may not be enough to prevent recurrence.

## Can I keep driving with P046B?

You can generally continue driving with this code, but avoid aggressive acceleration or heavy loads until it is diagnosed. Prolonged driving with a faulty catalyst temperature sensor may lead to increased emissions and potential damage to the catalytic converter, so schedule service soon.

## Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Infrared thermometer
- Basic hand tools (socket set, wrenches)
- Wiring diagram for the specific vehicle



### Reading P046B

- P** Powertrain: engine, transmission and emissions.
- 0** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- 4** Auxiliary emission controls.
- 6B** The exact fault within that area.

### Often seen with

**P0420** Catalyst System Efficiency Below Threshold (Bank 1) · **P0430** Catalyst System Efficiency Below Threshold (Bank 2) · **P046A** Catalyst Temperature Sensor 1/2 Correlation Bank 1 · **P046C** EGR Sensor A Circuit Range/Performance · **P046D** EGR Sensor A Circuit Intermittent/Erratic

### 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/p046b/>

