

GENERIC · POWERTRAIN

P042D

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P042D

Catalyst Temperature Sensor Circuit High Bank 1 Sensor 2

P042D means the powertrain control module (PCM) has detected an abnormally high voltage signal from the bank 1 sensor 2 catalyst temperature sensor, which is the sensor mounted after the catalytic converter on the engine bank that contains cylinder number one. The PCM interprets this high voltage as an excessively hot catalyst or a fault in the sensor circuit, and it sets the code when the signal exceeds the expected range for the operating conditions.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Generic (all makes)	Medium	Intermediate	Auxiliary emission controls

Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms
- Reduced engine performance or power due to the PCM entering a protective limp mode
- Poor fuel economy as the PCM may alter fuel delivery based on faulty temperature data
- A burning or sulfur-like smell from the exhaust if the catalyst is genuinely overheating
- In rare cases, a glowing catalytic converter or heat damage to nearby components

Common causes, most likely first

- 1 Faulty catalyst temperature sensor (bank 1 sensor 2) sending a high voltage signal
- 2 Damaged or corroded wiring in the sensor circuit, such as a short to voltage or high resistance
- 3 Loose or contaminated sensor connector causing an intermittent high signal
- 4 Excessively rich fuel mixture or misfire causing the catalyst to overheat and the sensor to read high
- 5 Restricted exhaust or a failing catalytic converter creating abnormal temperature conditions
- 6 PCM internal fault or software issue misinterpreting the sensor signal



How to diagnose and fix it

- 1 Use an OBD-II scanner to confirm P042D and check for related codes, then record freeze-frame data
- 2 Visually inspect the bank 1 sensor 2 catalyst temperature sensor, its connector, and wiring for damage or corrosion
- 3 Measure the sensor's resistance and voltage output with a digital multimeter and compare to manufacturer specifications
- 4 Check the sensor circuit for a short to voltage or high resistance using a wiring diagram and continuity tests
- 5 Test the catalytic converter for restrictions or overheating by checking backpressure and temperature readings
- 6 Replace the catalyst temperature sensor if it fails electrical tests, then clear codes and verify the repair
- 7 If the sensor and wiring are good, diagnose the PCM and catalytic converter for internal faults

Before you replace the catalyst temperature sensor

- A high voltage signal from the catalyst temperature sensor often results from a short to voltage in the wiring harness rather than a failed sensor, so always inspect the harness routing near hot exhaust components.
This code can be set by a genuinely overheating catalytic converter caused by an engine misfire or rich condition, so ignoring other codes like P0300 or P0172 can lead to a repeat failure.
- Some vehicles use a model-based estimate for catalyst temperature and do not have a physical sensor, so verify that your vehicle is actually equipped with a bank 1 sensor 2 catalyst temperature sensor before ordering parts.
- A loose or corroded ground connection for the sensor circuit can cause a high voltage reading that mimics a failed sensor, so clean and tighten grounds as part of diagnosis.
- After replacing the sensor, the PCM may require a relearn or drive cycle before the monitor will pass, and clearing codes without completing the drive cycle can leave the light off but the monitor incomplete.

Can I keep driving with P042D?

You can usually drive the vehicle with P042D set, but avoid heavy loads and sustained high-speed driving until the fault is diagnosed, because a genuinely overheating catalyst can cause costly damage. If the check engine light is flashing or you notice misfire symptoms, stop driving and seek service immediately.

Tools that help

- OBD-II scanner with live data capability
- Digital multimeter
- Infrared thermometer
- Wiring diagram and service information
- Basic hand tools (socket set, wire brush, electrical contact cleaner)



Reading P042D

- P** Powertrain: engine, transmission and emissions.
- 0** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- 4** Auxiliary emission controls.
- 2D** The exact fault within that area.

Often seen with

P0172 System Too Rich (Bank 1) · **P0300** Random/Multiple Cylinder Misfire Detected · **P042C** Catalyst Temperature Sensor Circuit Low Bank 1 Sensor 2 · **P042E** EGR A Control Stuck Open · **P043D** Catalyst Temperature Sensor Circuit High Bank 2 Sensor 2

See it working

Watch the animated explainer [How an Oxygen Sensor Works: Live 3D Cutaway](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p042d/>

