

GENERIC · POWERTRAIN

P042C

OBD-II TROUBLE CODE

P042C

Catalyst Temperature Sensor Circuit Low Bank 1 Sensor 2

P042C means the powertrain control module (PCM) has detected a low voltage signal from the catalyst temperature sensor located after the catalytic converter on bank 1, sensor 2. The sensor's output is below the expected range for the current operating conditions, indicating a short to ground, an open circuit, or a failed sensor. This code is specific to the downstream catalyst temperature sensor circuit and does not directly indicate a catalyst efficiency problem.

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.
- Possible reduced engine performance or fuel economy if the PCM enters a limp-home mode.
- In rare cases, a slight hesitation or rough running if the sensor signal is used for fuel control.
- No visible signs under the hood unless wiring damage is present.
- Inspection may reveal a melted or damaged sensor connector or wiring harness.
- The code may be intermittent if the fault is a loose connection or chafed wire.

Common causes, most likely first

- 1 Faulty catalyst temperature sensor (bank 1 sensor 2) internally shorted or failed.
- 2 Damaged or corroded wiring harness or connector at the sensor.
- 3 Short to ground in the signal circuit between the sensor and the PCM.
- 4 Open circuit in the sensor ground or signal return circuit.
- 5 PCM internal fault causing incorrect voltage reading (rare).
- 6 Exhaust system damage or modification that affects sensor mounting or wiring.
- 7 Aftermarket sensor with incorrect resistance characteristics installed.



How to diagnose and fix it

- 1 Use a scan tool to verify the code and check live data for the catalyst temperature sensor voltage; compare to specifications.
- 2 Visually inspect the sensor, connector, and wiring for damage, corrosion, or loose pins; repair as needed.
- 3 Disconnect the sensor and measure resistance across its terminals; compare to manufacturer's specification to confirm sensor failure.
- 4 Check for short to ground or open circuit in the signal and ground circuits using a multimeter; repair wiring as necessary.
- 5 If the sensor is faulty, replace it with an OEM-quality part and clear the code.
- 6 After repair, road-test the vehicle to confirm the code does not return and monitor sensor voltage within normal range.
- 7 If the code persists after sensor and wiring repairs, diagnose the PCM and its connections before replacement.

What a low catalyst sensor voltage really means

- A low voltage signal from the catalyst temperature sensor often results from a short to ground in the wiring, not a failed sensor, so always check the harness first.
- The catalyst temperature sensor is used to protect the converter from overheating; a low signal may cause the PCM to disable certain diagnostics or enter a default strategy.
- Replacing the sensor without checking the connector for water intrusion or corrosion is a common misdiagnosis that leads to repeat failures.
- This code can be set by a poor ground connection at the sensor mounting point, especially on vehicles with rust-prone exhaust systems.
- A generic scan tool may show the sensor voltage as zero or fixed low, but a manufacturer-specific tool can reveal if the PCM is commanding a default value due to another fault.

Can I keep driving with P042C?

You can generally continue driving with this code, but avoid heavy loads or sustained high-speed driving that could cause the catalytic converter to overheat if the sensor is truly faulty. Have the vehicle diagnosed soon to prevent potential converter damage and to ensure the check engine light is not masking a more serious issue.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Wiring diagram for the specific vehicle
- Socket set and ratchet
- Sensor wrench or appropriate crowfoot wrench
- Contact cleaner and dielectric grease



Reading P042C

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

Often seen with

P0420 Catalyst System Efficiency Below Threshold (Bank 1) · **P042D** Catalyst Temperature Sensor Circuit High Bank 1 Sensor 2 · **P042E** EGR A Control Stuck Open · **P042F** EGR A Control Stuck Closed · **P0430** Catalyst System Efficiency Below Threshold (Bank 2)

See it working

Watch the animated explainer [Helicopter Flight Simulator: Learn the Three Controls](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p042c/>

