

GENERIC · POWERTRAIN

P041C

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P041C

EGR Temperature Sensor B Circuit Low

P041C means the powertrain control module (PCM) has detected a low-voltage signal from the exhaust gas recirculation (EGR) temperature sensor B circuit, which typically monitors the temperature of the EGR flow or the EGR cooler on the cooler side. The PCM expects the sensor's return voltage to stay within a calibrated range, and a sustained low reading indicates a short to ground, an open circuit, or a sensor that has failed in a low-resistance state.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Low

FIX DIFFICULTY

Intermediate

AREA

Auxiliary emission controls

Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms
- Rough idle or slight hesitation when the EGR valve opens, especially when the engine is cold
- Reduced fuel economy as the PCM may disable EGR operation and default to a richer mixture
- Intermittent stumble or surge during light-throttle cruising if the sensor signal is erratic
- Failed emissions test due to the EGR monitor not completing or reporting a fault
- In rare cases, a noticeable decrease in power if the PCM limits EGR flow to protect the engine

Common causes, most likely first

- 1 EGR temperature sensor B internally shorted, pulling the signal voltage toward ground
- 2 Damaged or chafed sensor wiring shorted to ground between the sensor and the PCM
- 3 Corroded, loose, or disconnected electrical connector at the sensor
- 4 Open circuit in the sensor ground or reference voltage circuit causing a false low reading
- 5 Failed PCM driver or internal pull-up resistor on the sensor signal circuit (less common)
- 6 Exhaust leaks or coolant contamination affecting the sensor's thermal response (indirect cause)



How to diagnose and fix it

- 1 Connect a scan tool and record the freeze-frame data and sensor B voltage with the key on and engine running to confirm the low signal
- 2 Visually inspect the sensor, connector, and wiring harness for chafing, corrosion, or loose pins, and repair as needed
- 3 Measure resistance and voltage at the sensor connector and compare with manufacturer specifications to isolate the sensor from the circuit
- 4 Check the sensor ground circuit for excessive resistance and the reference voltage for correct value with a digital multimeter
- 5 If the circuit tests good, replace the EGR temperature sensor B with a quality part and clear the code
- 6 Clear codes and perform a road test to verify the EGR monitor completes and the code does not return
- 7 If the code persists after sensor replacement, diagnose the PCM signal circuit for a short to ground or an internal PCM fault

What a low EGR temp signal really means

- A low signal does not always mean the sensor is bad; a short to ground anywhere in the harness will produce the same code, so always check the wiring before replacing parts.
- On many vehicles the EGR temperature sensor B is a thermistor whose resistance drops as temperature rises, so a low voltage reading can also be caused by an open ground circuit rather than a shorted sensor.
- Technicians often overlook that a stuck-open EGR valve can cause the sensor to see abnormally low temperatures, setting this code even though the sensor itself is fine.
- After replacing the sensor, the PCM may need to relearn the EGR temperature range, so clearing codes and completing a drive cycle is essential to avoid a false repeat.
- This code can be set by a poor engine ground or a weak battery that causes the PCM to misread sensor voltage during cranking, so check the charging system first.

Can I keep driving with P041C?

The vehicle is generally safe to drive with P041C because the PCM will default to a conservative EGR strategy, but avoid long trips or heavy loads until the fault is repaired to prevent increased emissions and potential fuel economy loss.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Wiring diagram for the EGR temperature sensor circuit
- Basic hand tools for connector and sensor removal
- Vacuum pump or smoke machine for checking EGR flow (optional)



Reading P041C

- P** Powertrain: engine, transmission and emissions.
- 0** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- 4** Auxiliary emission controls.
- 1C** The exact fault within that area.

Often seen with

P0400 Exhaust Gas Recirculation Flow Malfunction · **P0401** EGR Flow Insufficient Detected · **P0402** EGR Flow Excessive Detected · **P041D** EGR Temperature Sensor B Circuit High · **P0420** Catalyst System Efficiency Below Threshold (Bank 1)

See it working

Watch the animated explainer [How a Supercharger Works: Roots Blower in X-Ray](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p041c/>

