

GENERIC · POWERTRAIN

P041B

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P041B

EGR Temperature Sensor B Circuit Range/Performance

P041B indicates that the powertrain control module has detected an out-of-range or performance problem with the EGR temperature sensor B circuit, which is typically the sensor monitoring the secondary EGR path or a second sensor in a dual-sensor system. The computer compares the sensor signal against expected values and flags the code when the voltage or resistance falls outside the normal operating window for a calibrated period.

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
- Slightly rough idle or hesitation during acceleration if the EGR system is not functioning correctly
- Reduced fuel economy in some cases due to improper EGR flow affecting combustion temperatures
- Intermittent engine stumble or surge when the EGR valve opens, especially during light throttle cruise
- Failed emissions test due to increased nitrogen oxide (NOx) levels from inactive EGR

Common causes, most likely first

- 1 Faulty EGR temperature sensor B, such as an open or shorted internal element
- 2 Damaged or corroded wiring or connector at the sensor or PCM, causing high resistance or intermittent signal
- 3 Exhaust gas recirculation (EGR) valve stuck open or closed, preventing proper temperature changes at the sensor
- 4 Carbon buildup or blockage in the EGR passage or sensor port, insulating the sensor from exhaust flow
- 5 Failed or leaking EGR cooler, causing abnormal temperature readings at sensor B
- 6 PCM software issue or internal driver fault, though this is less common and usually requires reflash or replacement



How to diagnose and fix it

- 1 Use a scan tool to read live data from EGR temperature sensor B and compare it to ambient and engine coolant temperature after a cold start; a stuck or irrational reading indicates a sensor or circuit problem.
- 2 Visually inspect the sensor, connector, and wiring for damage, corrosion, or loose pins; repair any obvious faults before replacing parts.
- 3 Check the sensor's resistance or voltage output with a multimeter according to the manufacturer's specifications and compare to a known-good value.
- 4 Test the EGR valve operation with a scan tool or vacuum pump to ensure it opens and closes smoothly and that the sensor sees a temperature change when EGR flow is commanded.
- 5 Remove and inspect the EGR temperature sensor B for carbon fouling or physical damage; clean or replace as necessary.
- 6 If the sensor and wiring test good, check for carbon blockage in the EGR passages and clean them thoroughly.
- 7 After repairs, clear the codes and perform a drive cycle to verify the fix and ensure the monitor runs to completion.

Before you replace the EGR temperature sensor

- A common misdiagnosis is replacing the EGR temperature sensor when the real problem is a stuck EGR valve or clogged passage that prevents the sensor from seeing temperature changes.
- On some vehicles, the EGR temperature sensor B is actually a second sensor in a dual-sensor system, and a fault in the primary sensor or its circuit can cause a cascade that sets P041B.
- Intermittent wiring faults at the connector, often caused by engine vibration or heat, can set P041B without any hard failure; wiggle-test the harness while watching live data.
- A faulty EGR cooler can cause the sensor to read abnormally high or low temperatures, and this code may be the first sign of a coolant leak into the exhaust.
- P041B does not always mean the sensor is bad; a PCM calibration issue or a poor ground connection can skew the signal and trigger the code.

Can I keep driving with P041B?

You can usually continue driving with P041B, but avoid heavy acceleration and long periods of idling until the fault is repaired, as improper EGR operation can increase combustion temperatures and emissions. If the check engine light starts flashing or you notice engine knocking, stop driving and seek service immediately.



Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Vacuum pump or hand-held vacuum gauge
- Socket and ratchet set
- Wiring diagram for the EGR circuit

Reading P041B

P	Powertrain: engine, transmission and emissions.
0	Generic (SAE) code: it means the same thing on every OBD-II vehicle.
4	Auxiliary emission controls.
1B	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 · **P041A** EGR Temperature Sensor B Circuit · **P041C** EGR Temperature Sensor B Circuit Low

See it working

Watch the animated explainer [How a Car Clutch Works: Diaphragm Clutch Cutaway](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p041b/>

