

GENERIC · POWERTRAIN

P04D2

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P04D2

EGR Temperature Sensor C Circuit Intermittent/Erratic

P04D2 means the engine computer has detected an intermittent or erratic signal from the EGR temperature sensor C circuit, which monitors the temperature of the exhaust gas recirculation flow. The computer expects a steady voltage or resistance reading from this sensor, but the signal is jumping around or dropping out unpredictably, so the computer cannot trust the temperature data.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Low

FIX DIFFICULTY

Intermediate

AREA

Auxiliary emission controls

Symptoms you may notice

- Often no symptoms besides the warning light, especially if the erratic signal is brief and the EGR system still functions normally.
- Intermittent rough idle or slight hesitation when the EGR valve opens, because the computer may misjudge the exhaust gas temperature and adjust the EGR flow incorrectly.
- A noticeable stumble or surge during light-throttle cruising when the EGR system is active.
- Poor fuel economy or slightly increased emissions if the fault causes the computer to disable EGR operation as a fail-safe.
- In rare cases, a stored pending code that clears itself and then returns after several drive cycles.

Common causes, most likely first

- 1 A loose, corroded, or partially broken electrical connector at the EGR temperature sensor C, causing an intermittent connection.
- 2 Chafed or damaged wiring in the sensor circuit that shorts or opens only when the engine moves or vibrates.
- 3 A failing EGR temperature sensor C that produces an erratic resistance or voltage signal as it heats up.
- 4 Excessive carbon buildup or soot on the sensor tip, which can insulate it and cause unstable readings.
- 5 A poor ground connection shared by the sensor circuit, leading to voltage fluctuations.
- 6 A faulty EGR valve that sticks or chatters, creating pressure pulses that confuse the temperature sensor reading.
- 7 In rare cases, an intermittent internal fault in the engine control module (ECM) driver circuit for the sensor.



How to diagnose and fix it

- 1 Inspect the EGR temperature sensor C connector and wiring for looseness, corrosion, or chafing, and repair any damaged terminals or insulation.
- 2 Wiggle-test the sensor harness while watching live sensor data on a scan tool to reproduce the erratic signal and pinpoint the fault location.
- 3 Measure the sensor's resistance or voltage with a multimeter and compare it to the manufacturer's specification across a range of temperatures.
- 4 Remove the sensor and check for carbon buildup or mechanical damage; clean or replace the sensor if the reading is unstable or out of spec.
- 5 Check the sensor ground circuit for excessive resistance and repair any poor ground connections.
- 6 Verify the EGR valve operates smoothly and does not stick, since a faulty valve can create pressure fluctuations that mimic a sensor fault.
- 7 Clear the code and perform a road test with live data logging to confirm the intermittent signal is gone before returning the vehicle.

Intermittent EGR sensor faults that fool technicians

- A scan tool that only shows the current fault code will miss this problem; you need live data graphing to catch the erratic signal as it happens.
- Many technicians replace the EGR temperature sensor only to find the real fault is a chafed wire inside the harness loom that only shorts when the engine torques under load.
- Carbon buildup on the sensor tip is a common cause of erratic readings on high-mileage engines, and cleaning the sensor often restores a stable signal without replacement.
- This code does not always mean the sensor itself is bad; a sticking EGR valve can create pressure pulses that make a healthy sensor report erratic temperatures.
- A weak battery or charging system can cause intermittent sensor signals across multiple circuits, so check system voltage before condemning the sensor.

Can I keep driving with P04D2?

You can usually keep driving with this code because the fault is intermittent and the computer can fall back to a default EGR strategy, but avoid long trips or heavy load until it is diagnosed. If the warning light starts flashing or you notice rough running, have it checked promptly.

Tools that help

- OBD-II scan tool with live data and graphing capability
- Digital multimeter
- Wiring diagram for the EGR temperature sensor circuit
- Sensor socket or appropriate wrench
- Contact cleaner and dielectric grease



Reading P04D2

- P** Powertrain: engine, transmission and emissions.
- 0** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- 4** Auxiliary emission controls.
- D2** The exact fault within that area.

Often seen with

P0401 EGR Flow Insufficient Detected · **P0402** EGR Flow Excessive Detected · **P0403** EGR Circuit Malfunction · **P04D1** EGR Temperature Sensor C Circuit High · **P04D3** Exhaust Brake Input Circuit

See it working

Watch the animated explainer [EV Powertrain Trainer: How an Electric Car Drives](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p04d2/>

