

GENERIC · POWERTRAIN

P046F

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P046F

EGR Sensor B Circuit Intermittent/Erratic

P046F indicates that the powertrain control module has detected an intermittent or erratic signal from the exhaust gas recirculation (EGR) sensor B circuit, meaning the voltage readings are jumping or dropping out rather than changing smoothly. The computer sets this code when the sensor signal falls outside expected behavior for a calibrated period, often due to a loose connection, chafed wire, or failing sensor.

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
- Rough idle or stumbling when the engine is cold or under light load
- Intermittent hesitation or surge during acceleration
- Poor fuel economy or increased exhaust emissions
- Occasional stalling when coming to a stop
- A faint electrical burning smell or visible wire damage in the engine bay

Common causes, most likely first

- 1 Loose, corroded, or damaged electrical connector at the EGR sensor B
- 2 Chafed, broken, or intermittently shorting wiring in the EGR sensor B circuit
- 3 Failing EGR sensor B (internal intermittent open or short)
- 4 Carbon buildup or mechanical binding in the EGR valve affecting sensor B movement
- 5 Poor ground connection for the EGR sensor or powertrain control module
- 6 Extreme engine vibration or heat causing temporary signal loss
- 7 Aftermarket electrical accessories improperly tapped into the sensor circuit



How to diagnose and fix it

- 1 Inspect the EGR sensor B connector and wiring for looseness, corrosion, or chafing, and repair as needed
- 2 Perform a wiggle test on the harness while monitoring live sensor B data to reproduce the intermittent fault
- 3 Check the sensor B reference voltage and ground at the connector with a multimeter, comparing to manufacturer specifications
- 4 Remove and inspect the EGR valve and sensor B for carbon buildup or mechanical binding, cleaning or replacing as required
- 5 Measure the resistance or voltage output of EGR sensor B through its full range of motion to detect dead spots
- 6 Verify the integrity of the ground circuit from the EGR sensor to the chassis and engine block
- 7 Clear the code and perform a drive cycle to confirm the repair, repeating diagnostics if the code returns

Why an intermittent EGR code fools many

- A loose ground strap between the engine and chassis can cause erratic EGR sensor signals that mimic a failing sensor, so always check grounds before replacing parts.
- Carbon buildup on the EGR valve pintle often creates a dead spot in sensor B's travel that only appears at certain temperatures, making the code seem random.
- Aftermarket alarm or audio installations that tap into the sensor reference voltage can introduce intermittent noise that sets P046F without any sensor fault.
- The code can be stored by a momentary glitch that never returns, so a single occurrence with no drivability complaint may only require clearing and monitoring.
- A failing EGR sensor B may test perfectly on a cold engine but fail when heat-soaked, so diagnostic tests should include a hot-engine wiggle and live data review.

Can I keep driving with P046F?

You can usually continue driving with P046F, but avoid sustained heavy acceleration or towing until the fault is repaired because erratic EGR operation can raise emissions and slightly affect fuel economy. If the engine begins to stumble, stall, or run rough, have it diagnosed promptly to prevent catalytic converter damage.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Wire probe and jumper wires
- Contact cleaner and dielectric grease
- Basic hand tools for connector and sensor access



Reading P046F

- P** Powertrain: engine, transmission and emissions.
- 0** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- 4** Auxiliary emission controls.
- 6F** 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 · **P0403** EGR Circuit Malfunction · **P046E** EGR Sensor B Circuit Range/Performance

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/p046f/>

