

GENERIC · POWERTRAIN

P046E

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P046E

EGR Sensor B Circuit Range/Performance

P046E indicates that the powertrain control module has detected an out-of-range or performance fault in the circuit for EGR Sensor B, which is typically the second sensor monitoring the exhaust gas recirculation system's flow or position. The computer compares the sensor's signal against expected values under specific operating conditions and flags the code when the signal does not behave as designed.

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
- Slight hesitation or surge during acceleration
- Reduced fuel economy over time
- Intermittent engine misfire or poor driveability if the EGR system is stuck open
- Failed emissions test due to incomplete readiness monitors

Common causes, most likely first

- 1 Faulty EGR Sensor B (often a differential pressure or position sensor) sending an erratic signal
- 2 Wiring damage such as chafed, corroded, or broken wires in the sensor circuit
- 3 Loose or corroded electrical connector at the sensor or PCM
- 4 Clogged or restricted EGR passage or tube preventing proper flow
- 5 Carbon buildup on the EGR valve or sensor port causing incorrect readings
- 6 Failed EGR valve or solenoid affecting the sensor's ability to detect flow
- 7 Rarely, a PCM internal fault misinterpreting the sensor signal



How to diagnose and fix it

- 1 Use an OBD-II scanner to verify the code and check for freeze-frame data and related codes
- 2 Visually inspect the EGR sensor B, its connector, and wiring for damage or corrosion
- 3 Test the sensor's reference voltage and signal voltage with a multimeter, comparing to manufacturer specifications
- 4 Check for clogged EGR passages or carbon buildup and clean as necessary
- 5 Perform a resistance test on the sensor and compare to specifications, replacing if out of range
- 6 Verify wiring continuity from the sensor to the PCM and repair any opens or shorts
- 7 Clear the code and perform a drive cycle to confirm the repair and ensure the monitor completes

Don't overlook the EGR passages

- A restricted EGR passage can cause the sensor to read incorrectly even when the sensor itself is functioning perfectly, so always check for carbon blockages before replacing parts.
- The sensor's signal can be skewed by a failing EGR valve that does not seal properly, leading to false range or performance codes.
- Intermittent wiring faults often set this code only under specific vibration or temperature conditions, so wiggle-test the harness while monitoring live data.
- Some vehicles use a differential pressure sensor for EGR flow, and a leak in the pressure hose can mimic a sensor failure.
- After repairs, the EGR monitor may require a specific drive pattern to run, and the code may not clear immediately if the battery was disconnected.

Can I keep driving with P046E?

You can generally continue driving with this code, but avoid aggressive acceleration and long idling until it is diagnosed. If the engine runs rough or stalls, have it inspected promptly to prevent damage to the catalytic converter or other components.

Tools that help

- OBD-II scanner with live data capability
- Digital multimeter
- Vacuum pump and gauge
- Basic hand tools (screwdrivers, socket set)
- Wire probe and electrical contact cleaner



Reading P046E

P	Powertrain: engine, transmission and emissions.
0	Generic (SAE) code: it means the same thing on every OBD-II vehicle.
4	Auxiliary emission controls.
6E	The exact fault within that area.

Often seen with

P0401 EGR Flow Insufficient Detected · **P0402** EGR Flow Excessive Detected · **P0403** EGR Circuit Malfunction · **P046D** EGR Sensor A Circuit Intermittent/Erratic · **P046F** EGR Sensor B Circuit Intermittent/Erratic

See it working

Watch the animated explainer [How a MAP Sensor Works: Engine Vacuum and Load](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p046e/>

