

GENERIC · POWERTRAIN

P02EB

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P02EB

Diesel Intake Air Flow A Control Motor Current Range/Performance

P02EB indicates that the engine control module has detected an out-of-range current or a performance fault in the electrical circuit that operates the intake air flow control motor for bank A on a diesel engine. The motor is commanded to move but the current draw does not match the expected profile, so the module sets this code and may limit the motor's operation.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Fuel and air metering (injector circuits)

Symptoms you may notice

- Illumination of the check engine light or a specific service engine soon message.
- Often no symptoms besides the warning light, especially if the motor is stuck in a default position.
- Reduced engine power or a limp-home mode triggered by the ECM.
- Rough idle, hesitation, or poor throttle response due to incorrect intake air flow.
- Increased fuel consumption or excessive black smoke from the exhaust.
- In some cases, a noticeable lack of power at low engine speeds or during acceleration.

Common causes, most likely first

- 1 Wiring harness damage such as chafed, corroded, or broken wires between the ECM and the intake air flow control motor.
- 2 A faulty intake air flow control motor with worn brushes, a shorted winding, or mechanical binding.
- 3 Poor electrical connections at the motor or ECM connectors, including loose pins or water intrusion.
- 4 A failing engine control module driver circuit for the motor, though this is less common.
- 5 Carbon buildup or mechanical obstruction in the intake air passage causing the motor to work harder than expected.
- 6 Aftermarket or incorrect components installed in the intake air system that alter the motor's current draw.



How to diagnose and fix it

- 1 Perform a visual inspection of the intake air flow control motor, its connectors, and the related wiring harness for obvious damage or corrosion.
- 2 Use a scan tool to command the motor through its full range and observe the current draw and position feedback for smooth operation.
- 3 Measure the resistance of the motor windings and compare to the manufacturer's specification to rule out an open or shorted motor.
- 4 Check for power and ground at the motor connector with the key on, and verify the control signal from the ECM using a multimeter or oscilloscope.
- 5 Inspect the intake air passages for carbon deposits or mechanical binding that could cause excessive current draw.
- 6 If the motor and wiring test good, substitute a known-good motor to see if the code returns, then replace the motor if necessary.
- 7 After repairs, clear the codes and perform a relearn or adaptation procedure for the intake air flow control system if required.

What the current code really tells you

- A current range/performance code often sets because the motor is mechanically stuck or binding, not because the electrical circuit has failed completely.
- Carbon buildup on the intake air flow control valve or throttle plate can increase motor current and trigger this code without any wiring fault.
- Some vehicles use the intake air flow control motor for both swirl control and throttle functions, so a fault can affect multiple driving conditions.
- A weak battery or charging system issue can cause low voltage at the motor, leading to a false current range code.
- After replacing the motor, some ECMs require a calibration or adaptation procedure; skipping it can cause the code to return immediately.

Can I keep driving with P02EB?

You can usually drive the vehicle with this code, but expect reduced engine performance and possible limp-home mode. Avoid heavy acceleration or towing until the fault is repaired, and address it promptly to prevent further damage to the motor or ECM.



Tools that help

- OBD-II scan tool with bidirectional control and live data capability
- Digital multimeter
- Oscilloscope for signal analysis
- Basic hand tools for connector and component access
- Manufacturer service information for wiring diagrams and specifications

Reading P02EB

P	Powertrain: engine, transmission and emissions.
0	Generic (SAE) code: it means the same thing on every OBD-II vehicle.
2	Fuel and air metering (injector circuits).
EB	The exact fault within that area.

Often seen with

P02E8 Diesel Intake Air Flow A Position Sensor Circuit Low · **P02E9** Diesel Intake Air Flow A Position Sensor Circuit High · **P02EA** Diesel Intake Air Flow A Position Sensor Circuit Intermitten · **P02EC** Diesel Intake Air Flow A Control System - High Air Flow Dete · **P02ED** Diesel Intake Air Flow A Control System - Low Air Flow Detec

See it working

Watch the animated explainer [How a Six-Speed Manual Gearbox Works](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p02eb/>

