

GENERIC · POWERTRAIN

P02EF

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P02EF

Cylinder 2 Injector Circuit Range/Performance

P02EF indicates that the powertrain control module has detected an abnormal condition in the electrical circuit for cylinder 2's fuel injector, where the circuit's resistance or current flow falls outside the expected range for proper injector operation. The computer monitors the injector driver circuit and flags this code when the measured performance does not match the commanded pulse width, which can affect fuel delivery to that cylinder.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Fuel and air metering (injector circuits)

Symptoms you may notice

- Illuminated check engine light, often with no other noticeable symptoms
- Rough idle or misfire that may feel like a shake or stumble
- Reduced engine power or hesitation during acceleration
- Poor fuel economy due to improper fuel delivery
- Possible fuel smell from the exhaust if the injector is stuck open
- Intermittent engine stumble that may come and go with temperature or vibration

Common causes, most likely first

- 1 Faulty fuel injector with internal coil damage or clogged nozzle
- 2 Damaged or corroded wiring harness connector at the injector
- 3 Open or shorted wire in the injector control circuit
- 4 Poor electrical connection at the powertrain control module connector
- 5 Failed injector driver inside the powertrain control module
- 6 Contamination or debris in the fuel system affecting injector performance



How to diagnose and fix it

- 1 Perform a visual inspection of the cylinder 2 injector connector and wiring for damage or corrosion
- 2 Use a scan tool to check for related misfire codes and view live injector pulse width data
- 3 Measure the resistance of the cylinder 2 injector with a multimeter and compare to specifications
- 4 Check for battery voltage at the injector connector with the key on and engine off
- 5 Test the injector control circuit for continuity and shorts to ground or power
- 6 Swap the cylinder 2 injector with a known-good injector from another cylinder to see if the code moves
- 7 If the circuit and injector test good, diagnose the powertrain control module driver circuit

What a P02EF code really tells you

- A P02EF code can be set by a simple loose or dirty injector connector, so always check the plug before condemning the injector itself.
- The code refers to the electrical circuit performance, not necessarily a failed injector; a clogged injector can cause a performance fault without any electrical defect.
- On some vehicles, a weak battery or charging system issue can cause false injector circuit codes, so verify battery voltage and ground integrity first.
- A misfire from a bad spark plug or ignition coil can sometimes trigger an injector performance code as the computer tries to compensate, so check ignition components too.
- After replacing an injector, the fuel trim and injector coding may need to be reset with a scan tool on some vehicles to prevent the code from returning.

Can I keep driving with P02EF?

You can usually drive the vehicle with a P02EF code, but avoid heavy acceleration or towing until it is repaired because a misfire can damage the catalytic converter over time. If the engine is running very rough or flashing the check engine light, stop driving and seek service immediately.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Fuel injector test light or noid light
- Basic hand tools for connector and component access
- Service information for resistance specifications and wiring diagrams



Reading P02EF

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).
EF	The exact fault within that area.

Often seen with

P0171 System Too Lean (Bank 1) · **P0202** Injector Circuit Malfunction - Cylinder 2 · **P0261** Cylinder 1 Injector Circuit Low · **P0262** Cylinder 1 Injector Circuit High · **P0302** Cylinder 2 Misfire Detected

See it working

Watch the animated explainer [How a Padlock Works: Pin Tumbler Lock in X-Ray](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p02ef/>

