

GENERIC · POWERTRAIN

P02FE

OBD-II TROUBLE CODE

P02FE

Cold Start Fuel Injection Control Circuit Range/Performance

P02FE indicates that the engine control module has detected an out-of-range condition in the cold start fuel injection control circuit, which is responsible for delivering extra fuel when the engine is first started from a cold soak. The computer compares expected cold-start fuel delivery against actual circuit feedback and sets this code when the signal falls outside the calibrated range for a specified time.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Generic (all makes)	Medium	Intermediate	Fuel and air metering (injector circuits)

Symptoms you may notice

- Illuminated check engine light, often with no other noticeable symptoms
- Rough idle or stumbling immediately after a cold start
- Extended cranking time before the engine fires when cold
- Hesitation or flat spot during the first few minutes of driving
- Slightly elevated or erratic idle speed while the engine warms up
- Occasional lean misfire codes or a pending misfire during warm-up

Common causes, most likely first

- 1 Faulty cold start fuel injector or its electrical connector
- 2 Damaged or corroded wiring in the cold start injector circuit
- 3 Failed cold start injector timer switch or thermo-time switch
- 4 Engine control module software calibration issue or internal driver fault
- 5 Poor ground connection shared with the cold start circuit
- 6 Contaminated or clogged cold start injector nozzle
- 7 Low fuel pressure or restricted fuel delivery during cold cranking



How to diagnose and fix it

- 1 Scan all modules and record freeze-frame data to confirm when the code sets and whether other codes are present
- 2 Inspect the cold start injector connector and harness for corrosion, chafing, or loose pins
- 3 Measure resistance of the cold start injector and compare to the manufacturer's specification
- 4 Test the cold start injector timer switch or thermo-time switch for correct continuity at cold and warm temperatures
- 5 Check fuel pressure and delivery volume during cold cranking with a gauge
- 6 Verify the control circuit ground and power feed with a loaded test light or oscilloscope
- 7 If all electrical and fuel checks pass, reflash or replace the engine control module only after confirming the driver circuit is faulty

Cold start circuit checks most technicians skip

- Many vehicles set P02FE because the cold start injector timer switch is stuck closed, flooding the engine briefly on cold start rather than because the injector itself has failed.
- A weak battery or slow cranking speed can cause the engine control module to log this code even when the cold start circuit is electrically sound, because the module expects a minimum cranking RPM before enabling cold start enrichment.
- Technicians often replace the cold start injector without checking the shared ground point on the intake manifold or cylinder head, which is a common corrosion point that skews the circuit feedback.
- This code does not always mean the cold start injector is bad; a restricted fuel filter or failing fuel pump check valve can cause the same out-of-range condition during the cold start window.
- On some engines, a vacuum leak that leans out the mixture only when cold can trigger P02FE because the control module sees the cold start fuel trim outside its expected range.

Can I keep driving with P02FE?

You can usually drive the vehicle, but expect rough running and possible stalling during the first few minutes after a cold start. Avoid heavy acceleration and long warm-up idling until the fault is repaired, and address it promptly to prevent misfire damage to the catalytic converter.

Tools that help

- OBD-II scan tool with freeze-frame and live data capability
- Digital multimeter with resistance and continuity functions
- Fuel pressure gauge
- Test light or oscilloscope for circuit loading checks
- Basic hand tools for connector and sensor access



Reading P02FE

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).
FE	The exact fault within that area.

Often seen with

P0171 System Too Lean (Bank 1) · **P0172** System Too Rich (Bank 1) · **P0200** Injector Circuit Malfunction · **P02FD** Cold Start Fuel Injection Control Circuit High · **P0300** Random/Multiple Cylinder 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/p02fe/>

