



## P1227 · Kia

# Fuel Injector 3 Circuit Low Voltage

P1227 on a Kia indicates that the engine control module (ECM) has detected a low voltage condition on the electrical circuit for fuel injector number 3. This means the ECM is commanding the injector to open, but the voltage on the control wire is lower than expected, which can prevent the injector from firing properly and cause a misfire or rough running.

| SYSTEM     | CODE TYPE    | SEVERITY | FIX DIFFICULTY | AREA                                      |
|------------|--------------|----------|----------------|-------------------------------------------|
| Powertrain | Kia specific | Medium   | Intermediate   | Fuel and air metering (injector circuits) |

## Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms
- Rough idle or shaking, especially when the engine is cold
- Engine misfire, particularly noticeable during acceleration or under load
- Reduced engine power and poor fuel economy
- A strong fuel odor from the exhaust due to unburned fuel
- In severe cases, the engine may enter limp mode or stall

## Common causes, most likely first

- 1 Faulty fuel injector 3 (internal short or open coil)
- 2 Damaged or corroded wiring harness or connector at injector 3
- 3 Open or shorted circuit in the injector control wire between the ECM and injector 3
- 4 Poor electrical connection at the ECM connector
- 5 Failed ECM driver for injector 3 (rare but possible)
- 6 Contamination or clogging of injector 3 causing abnormal electrical load
- 7 Aftermarket or incorrect injector installed previously



## How to diagnose and fix it

- 1 Perform a visual inspection of the injector 3 connector and wiring for damage, corrosion, or loose pins
- 2 Use a scan tool to check for other codes and view live misfire data to confirm injector 3 is the problem
- 3 Measure the resistance of injector 3 with a multimeter and compare to the manufacturer's specification
- 4 Check for voltage on the injector control wire with the key on and engine off, then test for a short to ground or power
- 5 Swap injector 3 with a known-good injector from another cylinder to see if the misfire moves
- 6 Inspect the ECM connector for corrosion or loose terminals and repair as needed
- 7 If all electrical checks pass, replace injector 3 and clear the code, then verify the repair with a test drive

## Don't overlook the injector harness

- A common cause of P1227 on Kia vehicles is a chafed or broken wire in the injector harness near the intake manifold, often caused by vibration or heat damage.
- The code can be set by a poor connection at the injector itself, so always check the connector pins for tightness and corrosion before replacing the injector.
- A failed ECM is rarely the root cause, but it can happen; verify all wiring and injector resistance before condemning the computer.
- P1227 may appear alongside misfire codes like P0303, so diagnosing the misfire first can lead you directly to the injector circuit.
- After replacing an injector, the ECM may need to relearn the injector flow characteristics; some Kia models require a scan tool to perform this adaptation.

## Can I keep driving with P1227?

Driving with P1227 is possible but not recommended because a misfiring injector can damage the catalytic converter and cause poor performance. Avoid heavy acceleration and prolonged driving, and schedule a diagnosis as soon as possible.

## Tools that help

- OBD-II scan tool
- Digital multimeter
- Test light
- Wire probe set
- Socket set and extensions
- Factory service information for wiring diagrams and resistance specs



## Reading P1227

- P** Powertrain: engine, transmission and emissions.
- 1** Manufacturer-specific code (Kia): its meaning depends on the make.
- 2** Fuel and air metering (injector circuits).
- 27** The exact fault within that area.

## Often seen with

**P1226** Cylinder 2 Injector Circuit Short To Ground · **P1228** Cylinder 4 Injector Circuit Short To Ground · **P1226** Control Sleeve Sensor Circuit · **P1226** Fuel Injector 2 Circuit Low Voltage · **P1228** Fuel Injector 4 Circuit Low Voltage · **P1226** Mechanical Guard Circuit Range Performance · **P1228** Mechanical Guard Circuit High Input · **P1228** Injector Circuit Cylinder 3 Intermittent · **P1228** Wastegate Failed Open Under Pressure · **P1228** Injector Circuit Cylinder 3 Intermittent · **P0171** System Too Lean (Bank 1) · **P0203** Injector Circuit Malfunction - Cylinder 3 · **P0303** Cylinder 3 Misfire Detected

## See it working

Watch the animated explainer [V6 Engine Explained: 60° Bank and Firing Order](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/kia-p1227/>

