

KIA · POWERTRAIN

P1128

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1128 · Kia

Long Term Fuel Trim Multiplicative Air System High

P1128 on a Kia means the engine computer has detected that the long-term fuel trim has hit its richest correction limit in the multiplicative range, indicating the engine is running leaner than the computer can compensate for during higher-load conditions. The powertrain control module sets this code when the long-term fuel trim value exceeds a calibrated threshold, typically around +25 percent, signaling an unmetered air or fuel delivery problem.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Kia specific	Medium	Intermediate	Fuel and air metering

Symptoms you may notice

- Illuminated check engine light, often with no other noticeable symptoms
- Slight hesitation or stumble during acceleration or under load
- Rough idle or intermittent misfire, especially when cold
- Reduced fuel economy as the computer adds extra fuel
- Occasional surging or lack of power on hills or when passing

Common causes, most likely first

- 1 Vacuum leak from a cracked or disconnected intake hose, intake manifold gasket, or PCV hose
- 2 Dirty or failing mass air flow (MAF) sensor reporting less air than actually enters the engine
- 3 Weak or clogged fuel injectors delivering insufficient fuel under load
- 4 Low fuel pressure from a failing fuel pump, clogged fuel filter, or faulty pressure regulator
- 5 Leaking intake manifold gasket or worn throttle body gasket allowing unmetered air
- 6 Exhaust leak upstream of the oxygen sensor causing a false lean reading
- 7 Faulty upstream oxygen sensor with a skewed or lazy signal



How to diagnose and fix it

- 1 Connect a scan tool and record freeze-frame data and long-term fuel trim values at idle and under load to confirm the lean condition
- 2 Visually inspect all intake air ducts, vacuum hoses, and the PCV system for cracks, loose clamps, or disconnected lines
- 3 Perform a smoke test on the intake system to pinpoint vacuum leaks that are not visible
- 4 Clean the mass air flow sensor with approved cleaner and verify its live reading against expected values
- 5 Check fuel pressure with a gauge and compare to Kia specifications; replace the fuel filter if pressure is low
- 6 Test fuel injectors for flow, resistance, and spray pattern; replace any that are clogged or weak
- 7 Inspect the exhaust system for leaks before the upstream oxygen sensor and replace the sensor if its signal is erratic

Why P1128 often isn't a sensor problem

- A loose or missing oil filler cap or dipstick can create a vacuum leak large enough to set P1128 on many Kia engines, so check those simple items first.
- The multiplicative fuel trim range only activates at higher engine loads, so a vacuum leak that is minor at idle may not trigger the code until you accelerate hard or climb a hill.
- A dirty mass air flow sensor is frequently misdiagnosed as a failed sensor; cleaning it often restores normal fuel trim without replacement.
- Aftermarket air filters that are over-oiled can contaminate the MAF sensor and cause a lean reading that sets P1128, even though the filter itself is not defective.
- P1128 can be set by a failing fuel pump that still delivers enough volume at idle but cannot keep up under load, so a simple pressure test at idle may pass while the pump is still weak.

Can I keep driving with P1128?

You can usually drive the vehicle short distances to a repair shop, but avoid heavy acceleration, towing, or sustained high-speed driving because the lean condition can cause overheating and engine damage over time. If the check engine light begins flashing or you notice severe misfiring, stop driving and have the vehicle towed.

Tools that help

- OBD-II scan tool with live data and freeze-frame capability
- Smoke machine for intake leak detection
- Fuel pressure gauge
- Vacuum gauge
- Digital multimeter
- Basic hand tools and screwdrivers



Reading P1128

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

Often seen with

P0171 System Too Lean (Bank 1) · **P0174** System Too Lean (Bank 2) · **P0300** Random/Multiple Cylinder Misfire Detected · **P0301** Cylinder 1 Misfire Detected · **P0420** Catalyst System Efficiency Below Threshold (Bank 1)

See it working

Watch the animated explainer [How a Helicopter Flies: Rotor and Tail in X-Ray](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/kia-p1128/>

