

KIA · POWERTRAIN

P1123

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1123 · Kia

Long Term Fuel Trim Adaptive Air System Low

P1123 on Kia vehicles means the engine computer has detected that the long-term fuel trim has adapted to its richest limit because the adaptive air system is reporting less air than the engine is actually receiving. The powertrain control module (PCM) is adding maximum fuel to compensate for a persistent lean condition it cannot explain through normal sensor feedback.

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

Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms.
- Rough idle or intermittent stalling when the engine is cold or under light load.
- Hesitation or a flat spot during acceleration from a stop.
- Reduced fuel economy as the PCM commands a richer mixture.
- Occasional engine surging or unstable RPM at idle.
- A lean exhaust smell or black smoke from the tailpipe in severe cases.

Common causes, most likely first

- 1 A dirty or failing mass air flow (MAF) sensor that under-reports intake air.
- 2 An intake air leak between the MAF sensor and the throttle body, such as a cracked intake hose or loose clamp.
- 3 A faulty manifold absolute pressure (MAP) sensor or a clogged MAP sensor port.
- 4 A restricted or dirty air filter element that skews adaptive air calculations.
- 5 A sticking or contaminated idle air control (IAC) valve or electronic throttle body.
- 6 A weak fuel pump or restricted fuel filter causing low fuel pressure that mimics an air system fault.
- 7 A leaking intake manifold gasket or a cracked vacuum hose that introduces unmetered air.



How to diagnose and fix it

- 1 Inspect the air intake tract for cracks, loose clamps, or disconnected hoses between the MAF sensor and throttle body.
- 2 Clean the MAF sensor with a dedicated MAF cleaner and verify its output with a scan tool live data stream.
- 3 Replace a clogged air filter element and recheck fuel trim values.
- 4 Check fuel pressure with a gauge and compare to Kia specifications for the engine; replace the fuel filter if restricted.
- 5 Test the MAP sensor signal and inspect its vacuum port for carbon blockage.
- 6 Perform a smoke test on the intake system to locate hidden vacuum leaks.
- 7 Clear the adaptive fuel trim memory with a scan tool and road-test the vehicle to confirm the code does not return.

What the adaptive air system really means

- P1123 is often set by a dirty MAF sensor that still reads within a plausible range but is biased low, so a simple resistance check will not catch it.
- A weak fuel pump can cause the same long-term fuel trim max-out as an air system fault, so always verify fuel pressure before replacing air-related parts.
- On some Kia models, a loose or missing oil filler cap or dipstick can create a vacuum leak that triggers this code.
- The code does not always mean the MAF sensor is bad; a clogged PCV valve or a leaking brake booster diaphragm can also skew adaptive air calculations.
- After any repair, the PCM must relearn its adaptive fuel trim values, so clearing the code and performing a drive cycle is essential to confirm the fix.

Can I keep driving with P1123?

You can drive the vehicle short distances to a repair shop, but avoid heavy acceleration, towing, or prolonged highway driving because the engine is running rich and fuel economy will suffer. If the check engine light starts flashing or the engine runs rough, stop driving and have it towed.

Tools that help

- OBD-II scan tool with live data and fuel trim display
- MAF sensor cleaner spray
- Fuel pressure gauge
- Smoke machine for intake leak testing
- Basic hand tools and screwdrivers



Reading P1123

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

Often seen with

P0101 Mass/Volume Air Flow Circuit Range/Performance · **P0106** MAP/Barometric Pressure Circuit Range/Performance · **P0171** System Too Lean (Bank 1) · **P0172** System Too Rich (Bank 1) · **P0505** Idle Control System Malfunction

See it working

Watch the animated explainer [How a Radiator Fan Relay Circuit Works](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/kia-p1123/>

