

KIA · POWERTRAIN

P1510

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1510 · Kia

Idle Air Control Valve Closing Coil High Voltage

On Kia vehicles, P1510 means the engine control module (ECM) has detected an abnormally high voltage on the closing coil circuit of the idle air control (IAC) valve. The ECM commands the valve's closing coil to move the pintle and expects a specific voltage drop across that winding, but the sensed voltage stays above the expected range, indicating an open winding, a broken wire, or a poor connection in that circuit.

SYSTEM

Powertrain

CODE TYPE

Kia specific

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Vehicle speed, idle control and auxiliary inputs

Symptoms you may notice

- Check engine light illuminated on the dashboard
- Rough or erratic idle, sometimes surging or hanging high
- Engine stalls when coming to a stop or when the throttle is released
- Idle speed that stays too high and will not settle down after warm-up
- Hard starting or stalling immediately after startup
- Often no symptoms besides the warning light if the fault is intermittent

Common causes, most likely first

- 1 Open or broken winding inside the IAC valve closing coil
- 2 Corroded, loose, or backed-out pins in the IAC valve connector
- 3 Damaged or chafed wiring between the IAC valve and the ECM
- 4 Failed IAC valve motor assembly from carbon buildup or heat fatigue
- 5 Faulty ECM driver circuit for the closing coil (less common)
- 6 Poor ground connection shared with the IAC circuit



How to diagnose and fix it

- 1 Scan all modules and record freeze-frame data to confirm when P1510 set
- 2 Inspect the IAC valve connector and harness for corrosion, looseness, or chafing
- 3 Measure closing coil resistance at the valve terminals and compare to Kia specification
- 4 Check continuity and voltage drop on each wire from the IAC connector back to the ECM
- 5 Verify the ECM is commanding the closing coil with a scope or bidirectional scan tool
- 6 Clean or replace the IAC valve if the coil is open or out of specification
- 7 Clear codes and perform an idle relearn, then road test to confirm the repair

What the closing coil test really reveals

- A high-voltage code almost always means an open circuit, so a broken winding or unplugged connector is far more likely than a shorted valve.
- Carbon buildup can seize the pintle and overheat the closing coil, so a valve that tests good cold may fail once the engine warms up.
- Technicians sometimes replace the IAC valve only to find a chafed wire in the harness near the intake manifold, so always wiggle-test the loom.
- A weak or corroded ground shared with the IAC circuit can mimic a failed coil, so check grounds before condemning the valve.
- After replacement, the ECM must relearn idle position or the engine may idle high and set a new code even though the repair was correct.

Can I keep driving with P1510?

You can usually drive the car, but expect a rough or high idle and possible stalling when you lift off the throttle, so avoid heavy stop-and-go traffic. Have it diagnosed soon, because a stalling engine in traffic is a safety risk.

Tools that help

- OBD-II scan tool with bidirectional control
- Digital multimeter
- Back probe kit
- Wiring diagram for the Kia model
- Socket and screwdriver set



Reading P1510

- P** Powertrain: engine, transmission and emissions.
- 1** Manufacturer-specific code (Kia): its meaning depends on the make.
- 5** Vehicle speed, idle control and auxiliary inputs.
- 10** The exact fault within that area.

Often seen with

P1509 Idle Air Control Circuit Electrical Malfunction · **P1509** Idle Air Control Circuit Shorted · **P1509** Idle Air Control Circuit Shorted · **P1509** IAC System High RPM · **P1509** IAC System High RPM · **P1509** Idle Speed Control Valve Opening Solenoid Control Circuit EI · **P0505** Idle Control System Malfunction · **P0506** Idle Control System RPM Lower Than Expected · **P0507** Idle Control System RPM Higher Than Expected · **P0511** Idle Air Control Circuit

See it working

Watch the animated explainer [Four-Stroke Engine Cutaway: Intake to Exhaust](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/kia-p1510/>

