

KIA · POWERTRAIN

P1505

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1505 · Kia

Idle Air Control Valve Opening Coil Voltage Low

The P1505 code on Kia vehicles indicates that the engine control module (ECM) has detected a low voltage condition on the opening coil circuit of the idle air control (IAC) valve. The ECM monitors the electrical current through the IAC valve's opening coil and sets this code when the voltage falls below the expected threshold, which can disrupt the valve's ability to maintain proper idle speed.

SYSTEM

Powertrain

CODE TYPE

Kia specific

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Vehicle speed, idle control and auxiliary inputs

Symptoms you may notice

- Illuminated check engine light, often with no other noticeable symptoms
- Rough or unstable idle, sometimes causing the engine to stall when coming to a stop
- Idle speed that is too low or fluctuates up and down
- Engine may hesitate or stumble during acceleration from idle
- In some cases, the engine may idle too high if the valve sticks open

Common causes, most likely first

- 1 Faulty idle air control valve (opening coil internally shorted or open)
- 2 Damaged or corroded electrical connector at the IAC valve
- 3 Wiring harness issue such as a short to ground or an open circuit in the coil control wire
- 4 Poor connection at the engine control module (ECM) connector
- 5 Failed ECM driver for the IAC valve opening coil (rare)



How to diagnose and fix it

- 1 Inspect the IAC valve electrical connector for corrosion, loose pins, or damage and clean or repair as needed
- 2 Disconnect the IAC valve and measure the resistance of the opening coil with a multimeter, comparing to the manufacturer's specification
- 3 Check the wiring harness between the IAC valve and ECM for continuity and shorts to ground, repairing any damaged wires
- 4 Test the IAC valve operation by applying battery voltage to the opening coil terminals and observing valve movement
- 5 If the valve fails electrical tests, replace the idle air control valve
- 6 Clear the diagnostic trouble codes and perform an idle relearn procedure if required by the vehicle
- 7 If the code persists after all other checks, diagnose the ECM driver circuit or replace the ECM as a last resort

Don't overlook the IAC valve connector

- A loose or corroded connector at the IAC valve is a frequent cause of this code, often overlooked when technicians focus on the valve itself.
- The opening coil can fail intermittently, so resistance tests may pass when cold but fail when hot; testing the valve when the engine is at operating temperature can reveal the fault.
- This code can be set by a wiring short to ground in the coil control circuit, which may also damage the ECM driver if not repaired promptly.
- Some Kia models use an idle air control valve that is part of the throttle body assembly, so a faulty throttle body can trigger this code even if the valve itself is not serviceable separately.
- A vacuum leak or dirty throttle body can cause idle issues that mimic a failed IAC valve, so always check for intake leaks and clean the throttle body before replacing parts.

Can I keep driving with P1505?

You can usually drive the vehicle with this code, but be prepared for idle instability that could cause stalling at low speeds. Avoid heavy traffic or situations where a stall would be dangerous, and have the fault diagnosed promptly to prevent further damage to the ECM or catalytic converter.

Tools that help

- OBD-II scanner
- Digital multimeter
- Socket set
- Screwdrivers
- Wire repair kit



Reading P1505

- 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.
- 05** The exact fault within that area.

Often seen with

P1506 Closed Throttle Position Switch Does Not Open Short To Groun · **P1507** Idle System Learned Value Lower Limit Attained · **P1507** Idle Control System Malfunction Fail Safe · **P1506** Idle Air Control Valve Opening Coil Voltage High · **P1507** Idle Air Control Valve Closing Coil Voltage Low · **P1506** Idle Air Control Over Speed Error · **P1507** Idle Air Control Under Speed Error · **P1506** Idle Speed Control Valve Open Solenoid Control Circuit Signa · **P1507** Idle Speed Control Valve Open Solenoid Control Circuit Signa · **P0505** Idle Control System Malfunction · **P0506** Idle Control System RPM Lower Than Expected · **P0507** Idle Control System RPM Higher Than Expected

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-p1505/>

