

KIA · POWERTRAIN

P1425

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1425 · Kia

EVAP Purge Control Solenoid Circuit Low Voltage

P1425 on a Kia means the engine computer has detected an abnormally low voltage on the electrical circuit that controls the evaporative emissions (EVAP) purge solenoid valve. The computer expects to see battery voltage on the control wire when the valve is commanded off, but the signal is lower than expected, indicating a short to ground, an open circuit, or a faulty solenoid.

SYSTEM

Powertrain

CODE TYPE

Kia specific

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Auxiliary emission controls

Symptoms you may notice

- Illuminated check engine light, often with no other noticeable symptoms
- A faint fuel or gasoline odor around the vehicle, especially after refueling
- Slightly rough idle or occasional stumble when the purge valve is commanded open
- Difficulty filling the fuel tank or premature fuel nozzle shut-off in some cases
- Failed emissions inspection due to the stored trouble code
- In rare cases, a no-start condition if the purge valve sticks open and floods the intake with fuel vapor

Common causes, most likely first

- 1 Failed EVAP purge solenoid valve with an internally shorted coil
- 2 Damaged or chafed wiring between the purge solenoid and the engine computer, shorting to ground
- 3 Corroded or loose electrical connector at the purge solenoid
- 4 Open circuit in the power feed or ground side of the purge solenoid circuit
- 5 Faulty engine computer driver for the purge solenoid (rare but possible)
- 6 Aftermarket alarm or remote start wiring tapped into the purge circuit incorrectly



How to diagnose and fix it

- 1 Scan all modules and record freeze-frame data to confirm P1425 is the only EVAP-related code
- 2 Visually inspect the purge solenoid connector and wiring for corrosion, chafing, or loose pins
- 3 Measure resistance across the purge solenoid coil and compare to the manufacturer's specification
- 4 Check for battery voltage on the power feed wire at the solenoid with the key on, engine off
- 5 Perform a voltage drop test on the ground side of the circuit while commanding the solenoid on with a scan tool
- 6 Disconnect the computer and check for a short to ground on the control wire using a multimeter
- 7 Replace the purge solenoid if the coil is out of specification or the valve fails a functional test, then clear codes and verify the repair

What most technicians miss on P1425

- A purge solenoid that tests fine electrically can still set P1425 intermittently due to a wiring harness rub-through hidden behind the intake manifold or near the strut tower.
The code can be set by a poor ground connection at the engine computer itself, not just at the solenoid, so always verify computer grounds before condemning the computer.
- Some Kia models use a purge solenoid that is normally closed; a stuck-open valve will not always set P1425 but can cause a hard start after refueling and should be checked if the code returns.
- Aftermarket remote start or alarm systems spliced into the purge circuit are a common cause of unexplained low-voltage codes on this circuit.
P1425 does not always mean the solenoid is bad; a simple loose connector or backed-out terminal can mimic a failed solenoid and cost far less to fix.

Can I keep driving with P1425?

You can usually drive the vehicle with P1425 stored, but avoid topping off the fuel tank and park outside if you smell raw fuel, because a stuck-open purge valve can flood the intake and cause a no-start or fuel leak concern. Have the circuit inspected soon to prevent evap system damage and emissions test failure.

Tools that help

- OBD-II scan tool with bidirectional control capability
- Digital multimeter
- Wire piercing probes or back-probe kit
- Hand tools for connector and component removal
- Factory service information for wiring diagrams and resistance specifications



Reading P1425

- P** Powertrain: engine, transmission and emissions.
- 1** Manufacturer-specific code (Kia): its meaning depends on the make.
- 4** Auxiliary emission controls.
- 25** The exact fault within that area.

Often seen with

P1426 Tank Ventilation Valve Open Circuit · **P0441** EVAP System Incorrect Purge Flow · **P0442** EVAP System Leak Detected (Small) · **P0455** EVAP System Leak Detected (Large) · **P0456** Evaporative Emission System Leak Detected (very small leak)

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-p1425/>

