



P1497 · Kia

EGR Stepper Motor Malfunction Circuit 2 1.8L

P1497 on Kia 1.8L engines indicates that the powertrain control module (PCM) has detected an electrical fault in the control circuit for the second winding of the exhaust gas recirculation (EGR) stepper motor. The PCM monitors the current flow through each stepper motor coil and sets this code when the expected current signature is not present, pointing to an open, short, or excessive resistance in that specific circuit.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Kia specific	Medium	Intermediate	Auxiliary emission controls

Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms
- Rough idle or idle surge, particularly when the engine is cold
- Hesitation or stumble during light acceleration
- Increased exhaust emissions, which may cause a state inspection failure
- In rare cases, a slight decrease in fuel economy
- A buzzing or clicking noise from the EGR valve area after the engine is shut off

Common causes, most likely first

- 1 Open or damaged wire in the EGR stepper motor circuit 2 (coil B) between the PCM and the valve
- 2 Corroded or loose electrical connector at the EGR stepper motor or PCM
- 3 Failed EGR stepper motor winding (open or shorted coil)
- 4 Short to ground or short to power in the circuit 2 wiring
- 5 Faulty PCM driver for the stepper motor circuit (rare)
- 6 Carbon buildup or mechanical binding inside the EGR valve causing the motor to overheat and fail



How to diagnose and fix it

- 1 Scan all modules for stored and pending codes, and record freeze-frame data to confirm the fault conditions.
- 2 Visually inspect the EGR valve connector and the PCM connector for corrosion, pushed pins, or loose terminals; clean and reseat as needed.
- 3 Disconnect the EGR valve and measure the resistance of the stepper motor coils; compare to the manufacturer's specification (typically 10–30 ohms) to identify an open or shorted winding.
- 4 With the ignition off, check the circuit 2 wiring for continuity between the EGR valve connector and the PCM connector; repair any open or high-resistance wire.
- 5 Test for shorts to ground and shorts to power on the circuit 2 wire using a multimeter; repair any damaged insulation or routing issues.
- 6 If the wiring and motor test good, substitute a known-good EGR valve and clear the code to see if it returns; if it does, suspect the PCM.
- 7 After repairs, clear codes and perform a road test with the appropriate drive cycle to verify the EGR monitor completes and the code does not reset.

What most technicians overlook on P1497

- A stuck or carbon-fouled EGR valve can cause the stepper motor to draw excessive current, eventually damaging the driver circuit and setting P1497 even when the motor itself tests fine.
- The PCM may set P1497 intermittently if the EGR valve connector is not fully latched; always perform a wiggle test on the harness while monitoring live data.
- On some Kia 1.8L engines, the EGR stepper motor shares a ground with other sensors, so a poor ground can mimic a circuit 2 failure and lead to unnecessary PCM replacement.
- P1497 can be stored alongside P0400 (EGR flow malfunction) when a mechanical EGR problem causes both electrical and flow codes; diagnose the electrical fault first to avoid chasing the wrong system.
- After replacing the EGR valve, the PCM may need a relearn procedure or a specific drive cycle to reset the adaptive values; skipping this step can cause the code to reappear immediately.

Can I keep driving with P1497?

You can generally drive the vehicle short distances with P1497 set, but avoid prolonged driving because the EGR system is disabled and increased combustion temperatures may damage other components over time. Have the fault diagnosed promptly, especially if you notice drivability symptoms or need to pass an emissions inspection.



Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Wire terminal pick and electrical contact cleaner
- Factory service information for wiring diagrams and resistance specifications
- Basic hand tools (socket set, screwdrivers)

Reading P1497

P Powertrain: engine, transmission and emissions.

1 Manufacturer-specific code (Kia): its meaning depends on the make.

4 Auxiliary emission controls.

97 The exact fault within that area.

Often seen with

P1498 EGR Valve Lift Sensor High Voltage · **P1496** 5 Volt Supply Output Too Low · **P1496** EGR Stepper Motor Malfunction Circuit 1 (1.8L) · **P1498** EGR Stepper Motor Malfunction Circuit 3 1.8L · **P1498** EGR Valve Lift Sensor High Voltage · **P1496** 5 Volt Supply Output Too Low · **P1498** High speed Rad Fan Ground CTRL Rly Circuit · **P1496** 5 Volt Supply Output Too Low · **P1498** High Speed Rad Fan Ground CTRL Rly Circuit · **P0400** Exhaust Gas Recirculation Flow Malfunction · **P0401** EGR Flow Insufficient Detected · **P0402** EGR Flow Excessive Detected

See it working

Watch the animated explainer [How the EVAP System Works: Fuel Vapour and Leak Test](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/kia-p1497/>

