



P1102 · Kia

HO2S11 Heater Circuit High Voltage

P1102 on a Kia means the engine control module (ECM) has detected an abnormally high voltage on the heater circuit of the upstream oxygen sensor on bank 1, sensor 1 (HO2S11). The ECM expects the heater element to draw current and pull the circuit voltage down when commanded on, so a voltage reading that stays near battery voltage tells the module the heater circuit is open, disconnected, or shorted to power.

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 symptoms besides the warning light
- A pending or stored P1102 with no noticeable change in driveability on many Kia models
- Slightly higher fuel consumption once the ECM stops trusting the upstream oxygen sensor and runs a richer default strategy
- Rough or unstable idle in the first minute or two after a cold start while the sensor is still cold and the heater is not working
- Occasional hesitation or sluggish throttle response when the ECM substitutes default fuel control values
- Failed emissions inspection because the oxygen sensor heater monitor will not complete

Common causes, most likely first

- 1 Open heater element inside the HO2S11 sensor itself, which is the most common cause on high-mileage Kia engines
- 2 Broken or corroded wire in the heater power feed or ground path between the sensor and the ECM
- 3 Loose, backed-out, or water-intruded connector pins at the oxygen sensor or at the ECM harness
- 4 Blown fuse or faulty relay in the oxygen sensor heater power supply circuit
- 5 Short to battery voltage on the heater control wire, which holds the circuit high and sets the code
- 6 Corrosion or chafing in the harness where it routes near the exhaust manifold or transmission
- 7 Rare ECM driver failure on the heater control output, usually only after all wiring and sensor checks pass



How to diagnose and fix it

- 1 Clear the code and road test to confirm it returns, then record freeze-frame data to see the conditions when it set
- 2 Inspect the HO2S11 connector and the harness for corrosion, chafing, or pushed-out pins, and check the heater circuit fuse
- 3 Measure the resistance of the sensor heater element across its two heater terminals and compare it to the Kia specification for the engine
- 4 With the key on and the sensor disconnected, check for battery voltage on the heater power feed and check the ground side for excessive resistance
- 5 Back-probe the heater control wire at the ECM and verify the module pulls the circuit low when the heater is commanded on
- 6 Repair or replace the faulty section of harness, connector, or fuse, then clear the code and verify the heater monitor completes
- 7 If the wiring and power supply are good but the heater element is open, replace the HO2S11 sensor with the correct Kia-specified part and recheck

What the heater circuit voltage really tells you

- A high-voltage heater code almost always means the circuit is open, not that the sensor is reading lean or rich, so do not replace the sensor for a mixture fault before checking the heater resistance.
- Kia oxygen sensor heaters are powered through a fuse and controlled on the ground side by the ECM on many models, so a blown fuse can set this code even though the sensor itself is fine.
- Water intrusion into the connector behind the engine can corrode the heater pins and create an open circuit that only appears after rain or a car wash, so inspect the connector before condemning the sensor.
- A short to battery voltage on the heater control wire will also set P1102, and this is easy to miss if you only check the sensor resistance and never check the control wire with the key on.
- The ECM may still run the engine acceptably with this code stored, so a smooth-running Kia with P1102 is not proof the sensor is healthy; the heater monitor simply has not passed.

Can I keep driving with P1102?

You can usually keep driving a Kia with P1102 because the engine will run on default fuel control, but avoid long periods of idling and cold-start short trips until it is repaired. Have the circuit checked soon, since a failed heater monitor will block emissions testing and can increase fuel consumption.



Tools that help

- OBD-II scan tool with live data and freeze-frame capability
- Digital multimeter with resistance and voltage ranges
- Back-probe pins or piercing probes for harness testing
- Wiring diagram for the specific Kia model and engine
- Basic hand tools for connector and sensor access

Reading P1102

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

Often seen with

P1101 Oxygen Sensor Circuit Bank 1 Sensor 1 Voltage Too Low/Air Le · **P1101** Neutral Position Switch Circuit Malfunction M/T · **P1101** Traction Control Vacuum Solenoid Circuit Fault · **P1101** Mass Air Flow Sensor Circuit Out Of Self-Test Range · **P1101** Mass Air Flow Sensor Out of Self-Test Range · **P0030** HO2S Heater Control Circuit (Bank 1 Sensor 1) · **P0031** HO2S Heater Control Circuit Low (Bank 1 Sensor 1) · **P0135** O2 Sensor Heater Circuit Malfunction (Bank 1 Sensor 1) · **P0141** O2 Sensor Heater Circuit Malfunction (Bank 1 Sensor 2)

See it working

Watch the animated explainer [Engine Cooling System Trainer: How Engines Stay Cool](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/kia-p1102/>

