

GENERIC · POWERTRAIN

P0E91

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0E91

Drive Motor A Inverter Voltage Sensor B Circuit Low

P0E91 indicates that the inverter for drive motor A has detected a low voltage condition on its 'B' voltage sensor circuit, which monitors a specific phase or internal bus voltage. The computer sets this code when the sensor signal falls below the expected threshold for a calibrated time, often indicating a short to ground, a faulty sensor, or a wiring issue.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Generic (all makes)	High	Professional	Hybrid propulsion

Symptoms you may notice

- Illumination of the check engine light or service vehicle soon message
- Reduced power or limp mode, as the inverter may limit motor output to protect components
- Possible stalling or failure to start if the hybrid system disables the motor
- Intermittent hesitation or rough operation under load
- Often no symptoms besides the warning light, especially if the fault is intermittent

Common causes, most likely first

- 1 Faulty voltage sensor B inside the inverter assembly
- 2 Damaged or chafed wiring harness between the sensor and the inverter control module
- 3 Corroded or loose electrical connector at the sensor or inverter
- 4 Short to ground in the sensor signal circuit
- 5 Internal inverter fault causing incorrect sensor readings
- 6 Low auxiliary battery voltage or poor grounds affecting sensor reference voltage

How to diagnose and fix it

- 1 Perform a visual inspection of the inverter wiring and connectors for damage or corrosion
- 2 Check for technical service bulletins (TSBs) related to the inverter voltage sensor circuit
- 3 Measure sensor reference voltage and signal voltage with a multimeter to verify the low condition
- 4 Perform a voltage drop test on the sensor ground circuit to rule out high resistance
- 5 Inspect and test the wiring harness for shorts to ground or open circuits
- 6 If the sensor is integral to the inverter, follow manufacturer procedures to replace or repair the inverter assembly
- 7 Clear codes and perform a road test to confirm the repair



Don't overlook the inverter ground

- A poor ground connection at the inverter chassis can cause a low voltage sensor reading even when the sensor itself is good, so always check ground straps and mounting points.
- Intermittent low voltage codes often stem from wiring chafing near hot or moving components, which may not be visible without wiggling the harness while monitoring live data.
- The code can be set by a weak 12-volt auxiliary battery if the inverter's reference voltage drops during cranking, so load-test the battery before condemning the inverter.
- Some manufacturers require a software update to the inverter control module to correct false low-voltage readings, so check for calibration updates before parts replacement.
- This code does not always mean the inverter has failed; a simple connector pin tension issue can cause the same symptom and is far cheaper to fix.

Can I keep driving with P0E91?

If the vehicle enters limp mode or the warning light is accompanied by reduced power, avoid driving at high speeds or under heavy load and seek service promptly. Continued driving with a low voltage sensor fault may lead to inverter damage or a sudden loss of propulsion.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Wiring diagram for the specific vehicle
- Insulation piercing probes or back probe pins
- Torque wrench for inverter mounting bolts

Reading P0E91

P	Powertrain: engine, transmission and emissions.
0	Generic (SAE) code: it means the same thing on every OBD-II vehicle.
E	Hybrid propulsion.
91	The exact fault within that area.

Often seen with

P0A0A High Voltage System Interlock Circuit A · **P0A1F** Battery Energy Control Module A Performance · **P0C00** Drive Motor A Current Low · **P0E90** Drive Motor A Inverter Voltage Sensor B Circuit Range/Perfor · **P0E92** Drive Motor A Inverter Voltage Sensor B Circuit High



See it working

Watch the animated explainer [How Regenerative Braking Works in Electric Cars](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p0e91/>

