

GENERIC · POWERTRAIN

P0ED4

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0ED4

Hybrid/EV Battery Pack E Voltage Sensor Circuit Low

P0ED4 indicates that the hybrid or electric vehicle battery pack control module has detected an abnormally low voltage signal from the sensor circuit monitoring the voltage of battery pack section E. The computer compares the sensor's reported voltage against expected values and flags the circuit as low when the signal falls below the calibrated threshold, which can be caused by a faulty sensor, damaged wiring, or a problem inside the battery pack itself.

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

Symptoms you may notice

- Illumination of the hybrid system warning light or service vehicle soon message
- Reduced electric-only driving range or the vehicle refusing to enter EV mode
- A sudden drop in state of charge displayed on the dash even after charging
- Reduced power output or limp-home mode in some vehicles
- Often no symptoms besides the warning light, especially if the fault is intermittent
- Charging system may abort or fail to complete a full charge cycle

Common causes, most likely first

- 1 Faulty voltage sensor or sensing harness internal to the battery pack section E
- 2 Corroded, loose, or damaged connector pins at the battery pack voltage sensor
- 3 Open or shorted wire in the voltage sensing circuit between the sensor and the battery control module
- 4 High-resistance ground connection for the voltage sensor circuit
- 5 Internal battery pack fault such as a weak or failing cell group in section E
- 6 Battery control module software or hardware issue causing incorrect signal interpretation
- 7 Water intrusion or contamination affecting the sensor or its wiring inside the pack



How to diagnose and fix it

- 1 Retrieve all stored codes and freeze-frame data, then clear codes and verify whether P0ED4 returns immediately or only after a drive cycle
- 2 Inspect the battery pack voltage sensor connector and harness for corrosion, looseness, or physical damage, and repair as needed
- 3 Measure resistance and voltage drop on the sensor signal and ground circuits to confirm wiring integrity before condemning the sensor
- 4 Compare the section E voltage reading from the scan tool live data against a known-good section or a manual measurement at the pack terminals
- 5 If wiring and connectors are good, replace the voltage sensor for section E according to the manufacturer's service procedure
- 6 After repair, perform the required battery pack calibration or relearn procedure and clear codes, then road-test to confirm the code does not reset
- 7 If the fault persists with a new sensor and verified wiring, perform a battery pack module diagnostic to check for internal cell group imbalance or module failure

What the voltage sensor reading really tells you

- A low voltage signal from section E does not automatically mean the battery pack is failing; a poor connector pin tension or a chafed sense wire often produces the same code and is far cheaper to fix.
- Many technicians replace the voltage sensor without first checking the reference voltage and ground at the sensor connector, which leads to a repeat repair when the real problem is a high-resistance ground.
- The battery control module may set P0ED4 only after a specific key-on or charging event, so a simple code clear and short drive can miss an intermittent fault that appears during a full charge cycle.
- On some vehicles, a weak 12-volt auxiliary battery or low charging system voltage can cause the battery control module to misread sensor signals and set false low-voltage codes.
- Section E voltage sensor faults are sometimes accompanied by cell balancing codes or insulation resistance codes, so always scan all modules before deciding the repair is limited to the sensor circuit.

Can I keep driving with P0ED4?

You can usually continue driving short distances to a repair shop, but avoid aggressive acceleration, prolonged high-speed driving, and deep discharging the pack until the fault is diagnosed. If the vehicle enters limp mode or shows a high-voltage system warning, stop driving and have it towed to avoid further battery pack stress.



Tools that help

- OBD-II scan tool with hybrid/EV battery pack live data capability
- Digital multimeter with min/max recording and low-ohm resolution
- Manufacturer service information for battery pack voltage sensor circuit testing
- Insulation tester for high-voltage circuit checks where required
- Battery pack lifting or access equipment if sensor replacement requires pack removal

Reading P0ED4

P	Powertrain: engine, transmission and emissions.
0	Generic (SAE) code: it means the same thing on every OBD-II vehicle.
E	Hybrid propulsion.
D4	The exact fault within that area.

Often seen with

P0A9C Hybrid/EV Battery Temperature Sensor A Circuit Range/Perform · **P0AFA** Hybrid/EV Battery System Voltage Low · **P0B24** Hybrid/EV Battery A Voltage Unstable · **P0ED3** Hybrid/EV Battery Pack E Voltage Sensor Circuit Range/Perfor · **P0ED5** Hybrid/EV Battery Pack E Voltage Sensor 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/p0ed4/>

