

GENERIC · POWERTRAIN

P0B7E

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0B7E

Hybrid/EV Battery Voltage Sense N Circuit Low

P0B7E indicates that the hybrid or electric vehicle battery pack's voltage sensing circuit for the 'N' position is reporting a voltage that is lower than the manufacturer's expected range, which the battery energy control module uses to monitor individual cell group health. The computer detects this when the signal wire from the voltage sense circuit returns a voltage below the calibrated threshold, often due to a wiring fault, a poor connection, or an internal issue within the battery pack.

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 on the dashboard
- Often no symptoms besides the warning light, especially if the fault is intermittent
- Reduced electric-only driving range or the vehicle refusing to enter EV mode
- A sudden drop in state of charge or inconsistent battery gauge readings
- Possible limp mode or reduced power output if the fault triggers a protective shutdown

Common causes, most likely first

- 1 Corroded, loose, or damaged voltage sense wire or connector at the battery pack
- 2 Open or shorted voltage sense circuit between the battery module and the control module
- 3 Faulty cell voltage sensing harness or printed circuit board inside the battery pack
- 4 Internal failure of the battery energy control module or its voltage sensing circuitry
- 5 A weak or failing battery module causing the sense circuit to read out of range
- 6 Water intrusion or contamination in the battery pack connector causing signal degradation



How to diagnose and fix it

- 1 Inspect the voltage sense connector and wiring at the battery pack for corrosion, looseness, or damage
- 2 Measure resistance and voltage drop on the sense circuit to confirm an open or short
- 3 Check the battery energy control module for stored freeze-frame data and perform a voltage sense circuit test with a scan tool
- 4 Compare the reported voltage for the 'N' sense circuit against a known-good reference or adjacent sense circuits
- 5 Repair or replace the faulty wiring harness or connector as needed
- 6 If wiring is intact, test the battery module and control module according to manufacturer procedures
- 7 Clear the code and perform a road test to verify the repair and ensure the code does not return

What the voltage sense code really means

- A low voltage sense reading often results from a poor connection rather than a failed battery pack, so always check connector pin tension and corrosion first.
The 'N' designation refers to a specific sense circuit position, not a bank or sensor number, and misreading it as a cylinder bank can lead to unnecessary parts replacement.
- Intermittent codes can be caused by vibration or temperature changes affecting a marginal connector, so wiggle tests and freeze-frame data are valuable.
- This code does not always indicate the battery pack needs replacement; the sense circuit itself or the control module may be at fault.
Some vehicles require a battery pack service disconnect and high-voltage safety procedures before any inspection, so never probe the circuit without proper training.

Can I keep driving with P0B7E?

If the warning light is on but the vehicle drives normally, you can continue driving cautiously to a repair shop, but avoid heavy acceleration or long trips. If the vehicle enters limp mode or shows reduced power, stop driving and have it towed to prevent further damage or safety risk.

Tools that help

- OBD-II scan tool with hybrid battery data capability
- Digital multimeter with high-voltage safety rating
- Wiring diagram and service information for the specific vehicle
- Insulation tester or megohmmeter for high-voltage circuit checks
- Battery pack service disconnect tool



Reading P0B7E

- P** Powertrain: engine, transmission and emissions.
- 0** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- B** Hybrid propulsion.
- 7E** The exact fault within that area.

Often seen with

P0A1F Battery Energy Control Module A Performance · **P0AFA** Hybrid/EV Battery System Voltage Low · **P0B7D** Hybrid/EV Battery Voltage Sense N Circuit Range/Performance · **P0B7F** Hybrid/EV Battery Voltage Sense N Circuit High · **P0B80** Hybrid/EV Battery Voltage Sense N Circuit Intermittent/Errat

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/p0b7e/>

