



P0B4B

Hybrid/EV Battery Voltage Sense D Circuit Range/Performance

P0B4B indicates that the hybrid or electric vehicle's battery management system has detected an abnormal voltage reading from the 'D' voltage sense circuit, which monitors a specific group of battery cells. The computer compares this signal against expected values and flags a range or performance fault when the reading falls outside the allowable window or behaves erratically.

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
- Intermittent loss of power or a sudden limp-home mode during acceleration
- The battery state-of-charge gauge behaving erratically or showing incorrect levels
- Often no symptoms besides the warning light, especially in early stages
- Possible failure to start or engage the high-voltage system in severe cases

Common causes, most likely first

- 1 A faulty voltage sense wire or connector at the battery pack, often due to corrosion or vibration damage
- 2 A defective battery cell or module whose voltage is genuinely out of balance with the rest of the pack
- 3 A failed voltage sense circuit inside the battery management system or the cell monitoring unit
- 4 High-resistance connections or loose terminal nuts on the sense harness
- 5 Water intrusion or contamination in the battery pack connector causing signal interference
- 6 A software glitch in the battery control module requiring a recalibration or update
- 7 Rarely, a shorted or open sense line within the battery pack wiring harness



How to diagnose and fix it

- 1 Use a scan tool to retrieve all stored codes and freeze-frame data, then clear the code and test-drive to see if it returns immediately
- 2 Visually inspect the battery pack sense harness and connectors for corrosion, loose pins, or damage, especially at the cell monitoring unit
- 3 Measure the voltage of the affected cell group directly at the sense connector and compare it with the value reported by the scan tool
- 4 Perform a battery pack voltage balance test to check for weak or mismatched cells that could trigger the range fault
- 5 Check for technical service bulletins or software updates for the battery management system that address false voltage sense codes
- 6 If the sense circuit is intact, substitute a known-good cell monitoring unit or battery control module to isolate the fault
- 7 Replace the faulty sense harness, connector, or battery module as needed, then clear codes and verify the repair with a full drive cycle

What the voltage sense code hides

- A loose or corroded sense connector often mimics a failing battery module, so always inspect the harness before condemning expensive high-voltage components.
- The code can be set by a momentary glitch during a low-voltage event, such as a weak 12-volt battery, so check the auxiliary battery first.
- Voltage sense faults on one cell group can be caused by a single weak cell that drags down the entire module's reading, not necessarily the whole pack.
- After any repair involving the high-voltage battery, a battery management system recalibration or relearn procedure is often required to prevent repeat codes.
- This code does not always mean the battery pack is failing; a simple terminal cleaning or harness repair frequently resolves the issue.

Can I keep driving with P0B4B?

You can usually continue driving to a service location, but avoid aggressive acceleration or prolonged high-speed driving that stresses the battery pack. If the vehicle enters limp mode or the warning light flashes, stop safely and have it towed to prevent further damage.



Tools that help

- Hybrid/EV-capable scan tool with live data and battery pack voltage monitoring
- Digital multimeter with high-voltage safety rating
- Insulation tester or megohmmeter for checking high-voltage cable integrity
- Battery pack service plug removal tools and personal protective equipment
- Wiring diagram and connector pinout reference for the specific vehicle

Reading P0B4B

P	Powertrain: engine, transmission and emissions.
0	Generic (SAE) code: it means the same thing on every OBD-II vehicle.
B	Hybrid propulsion.
4B	The exact fault within that area.

Often seen with

P0A09 DC/DC Converter Status Circuit Low Input · **P0AFA** Hybrid/EV Battery System Voltage Low · **P0B4A** Hybrid/EV Battery Voltage Sense D Circuit · **P0B4C** Hybrid/EV Battery Voltage Sense D Circuit Low · **P0B4D** Hybrid/EV Battery Voltage Sense D 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/p0b4b/>

