



P0B3B

Hybrid/EV Battery Voltage Sense A Circuit

P0B3B indicates that the hybrid or electric vehicle battery pack's voltage sensing circuit for 'A' has reported a signal outside the expected range to the battery energy control module. The module compares this sense line against other voltage taps and flags the circuit as faulty when the reading is implausible, open, or shorted.

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 range or the vehicle refusing to enter EV mode
- A sudden drop in state of charge displayed on the dash despite a recent charge
- The internal combustion engine starting more often than usual in a plug-in hybrid
- Often no symptoms besides the warning light, with the vehicle driving normally
- In rare cases, a no-start condition or forced limp mode if the pack voltage reading is grossly wrong

Common causes, most likely first

- 1 A damaged or chafed voltage sense wire between the battery pack and the control module
- 2 Corroded or loose terminal at the sense connector on the battery pack
- 3 A failed voltage sensing harness connector or pin fret within the pack
- 4 An open or shorted cell voltage sensor board inside the battery pack
- 5 A faulty battery energy control module not correctly reading the sense line
- 6 Water intrusion or contamination in the battery pack connector area
- 7 A software calibration issue in the battery management system misinterpreting the sense signal



How to diagnose and fix it

- 1 Retrieve all stored codes and freeze-frame data with a scan tool capable of hybrid battery diagnostics
- 2 Inspect the battery pack sense connector and harness for corrosion, looseness, or chafing
- 3 Measure resistance and voltage on the 'A' sense circuit at the module connector and compare to the service information
- 4 Perform a wiggle test on the harness while watching the sense voltage live data to expose an intermittent fault
- 5 Check for water intrusion or debris at the pack connector and clean or dry as needed
- 6 If the circuit tests good, substitute a known-good sensor board or module only after confirming power and ground integrity
- 7 Clear codes and verify the sense voltage reads correctly across a full charge and discharge cycle

Sense circuit faults that mimic pack failure

- A loose sense connector pin often sets P0B3B without any real cell problem, so technicians who replace the whole pack waste the customer's money.
The code can be stored intermittently by a harness that rubs only over rough roads, so a static resistance check may pass while the fault is still present.
- High-voltage battery sense lines are sensitive to moisture, and a single drop of coolant or condensation in the connector can skew the reading enough to set this code.
- Some vehicles set P0B3B after a low-voltage battery replacement because the module loses its learned sense offsets and needs a relearn drive cycle.
Do not assume the sense board is bad until you have verified the module's reference voltage and ground, since a bad ground can pull the sense line out of range.

Can I keep driving with P0B3B?

The vehicle is usually safe to drive to a workshop because the fault affects monitoring rather than immediate high-voltage safety, but avoid aggressive charging or long trips until the sense circuit is repaired. If the hybrid system warning is accompanied by a loss of power or a no-start, stop driving and have the vehicle towed.

Tools that help

- Hybrid-capable scan tool with live battery cell voltage data
- Digital multimeter with min/max recording
- Insulation resistance tester rated for high-voltage systems
- Terminal pick and contact cleaner
- Service information for battery pack connector pinouts



Reading P0B3B

- P** Powertrain: engine, transmission and emissions.
- 0** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- B** Hybrid propulsion.
- 3B** The exact fault within that area.

Often seen with

P0A1F Battery Energy Control Module A Performance · **P0AFA** Hybrid/EV Battery System Voltage Low · **P0B3A** Motor Electronics Coolant Pump B Control Circuit High · **P0B3C** Hybrid/EV Battery Voltage Sense A Circuit Range/Performance · **P0B3D** Hybrid/EV Battery Voltage Sense A Circuit Low

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/p0b3b/>

