

GENERIC · POWERTRAIN

P0ABB

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0ABB

Hybrid/EV Battery Pack Voltage Sense A Circuit Range/Performance

P0ABB indicates that the hybrid or electric vehicle battery pack voltage sense circuit A is reporting a voltage reading outside the range expected by the battery energy control module. The computer compares the sensed voltage from this circuit against other voltage measurements and detects an abnormal correlation or a signal that is too high or too low for the operating conditions.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Medium

FIX DIFFICULTY

Professional

AREA

Hybrid propulsion

Symptoms you may notice

- Illumination of the hybrid system warning light or service vehicle soon light
- 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
- Reduced power output or limp-home mode in some vehicles
- Often no symptoms besides the warning light, especially if the fault is intermittent

Common causes, most likely first

- 1 Faulty voltage sense wire or connector at the battery pack, including corrosion or loose terminals
- 2 Open or shorted sense circuit inside the battery pack wiring harness
- 3 Failed battery pack voltage sensor or sensing module
- 4 Poor connection or damage to the battery energy control module connector
- 5 Internal fault in the battery energy control module
- 6 High-voltage battery pack degradation causing cell group voltage imbalance
- 7 Water intrusion or contamination in the battery pack connector area



How to diagnose and fix it

- 1 Scan all modules for stored and pending codes, and record freeze-frame data for P0ABB
- 2 Inspect the battery pack voltage sense circuit A wiring and connectors for damage, corrosion, or looseness
- 3 Measure resistance and voltage drop on the sense circuit between the sensor and the control module
- 4 Compare the sensed voltage reading from circuit A with other voltage sense circuits or a known-good reference
- 5 Check service information for the specific vehicle to locate the voltage sense A circuit and perform pinpoint tests
- 6 If wiring and connectors are good, test or replace the battery pack voltage sensor or sensing module
- 7 After repairs, clear codes and verify the voltage reading is within range during a road test

What the voltage sense circuit really checks

- A loose or corroded connector at the battery pack is a far more common cause of this code than a failed sensor, and it often sets intermittently on bumpy roads.
The code can be set by a voltage imbalance in the battery pack itself, so always compare cell group voltages before condemning the sense circuit.
- Some vehicles set P0ABB when the 12-volt auxiliary battery is weak, because low system voltage corrupts the reference signal used by the sense circuit.
- Replacing the battery energy control module without first checking the sense circuit resistance often leads to a repeat failure and unnecessary expense.
The voltage sense A circuit may share a connector with other sense circuits, so a single damaged pin can set multiple voltage sense codes at once.

Can I keep driving with P0ABB?

You can usually drive the vehicle short distances to a repair shop, but avoid heavy acceleration, long trips, and relying on electric-only mode until the fault is repaired. If the vehicle enters limp mode or the battery gauge behaves erratically, stop driving and arrange a tow.

Tools that help

- OBD-II scan tool with hybrid/EV capability
- Digital multimeter with high-voltage safety rating
- Insulated hand tools and personal protective equipment for high-voltage work
- Service information for the specific vehicle
- Terminal pick and contact cleaner



Reading P0ABB

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

Often seen with

P0A04 Motor Electronics Coolant Temperature Sensor Circuit Intermi · **P0AB9** Hybrid/EV System Performance
 · **P0ABA** Hybrid/EV Battery Pack Voltage Sense A Circuit · **P0ABC** Hybrid/EV Battery Pack Voltage Sense A
 Circuit Low · **P0AFA** Hybrid/EV Battery System Voltage 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/p0abb/>

