



P0BB7

Hybrid/EV Battery Voltage Sense Y Circuit Intermittent/Erratic

P0BB7 indicates that the hybrid or electric vehicle battery pack's voltage sensing circuit for channel Y is reporting intermittent or erratic signals to the battery energy control module. The computer detects this when the voltage reading from that specific sense line jumps, drops out, or otherwise fails to behave in a predictable linear fashion compared to the other cell voltage channels.

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

Symptoms you may notice

- Illumination of the check engine light or hybrid system warning light, often with no other noticeable symptoms.
- Intermittent loss of hybrid drive or reduced power output, especially under acceleration or during regenerative braking.
- The battery state-of-charge gauge may fluctuate erratically or show incorrect readings.
- The vehicle may enter a fail-safe mode that limits speed or disables the hybrid system entirely.
- A stored diagnostic trouble code for the voltage sense circuit may be accompanied by other battery cell voltage codes.

Common causes, most likely first

- 1 A loose, corroded, or damaged electrical connector at the voltage sense harness or at the battery pack terminal.
- 2 A chafed, pinched, or broken wire in the voltage sense circuit between the battery module and the control module.
- 3 Internal failure of the voltage sensing circuit board or the battery energy control module itself.
- 4 A failing battery cell or module that causes voltage readings to fluctuate outside normal parameters.
- 5 Poor terminal contact at the battery cell voltage sense bus bar or interconnector.
- 6 Water intrusion or contamination in the voltage sense connector or wiring harness.
- 7 Intermittent short to ground or short to voltage in the sense circuit due to insulation damage.



How to diagnose and fix it

- 1 Inspect the voltage sense connector and wiring at the battery pack for looseness, corrosion, or damage, and clean or repair as needed.
- 2 Perform a wiggle test on the sense harness while monitoring live voltage data for the Y channel to identify intermittent faults.
- 3 Check the resistance of the sense circuit from the battery module to the control module and compare with specifications.
- 4 Verify the battery cell voltage readings with a calibrated multimeter and compare to the scan tool data to rule out a sensing error.
- 5 If wiring and connectors are good, test the battery energy control module for proper operation and update its software if applicable.
- 6 Replace the faulty voltage sense harness or connector if a break or high resistance is found.
- 7 If the control module is confirmed faulty, replace and reprogram it according to the manufacturer's procedure.

Intermittent Voltage Sense Faults Often Misdiagnosed

- A common oversight is replacing the entire battery pack when the actual fault is a simple loose pin in the voltage sense connector, which can be fixed at minimal cost.
- The code can be set by a momentary glitch that does not repeat, so clearing the code and performing a thorough road test with live data monitoring is essential before condemning any parts.
- Voltage sense circuit faults are sometimes caused by a failing 12-volt auxiliary battery that disrupts the hybrid control module's power supply, leading to erratic readings.
- Technicians often miss that the sense wires are routed near high-voltage cables, and electromagnetic interference from a damaged shield can induce erratic signals.
- The Y channel designation may refer to a specific cell group or module, so consult the factory service information for the exact location before probing wires.

Can I keep driving with P0BB7?

It is generally safe to drive with this code if the vehicle is not in a reduced-power mode, but avoid aggressive acceleration or heavy regenerative braking that could stress the battery system. Have the fault diagnosed promptly, as an intermittent sense circuit can lead to a sudden loss of hybrid power or a no-start condition.

Tools that help

- OBD-II scan tool with live data and graphing capabilities
- Digital multimeter with min/max recording
- Factory service information for wiring diagrams and pinouts
- Insulation piercing probes or back-probe kit
- Battery terminal cleaning brush and contact cleaner



Reading P0BB7

- P** Powertrain: engine, transmission and emissions.
- 0** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- B** Hybrid propulsion.
- B7** The exact fault within that area.

Often seen with

P0AFA Hybrid/EV Battery System Voltage Low · **P0AFC** Hybrid/EV Battery Pack Sensor Module · **P0BB6** Hybrid/EV Battery Voltage Sense Y Circuit High · **P0BB8** Hybrid/EV Battery Voltage Sense Z Circuit · **P0BBD** Hybrid/EV Battery Pack Voltage Variation Exceeded Limit

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/p0bb7/>

