

GENERIC · POWERTRAIN

P0B7B

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0B7B

Hybrid/EV Battery Voltage Sense M Circuit Intermittent/Erratic

P0B7B means the hybrid or electric vehicle battery pack controller has detected an intermittent or erratic voltage signal from the voltage sensing circuit labeled 'M' inside the high-voltage battery assembly. The computer expects a steady, plausible voltage reading from that specific sense line, but the signal is dropping out, jumping, or otherwise behaving unpredictably rather than failing completely.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

High

FIX DIFFICULTY

Professional

AREA

Hybrid propulsion

Symptoms you may notice

- Illumination of the hybrid system warning light or check engine light, often with a message to service the high-voltage battery
- The vehicle may enter a reduced-power or limp mode that limits acceleration and top speed
- Intermittent loss of hybrid functions such as engine auto-stop, regenerative braking, or electric-only propulsion
- A sudden drop in state-of-charge display or erratic battery gauge behavior
- Often no symptoms besides the warning light, especially if the intermittent fault is brief and the controller can still estimate pack voltage
- In some cases the vehicle may refuse to start or shift out of park after the fault sets

Common causes, most likely first

- 1 A loose, corroded, or backed-out terminal in the voltage sense circuit M connector at the battery module or controller
- 2 Chafed, pinched, or intermittently shorting wiring in the sense harness routed through the high-voltage battery pack
- 3 A failing voltage sense circuit board or sensing module internal to the high-voltage battery assembly
- 4 A defective battery pack controller that misinterprets a valid sense signal
- 5 High-voltage battery module degradation or an internal cell issue causing unstable voltage readings on that sense line
- 6 Water intrusion or contamination in the battery pack connector causing intermittent signal loss
- 7 Poor ground connection for the battery voltage sensing circuit



How to diagnose and fix it

- 1 Scan all modules and record freeze-frame data for P0B7B, then clear the code and test-drive to confirm whether it returns as intermittent or becomes a hard fault
- 2 Inspect the voltage sense circuit M connector and terminals at the battery pack for looseness, corrosion, or pin tension loss, and repair as needed
- 3 Perform a wiggle test on the sense harness while monitoring live voltage sense M data to expose an intermittent wiring fault
- 4 Check the sense circuit for continuity and short-to-ground or short-to-voltage faults with a multimeter, following the manufacturer's high-voltage disconnect procedure
- 5 If wiring and connectors are good, substitute a known-good battery pack controller or sensing module only after confirming the sense signal is erratic at the source
- 6 Measure individual module voltages and compare them to the sense M reading to determine whether the battery module itself is unstable
- 7 After repair, clear codes and verify the voltage sense M signal remains stable through a complete drive cycle and a key-off sleep period

Intermittent sense faults hide in connectors

- A voltage sense circuit M intermittent code is frequently caused by a connector terminal that loses tension only when the battery pack expands and contracts with temperature changes, so a static inspection often misses it.
- Technicians sometimes replace the entire high-voltage battery pack when the real fault is a chafed sense wire inside the pack harness, which is a far cheaper repair once the harness is accessed.
- The code does not always mean the battery is failing; a stable pack with a bad sense circuit can set P0B7B repeatedly while all module voltages test normal.
- Because the sense signal is intermittent, the fault may only appear during rough road driving, hard acceleration, or temperature swings, so a simple idle scan may show no problem.
- A weak 12-volt auxiliary battery or poor chassis ground can cause erratic behavior in the battery controller and mimic a sense circuit fault, so always verify supply voltage and grounds first.

Can I keep driving with P0B7B?

Do not continue driving normally with an active P0B7B because an erratic voltage sense signal can cause the battery controller to misjudge pack condition and unexpectedly disable hybrid operation or strand the vehicle. Have the fault diagnosed promptly, and avoid heavy acceleration or long trips until the intermittent circuit is repaired.



Tools that help

- OBD-II scan tool with hybrid battery live data and freeze-frame capability
- Digital multimeter with min/max recording
- Manufacturer service information for high-voltage disconnect and sense circuit pinouts
- Insulation tester for high-voltage wiring
- Terminal tension gauge and connector repair kit

Reading P0B7B

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

Often seen with

P0A1F Battery Energy Control Module A Performance · **P0AFA** Hybrid/EV Battery System Voltage Low · **P0B7A** Hybrid/EV Battery Voltage Sense M Circuit High · **P0B7C** Hybrid/EV Battery Voltage Sense N Circuit · **P0B7D** Hybrid/EV Battery Voltage Sense N Circuit Range/Performance

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/p0b7b/>

