

GENERIC · POWERTRAIN

P0B5D

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0B5D

Hybrid/EV Battery Voltage Sense G Circuit Intermittent/Erratic

P0B5D means the hybrid or electric vehicle battery pack monitoring system has detected an intermittent or erratic voltage signal on the 'G' voltage sense circuit, which is one of several dedicated wires that report individual cell group voltages to the battery energy control module. The computer is not seeing a clean, stable voltage reading from that sense line, so it flags the circuit as unreliable rather than reporting a specific over-voltage or under-voltage condition.

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

Symptoms you may notice

- Often no symptoms besides the warning light, especially if the erratic signal is brief and the module can substitute a calculated value.
- A hybrid or EV system warning message on the dashboard, sometimes accompanied by a reduced power or limited performance message.
- Intermittent loss of hybrid drive or electric-only operation, with the vehicle falling back to the combustion engine or a limp mode.
- Failure of the high-voltage battery to accept or deliver charge normally, leading to poor fuel economy or reduced electric range.
- A stored history of multiple battery cell voltage codes or a battery pack imbalance warning set alongside P0B5D.
- In rare cases, the vehicle may refuse to start or engage drive because the battery management system cannot confirm safe pack voltage.



Common causes, most likely first

- 1 A loose, corroded, or backed-out terminal in the voltage sense connector at the battery pack or at the battery energy control module.
- 2 Chafed, pinched, or broken wiring in the voltage sense harness, often where it routes past sharp edges or through a grommet.
- 3 An intermittent internal fault in the battery energy control module's voltage sensing circuit, such as a failing solder joint or damaged input channel.
- 4 A faulty cell group or busbar connection inside the high-voltage battery pack that causes the sense line to see an unstable reference.
- 5 Water intrusion or contamination in a sense circuit connector, leading to variable resistance and an erratic signal.
- 6 A poor chassis or pack ground connection that introduces electrical noise into the voltage sensing reference.
- 7 Aftermarket accessories or improper prior repairs that disturbed the high-voltage battery harness or added electrical noise to the sense circuit.

How to diagnose and fix it

- 1 Scan all modules and record freeze-frame data for P0B5D and any companion battery cell voltage codes before clearing anything.
- 2 Inspect the voltage sense connector at the battery pack and at the battery energy control module for corrosion, loose pins, or pushed-out terminals.
- 3 Perform a wiggle test on the sense harness while watching live voltage sense data to reproduce the intermittent signal.
- 4 Check the sense circuit wiring for continuity, chafing, and short-to-ground or short-to-power faults with a multimeter, following the manufacturer's pinout.
- 5 Verify the battery pack ground and module ground connections are clean and tight, and measure voltage drop under load where accessible.
- 6 If the wiring and connectors pass, substitute or bench-test the battery energy control module only after confirming the sense line is clean at the module pins.
- 7 Clear codes and road-test the vehicle through several drive cycles to confirm the intermittent signal is gone before returning it to the customer.



Why the G sense circuit misleads

- A voltage sense circuit can test perfectly with a multimeter at rest and still set P0B5D, because the intermittent fault often appears only under vibration or temperature change during real driving.
- Technicians frequently replace the battery energy control module when the actual fault is a single chafed wire in the sense harness, so always prove the wiring before condemning the module.
- P0B5D does not mean the battery pack itself is failing; it means the reporting circuit for one sense channel is unreliable, and the pack may be perfectly healthy.
- A weak or corroded pack ground can create an erratic voltage reference that mimics a sense circuit fault on multiple channels, so check grounds before chasing individual wires.
- Some vehicles set this code after a low-voltage event or battery replacement because the module lost its learned sense offsets, and a relearn or adaptation reset resolves it without any parts.

Can I keep driving with P0B5D?

You can usually drive the vehicle short distances to a repair shop, but avoid heavy acceleration, long trips, and relying on electric-only mode because the battery management system may not have accurate cell voltage data. If the vehicle enters a limp mode or refuses to engage drive, stop and have it towed rather than forcing it.

Tools that help

- OBD-II scan tool with hybrid/EV battery data and freeze-frame capability
- Digital multimeter with min/max recording
- Back probe kit and terminal pick tools
- Manufacturer service information with high-voltage battery pinouts and safety procedures
- Insulated gloves and high-voltage safety equipment

Reading P0B5D

P	Powertrain: engine, transmission and emissions.
0	Generic (SAE) code: it means the same thing on every OBD-II vehicle.
B	Hybrid propulsion.
5D	The exact fault within that area.

Often seen with

P0AFA Hybrid/EV Battery System Voltage Low · **P0AFF** System Voltage Too Low for Voltage Step Down Conversion · **P0B5B** Hybrid/EV Battery Voltage Sense G Circuit Low · **P0B5C** Hybrid/EV Battery Voltage Sense G Circuit High · **P0B5E** Hybrid/EV Battery Voltage Sense H Circuit



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/p0b5d/>

