



P0B5B

Hybrid/EV Battery Voltage Sense G Circuit Low

P0B5B indicates that the hybrid or electric vehicle battery pack's voltage sensing circuit for the 'G' cell group is reporting a voltage that is lower than the battery management system expects, or the circuit is electrically out of range. The computer compares the sensed voltage against the calculated or neighboring cell voltages and sets this code when the signal on the G circuit falls below the calibrated threshold for a set time.

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 noticeable drop in available power or limp-home mode
- The battery gauge showing erratic or unusually low state of charge
- Often no symptoms besides the warning light, especially if the fault is intermittent

Common causes, most likely first

- 1 A faulty voltage sensing wire or connector at the G cell group, often due to corrosion or a loose terminal
- 2 A failed cell voltage sensor module or sensing harness internal to the battery pack
- 3 A weak or failing battery cell within the G group causing a genuine low voltage reading
- 4 Damage to the sensing circuit from rodent chewing, chafing, or moisture intrusion
- 5 A poor ground connection for the battery management system or sensor module
- 6 A software glitch or outdated calibration in the battery management controller



How to diagnose and fix it

- 1 Use a scan tool to read the live cell voltage data for the G group and compare it with neighboring groups to confirm a real low reading versus a sensor error
- 2 Inspect the sensing harness and connector at the G cell group for corrosion, looseness, or physical damage, and clean or repair as needed
- 3 Perform a voltage drop test on the sensing circuit wiring from the sensor to the battery management controller to rule out high resistance
- 4 Check and clean the battery management system ground connections to ensure a solid reference voltage
- 5 Swap the G group voltage sensor with a known-good sensor from another group, if accessible, to see if the fault follows the sensor
- 6 If the sensor and wiring test good, perform a battery pack capacity or cell balance test to identify a failing cell within the G group
- 7 Reprogram or update the battery management controller software if a known calibration issue exists for this fault

What the voltage sense code hides

- A loose or corroded connector pin at the G cell group is a far more common cause than a failed battery pack, so always inspect the harness before condemning cells.
- The code can set intermittently from vibration or temperature changes, so a wiggle test of the sensing harness while watching live data often reveals the fault.
- A genuine low cell voltage in the G group may be caused by a single weak cell that is not yet bad enough to trigger a pack replacement, and cell balancing may restore normal operation.
- The battery management system may set this code as a reaction to a communication fault or a low 12-volt supply, so check for other codes and the auxiliary battery condition first.
- Do not assume the G circuit corresponds to a physical location without a wiring diagram; the letter designation is assigned by the manufacturer and may not follow a simple left-to-right order.

Can I keep driving with P0B5B?

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 drops rapidly, stop driving and have it towed to prevent further pack damage.

Tools that help

- Hybrid/EV-capable scan tool with live cell voltage data
- Digital multimeter with min/max recording
- Wiring diagram and connector pinout for the battery pack
- Insulation resistance tester
- Battery pack lifting equipment or access tools



Reading P0B5B

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

Often seen with

P0A09 DC/DC Converter Status Circuit Low Input · **P0AFA** Hybrid/EV Battery System Voltage Low · **P0B5A** Hybrid/EV Battery Voltage Sense G Circuit Range/Performance · **P0B5C** Hybrid/EV Battery Voltage Sense G Circuit High · **P0B5D** Hybrid/EV Battery Voltage Sense G Circuit Intermittent/Errat

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/p0b5b/>

