

GENERIC · POWERTRAIN

P0B4D

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0B4D

Hybrid/EV Battery Voltage Sense D Circuit High

P0B4D indicates that the hybrid or electric vehicle battery pack's voltage sensing circuit D is reporting a voltage higher than the range expected by the battery energy control module. The computer compares the signal from this specific sense line against other cell voltage inputs and sets the code when the reading exceeds a 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

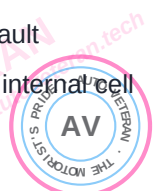
- Illumination of the hybrid system warning light or service vehicle soon message
- Often no symptoms besides the warning light, with the vehicle continuing to drive normally
- Reduced electric-only range or the engine starting more frequently than usual
- A sudden drop in state of charge or the battery gauge behaving erratically
- Entry into limp mode or refusal to start in some cases if the fault escalates

Common causes, most likely first

- 1 A faulty voltage sense wire or connector at the battery pack, often due to corrosion or pin tension loss
- 2 An open or high-resistance connection in the sense circuit D harness, including chafed wiring
- 3 A failing cell voltage sensor module or battery monitoring unit that serves circuit D
- 4 Internal battery pack fault such as a weak or imbalanced cell affecting the sensed voltage
- 5 Water intrusion or contamination at the battery pack connectors causing signal distortion
- 6 A software or calibration issue in the battery energy control module requiring reprogramming

How to diagnose and fix it

- 1 Retrieve all stored codes and freeze-frame data, then clear the code and test-drive to see if it returns immediately
- 2 Inspect the battery pack sense circuit D wiring and connectors for corrosion, looseness, or damage
- 3 Measure resistance and voltage drop on the sense circuit D from the sensor to the control module
- 4 Compare live voltage readings from circuit D against neighbouring sense circuits to identify an outlier
- 5 Check for technical service bulletins or software updates for the battery energy control module
- 6 Replace the faulty cell voltage sensor or repair the harness section if diagnostics confirm a circuit fault
- 7 If the fault persists after circuit repairs, perform a battery pack capacity and balance test to rule out internal cell failure



Sense circuit D faults that fool technicians

- A high voltage reading on one sense circuit often comes from a poor ground reference shared with other sensors, not from the cell itself, so check ground integrity before condemning the battery pack.
- The code can be set by a momentary glitch during high-load events, and a single occurrence with no repeat after clearing may not require any repair.
- Technicians sometimes replace the entire battery pack when only the voltage sense harness connector is corroded, so always perform a pin drag and voltage drop test first.
- After any battery pack service, the battery energy control module may need a relearn or calibration procedure, and skipping it can cause the same code to reset.
- A weak 12-volt auxiliary battery can cause erratic behaviour in the hybrid control modules and set false sense circuit codes, so load-test the 12-volt system early.

Can I keep driving with P0B4D?

The vehicle is usually safe to drive to a workshop because the fault often does not affect immediate operation, but avoid aggressive acceleration or prolonged high-speed driving until it is diagnosed. If the hybrid system warning light flashes or the vehicle enters limp mode, stop driving and arrange a tow.

Tools that help

- OBD-II scan tool with hybrid battery data capability
- Digital multimeter with min/max recording
- Wiring diagram and connector pinout for the battery pack
- Insulation tester for high-voltage circuit integrity
- Battery pack service plug removal tools and personal protective equipment

Reading P0B4D

P	Powertrain: engine, transmission and emissions.
0	Generic (SAE) code: it means the same thing on every OBD-II vehicle.
B	Hybrid propulsion.
4D	The exact fault within that area.

Often seen with

P0A9C Hybrid/EV Battery Temperature Sensor A Circuit Range/Perform · **P0AFA** Hybrid/EV Battery System Voltage Low · **P0B4B** Hybrid/EV Battery Voltage Sense D Circuit Range/Performance · **P0B4C** Hybrid/EV Battery Voltage Sense D Circuit Low · **P0B4E** Hybrid/EV Battery Voltage Sense D 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/p0b4d/>

