



P0B21

Hybrid/EV Battery Pack Voltage Sense D Circuit High

P0B21 indicates that the hybrid or electric vehicle battery pack voltage sensing circuit D is reporting a voltage higher than the control module expects for the actual pack condition. The computer compares this sense circuit's signal against other voltage sense circuits and flags the fault when the reading is out of range, which can be caused by a wiring fault, a failed sense lead, or an internal battery pack issue.

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 driving range or the vehicle refusing to enter EV mode
- A sudden drop in fuel economy as the engine runs more often to compensate
- Intermittent warning light that may clear after the vehicle sits or the battery temperature changes
- Often no symptoms besides the warning light, especially if the voltage error is small

Common causes, most likely first

- 1 Damaged or chafed voltage sense wire between the battery pack and the control module
- 2 Corroded or loose connector terminal at the sense circuit D harness or battery pack interface
- 3 Failed voltage sense circuit inside the battery pack, such as an open or high-resistance sense lead
- 4 Internal fault in the hybrid/EV battery control module or voltage monitoring circuit
- 5 A weak or failing battery module that causes the sense circuit to read out of balance
- 6 Water intrusion or contamination in the battery pack connector or wiring harness
- 7 Aftermarket accessories or improper previous repairs that disturbed the sense circuit wiring



How to diagnose and fix it

- 1 Use a scan tool to read the live voltage sense data for all battery modules and compare circuit D against the others to confirm the fault is real and not a stored glitch
- 2 Inspect the sense circuit D wiring and connectors for chafing, corrosion, loose pins, or water intrusion, repairing or replacing damaged sections as needed
- 3 Perform a voltage drop test on the sense circuit D wiring from the battery pack connector to the control module to check for excessive resistance
- 4 Check the battery pack module voltages directly at the pack terminals with a multimeter and compare them to the scan tool readings to isolate a sensor versus a module problem
- 5 If wiring and connectors are good, follow the manufacturer's diagnostic flow for the hybrid battery control module, which may include a software update or module replacement
- 6 Clear the code and perform a road test or hybrid battery relearn procedure, then verify the code does not return

Sense circuit faults that mimic battery failure

- A loose or corroded sense connector often sets P0B21 without any real battery degradation, so technicians who replace the pack prematurely miss a simple terminal repair.
- The code can be stored intermittently by a momentary voltage spike during high-current charging or regenerative braking, and it may not return after clearing if the connector is reseated.
- Some vehicles set this code when the 12-volt auxiliary battery is weak because the hybrid control module misreads reference voltages during low-voltage conditions.
- A failed cell balancing circuit inside the pack can cause one sense circuit to read high while the overall pack voltage looks normal on a basic scan tool.
- Aftermarket hybrid battery reconditioning or module swapping often disturbs the sense wiring, leading to P0B21 shortly after the repair.

Can I keep driving with P0B21?

You can usually drive the vehicle short distances to a repair shop, but avoid heavy acceleration, prolonged highway driving, and relying on electric-only mode until the fault is diagnosed. If the warning light flashes or the vehicle enters limp mode, stop driving and have it towed.

Tools that help

- Hybrid/EV-capable scan tool with live battery module voltage data
- Digital multimeter with min/max recording
- Insulation resistance tester
- Terminal pick and connector release tools
- Service information for the specific hybrid battery system



Reading P0B21

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

Often seen with

P0A1F Battery Energy Control Module A Performance · **P0AFA** Hybrid/EV Battery System Voltage Low · **P0B20** Hybrid/EV Battery Pack Voltage Sense D Circuit Low · **P0B22** Hybrid/EV Battery Pack Voltage Sense D Circuit Intermittent/ · **P0B24** Hybrid/EV Battery A Voltage Unstable

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/p0b21/>

