

GENERIC · POWERTRAIN

P0B2B

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0B2B

Hybrid/EV Battery C Voltage

P0B2B indicates that the hybrid or electric vehicle battery control module has detected an abnormal voltage reading for battery module or cell group C, which is one specific section of the high-voltage traction battery pack. The computer compares this section's voltage against expected values and the other sections, and it sets the code when the reading falls outside the acceptable range or becomes inconsistent with the rest of the pack.

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 on the dashboard
- Often no symptoms besides the warning light, especially if the voltage deviation is small
- Reduced electric-only driving range or the engine starting more frequently than usual
- A noticeable drop in available power or a transition into limp-home mode under load
- The high-voltage battery state-of-charge gauge behaving erratically or refusing to charge fully
- In some cases the vehicle may refuse to start or enter a reduced-power mode after the code is stored

Common causes, most likely first

- 1 A weak or failing cell group within battery module C, causing its voltage to sag under load or drift from the rest of the pack
- 2 A faulty cell voltage sensing wire or connector at module C, producing an inaccurate reading to the battery control module
- 3 Corrosion or looseness at the module C interconnects or terminal posts, adding resistance that skews voltage measurement
- 4 A malfunctioning battery control module or voltage sensing circuit that misreports the section voltage
- 5 An imbalance in state of charge across the pack that the battery management system has not been able to correct through balancing
- 6 Extreme temperature effects on module C that temporarily push its voltage outside the expected window
- 7 A previous repair or replacement of a module that was not properly matched or learned by the battery management system



How to diagnose and fix it

- 1 Retrieve all stored codes and freeze-frame data with a scan tool capable of reading hybrid battery module voltages, then record the reported voltage for module C and compare it with the other modules
- 2 Perform a visual inspection of the module C area for loose connectors, chafed sensing wires, corrosion, or signs of overheating, following all high-voltage safety procedures
- 3 Check the cell voltage sensing harness and connector pins at module C for continuity and resistance, and verify that the battery control module is receiving a stable signal
- 4 Run the manufacturer's battery pack balancing or state-of-charge calibration procedure if the scan tool supports it, then clear the code and retest
- 5 Load-test the high-voltage battery pack according to the service information to confirm whether module C actually drops out under demand or whether the fault is in the sensing circuit
- 6 If module C is confirmed weak, replace or repair the affected module or cell group as required by the manufacturer's procedures, then perform the necessary battery management system learn or calibration routine
- 7 After repairs, clear all codes, road-test the vehicle through several charge and discharge cycles, and verify that module C voltage tracks the other modules within specification

What a module C voltage code really tells you

- A P0B2B is often set by a sensing circuit problem rather than a genuinely failed cell, so technicians who replace the battery module before checking the voltage sense wiring frequently misdiagnose this code.
- The battery control module compares module C against the other modules, so a fault in a different module's sensing circuit can sometimes cause module C to appear out of range by comparison.
- Temperature differences across the pack can create temporary voltage spreads that trigger this code without any permanent cell failure, especially after the vehicle has been parked in extreme heat or cold.
- This code can appear after a low-voltage battery replacement or a jump-start if the battery management system loses its learned state-of-charge reference and has not yet completed a full calibration cycle.
- A pack that has been sitting unused for an extended period may develop a voltage imbalance that sets P0B2B until the vehicle is driven and the balancing function has had time to work.

Can I keep driving with P0B2B?

You can usually drive the vehicle short distances to a repair facility, but avoid heavy acceleration, sustained high-speed driving, and long trips until the fault is diagnosed, because a weak module can worsen under load. If the vehicle enters limp-home mode or the high-voltage warning turns red, stop driving and have it towed.



Tools that help

- Hybrid/EV-capable scan tool with battery module voltage display
- Digital multimeter with high-voltage rated probes
- Insulation tester or megohmmeter for high-voltage circuit checks
- Manufacturer service information for high-voltage safety and battery module access procedures
- Personal protective equipment including high-voltage gloves and eye protection

Reading P0B2B

P	Powertrain: engine, transmission and emissions.
0	Generic (SAE) code: it means the same thing on every OBD-II vehicle.
B	Hybrid propulsion.
2B	The exact fault within that area.

Often seen with

P0A7F Hybrid/EV Battery Pack Deterioration · **P0AFA** Hybrid/EV Battery System Voltage Low · **P0B2A** Hybrid/EV Battery B Voltage High · **P0B2C** Hybrid/EV Battery C Voltage Unstable · **P0B2D** Hybrid/EV Battery C Voltage Low

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/p0b2b/>

