

GENERIC · POWERTRAIN

P0B42

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0B42

Hybrid/EV Battery Voltage Sense B Circuit Low

P0B42 indicates that the hybrid or electric vehicle battery pack's voltage sensing circuit for 'B' is reporting a voltage lower than the manufacturer's expected range, which the battery energy control module uses to monitor individual cell groups. The computer detects this when the signal wire from the sense circuit falls below a calibrated threshold, often due to a wiring fault, a poor connection, or a failing sense module.

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 check engine light, often with no other noticeable symptoms.
- Reduced electric-only range or the vehicle refusing to enter EV mode.
- Intermittent loss of power or a sudden transition to limp-home mode.
- A message on the dash indicating a hybrid battery fault or service required.
- In some cases, the vehicle may fail to start or run solely on the electric motor.

Common causes, most likely first

- 1 A damaged or corroded voltage sense wire between the battery pack and the control module.
- 2 A loose or faulty connector at the battery voltage sense harness.
- 3 A failed voltage sense module or circuit board within the battery pack.
- 4 High resistance in the sense circuit due to water intrusion or debris.
- 5 A malfunctioning battery energy control module (BECM) misreading the signal.
- 6 A weak or failing cell group that causes the sense circuit to read low under load.

How to diagnose and fix it

- 1 Inspect the voltage sense harness and connectors for damage, corrosion, or loose pins, and repair as needed.
- 2 Measure resistance and voltage on the sense circuit B to verify continuity and compare with manufacturer specifications.
- 3 Check for water intrusion or debris in the battery pack area that could affect the sense circuit.
- 4 Test the voltage sense module or circuit board for proper output and replace if faulty.
- 5 Verify the battery energy control module (BECM) operation and update software if applicable.
- 6 Perform a battery pack load test and cell balance check to rule out a failing cell group.
- 7 Clear the code and road test to confirm the repair, monitoring live data for the sense circuit.



Sense Circuit B Low: Don't Jump to Battery Replacement

- A low voltage reading on sense circuit B often results from a simple wiring issue rather than a failed battery pack, so always inspect the harness first.
- The code can be set intermittently by a loose connector that only loses contact during vibration or temperature changes, making it hard to reproduce.
- Some technicians replace the entire battery pack when only the sense module or a single wire is at fault, leading to unnecessary expense.
- A weak cell group can cause the sense circuit to read low under load even when the circuit itself is healthy, so cell balance testing is essential.
- The BECM may store this code alongside other sense circuit codes, but P0B42 specifically points to circuit B, so focus diagnostics there.

Can I keep driving with P0B42?

It is generally safe to drive with this code if the vehicle is operating normally, but avoid heavy acceleration or long trips until diagnosed, as a failing sense circuit can lead to reduced power or a sudden limp-home mode. If the hybrid system warning light is flashing or the vehicle enters limp mode, stop driving and seek professional service.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Wiring diagram for the specific vehicle
- Insulation resistance tester
- Battery pack load tester

Reading P0B42

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

Often seen with

P0A7F Hybrid/EV Battery Pack Deterioration · **P0AFA** Hybrid/EV Battery System Voltage Low · **P0B41** Hybrid/EV Battery Voltage Sense B Circuit Range/Performance · **P0B43** Hybrid/EV Battery Voltage Sense B Circuit High · **P0B44** Hybrid/EV Battery Voltage Sense B 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/p0b42/>

