

GENERIC · POWERTRAIN

P0B49

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0B49

Hybrid/EV Battery Voltage Sense C Circuit Intermittent/Erratic

P0B49 indicates that the hybrid or electric vehicle battery pack's voltage sensing circuit C is reporting an intermittent or erratic signal to the battery energy control module. The computer detects this when the voltage readings from that specific sense circuit jump, drop out, or otherwise fail to match the expected values for the battery pack's state of charge.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Medium

FIX DIFFICULTY

Professional

AREA

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
- Inconsistent state-of-charge readings on the dashboard gauge
- Sudden loss of power or limp-home mode under acceleration
- Often no symptoms besides the warning light, especially in early stages
- Battery cooling fan running excessively or charging system behaving erratically

Common causes, most likely first

- 1 Loose, corroded, or damaged voltage sense wire or connector at the battery module
- 2 Faulty voltage sense circuit C harness, including chafed or pinched wiring
- 3 Internal failure of the battery energy control module's voltage sensing circuitry
- 4 Poor terminal contact at the battery pack's voltage sense connector
- 5 Water intrusion or contamination in the sense circuit connector
- 6 Failing battery module that produces unstable voltage under load
- 7 Software glitch or calibration error in the battery monitoring system



How to diagnose and fix it

- 1 Inspect and clean the voltage sense circuit C connector and terminals at the battery pack
- 2 Perform a wiggle test on the sense circuit harness while monitoring live voltage data to identify intermittent opens
- 3 Check for continuity and resistance on the sense circuit C wiring between the battery module and the control module
- 4 Compare voltage readings from all sense circuits to isolate whether circuit C alone is erratic
- 5 Verify battery energy control module software is up to date and reflash if a known calibration issue exists
- 6 Replace the faulty voltage sense harness or connector if damage is found
- 7 Replace the battery energy control module only after all wiring and connector issues are ruled out

Sense circuit faults that mimic module failure

- A loose ground connection at the battery pack can cause erratic voltage readings on multiple sense circuits, so always check grounds before condemning the control module.
The code can be set by a momentary glitch during battery pack assembly or service, so clearing it and test-driving may confirm whether the fault is real or history.
- Voltage sense circuit C often shares a connector with other sense circuits, so a single bent pin can affect several readings and set companion codes.
- High-voltage battery sense circuits are extremely sensitive to resistance changes, so even a slightly loose terminal can produce intermittent erratic signals without visible damage.
Some vehicles set this code when the 12-volt auxiliary battery is weak, causing the control module to log false erratic signals during cranking.

Can I keep driving with P0B49?

You can usually continue driving to a service location if the vehicle is not in limp mode, but avoid aggressive acceleration or heavy electrical loads until the fault is repaired. If the hybrid system warning light flashes or power is reduced, stop safely and have the vehicle towed to prevent further battery damage.

Tools that help

- OBD-II scan tool with hybrid battery live data capability
- Digital multimeter with min/max recording
- Insulation resistance tester
- Terminal pick and contact cleaner
- Vehicle-specific service information for high-voltage safety procedures



Reading P0B49

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

Often seen with

P0AFA Hybrid/EV Battery System Voltage Low · **P0AFC** Hybrid/EV Battery Pack Sensor Module · **P0B48** Hybrid/EV Battery Voltage Sense C Circuit High · **P0B4A** Hybrid/EV Battery Voltage Sense D Circuit · **P0B4B** Hybrid/EV Battery Voltage Sense D Circuit Range/Performance

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/p0b49/>

