

GENERIC · POWERTRAIN

P0E4B

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0E4B

Hybrid/EV Battery Pack Voltage Sense F Circuit Low

P0E4B indicates that the hybrid or electric vehicle battery pack voltage sensing circuit F is reporting a voltage below the expected threshold, which the battery energy control module interprets as a low-voltage fault. The computer has detected that the signal from this specific sense circuit is lower than what the actual pack voltage should produce, often due to a wiring issue, a faulty sensor, or a problem within the battery pack itself.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

High

FIX DIFFICULTY

Professional

AREA

Hybrid propulsion

Symptoms you may notice

- Illumination of the hybrid system warning light or check engine light
- Reduced power output or limp mode to protect the high-voltage battery
- Inability to start the vehicle or engage the hybrid system
- Erratic state-of-charge readings or sudden drops in indicated battery level
- Often no symptoms besides the warning light, especially if the fault is intermittent

Common causes, most likely first

- 1 Damaged or corroded wiring or connector at the voltage sense circuit F
- 2 Faulty voltage sensing harness or sense wire within the battery pack
- 3 Failed battery pack voltage sensor or sensing module
- 4 Internal battery pack fault, such as a weak cell or module affecting voltage sensing
- 5 Loose or improper connection at the battery energy control module
- 6 Water intrusion or contamination in the battery pack connector
- 7 Software glitch or calibration error in the battery energy control module



How to diagnose and fix it

- 1 Perform a visual inspection of the voltage sense circuit F wiring and connectors for damage, corrosion, or looseness
- 2 Check for technical service bulletins (TSBs) or software updates for the battery energy control module that address voltage sensing faults
- 3 Measure the voltage at the sense circuit F terminal and compare it with the actual battery pack voltage to verify the discrepancy
- 4 Perform a continuity and resistance test on the sense circuit F wiring to rule out open or short circuits
- 5 If wiring and connectors are good, test the voltage sensor or sensing module according to manufacturer procedures
- 6 Replace the faulty voltage sensor or sensing harness if testing indicates it is defective
- 7 If the fault persists, diagnose the battery pack for internal issues, which may require professional high-voltage battery service

Voltage sense circuit F: often a wiring issue

- A common oversight is assuming the battery pack itself is failing when the fault is simply a chafed or corroded sense wire, so always inspect the harness thoroughly before condemning the pack.
- Intermittent P0E4B codes can be caused by a loose connector that only loses contact during vibration or temperature changes, making a wiggle test essential during diagnosis.
- The code does not always mean the battery pack needs replacement; many cases are resolved by repairing the sense circuit or replacing a relatively inexpensive sensor.
- Some vehicles may set this code along with other voltage sense codes if the battery energy control module has a shared reference voltage issue, so check for multiple codes before replacing parts.
- A weak 12-volt auxiliary battery can cause erratic behavior in hybrid control modules and may lead to false voltage sense codes, so always verify the 12-volt system first.

Can I keep driving with P0E4B?

Do not continue driving with this code active, as it can lead to reduced power, stalling, or further damage to the high-voltage battery system. Safely pull over and have the vehicle inspected by a qualified hybrid technician before driving again.

Tools that help

- OBD-II scan tool with hybrid/EV capability
- Digital multimeter (DMM) with high-voltage safety rating
- Insulation tester or megohmmeter for high-voltage circuits
- Manufacturer service information and wiring diagrams
- High-voltage safety gloves and insulated tools



Reading P0E4B

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

Often seen with

P0A1F Battery Energy Control Module A Performance · **P0AFA** Hybrid/EV Battery System Voltage Low · **P0BBD** Hybrid/EV Battery Pack Voltage Variation Exceeded Limit · **P0E4A** Hybrid/EV Battery Pack Voltage Sense F Circuit Range/Perform · **P0E4C** Hybrid/EV Battery Pack Voltage Sense F Circuit High

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/p0e4b/>

