

GENERIC · POWERTRAIN

P0BB6

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0BB6

Hybrid/EV Battery Voltage Sense Y Circuit High

P0BB6 indicates that the hybrid or electric vehicle battery pack's voltage sensing circuit, specifically the 'Y' channel, is reporting a voltage higher than the manufacturer's expected range to the battery energy control module. The computer detects this when the signal voltage on the sense line exceeds a calibrated threshold, often due to a wiring fault, a failed sense connection, or an internal issue in the battery 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 check engine light, often with no other noticeable symptoms.
- Reduced power output or a 'limp home' mode as the battery management system limits current to protect the pack.
- Inability to start the vehicle or engage the hybrid system, especially in models where the battery pack is essential for startup.
- Inaccurate state-of-charge or range estimates displayed on the dashboard.
- In rare cases, a burning smell or visible damage near the battery pack if the high-voltage sense circuit has been compromised.

Common causes, most likely first

- 1 A damaged or corroded voltage sense wire (the 'Y' circuit) between the battery pack and the control module, causing an open circuit or high resistance.
- 2 A loose or faulty connector at the battery pack sense harness, leading to intermittent high voltage readings.
- 3 A failed voltage sense module or battery monitoring unit internal to the high-voltage battery pack.
- 4 A short to voltage on the sense line, often from chafed wiring rubbing against a metal component.
- 5 A malfunctioning battery energy control module (BECM) that misinterprets the sense signal.
- 6 A defective cell or module within the battery pack that causes an abnormal voltage offset, though this is less common for a 'high' sense code.



How to diagnose and fix it

- 1 Inspect the voltage sense harness and connectors at the battery pack for corrosion, looseness, or physical damage; clean and reseat as needed.
- 2 Measure the sense circuit voltage with a multimeter and compare it to the manufacturer's specification to confirm an abnormal high reading.
- 3 Perform a continuity and resistance test on the 'Y' sense wire from the battery pack to the control module to check for opens or shorts.
- 4 Check for technical service bulletins (TSBs) or software updates for the battery control module that may address false high-voltage sense readings.
- 5 If wiring and connectors are good, test the battery pack's voltage sense module or the BECM according to the service manual, and replace if faulty.
- 6 Clear the diagnostic trouble codes (DTCs) and perform a road test to verify the repair, ensuring the code does not return.

Sense Circuit Faults Often Misdiagnosed

- A high voltage sense code is frequently caused by a poor connection at the battery pack rather than a failed battery module, so always check connectors before condemning expensive components.
- The 'Y' circuit may be part of a shared harness with other sense lines, and a single chafed wire can set multiple related codes, so inspect the entire harness routing.
- Some vehicles require a battery pack service plug disconnect before testing sense circuits, and skipping this step can lead to personal injury or further damage.
- A weak 12-volt auxiliary battery can cause erratic behavior in hybrid control modules, leading to false sense codes, so verify the 12-volt system first.
- After repairing the circuit, some manufacturers require a battery pack relearn or calibration procedure, otherwise the code may reset immediately.

Can I keep driving with P0BB6?

It is generally not safe to continue driving with this code because the hybrid system may enter a reduced-power mode or shut down unexpectedly, and a high-voltage sense fault could indicate a potential safety hazard. Have the vehicle inspected by a qualified hybrid technician before driving further, and avoid high-load or high-speed operation.

Tools that help

- Digital multimeter with high-voltage rated probes
- OBD-II scan tool capable of reading hybrid-specific codes
- Manufacturer service information for wiring diagrams and voltage specifications
- Insulated hand tools and personal protective equipment (PPE) for high-voltage work
- Battery pack service plug removal tool (if applicable)



Reading P0BB6

- P** Powertrain: engine, transmission and emissions.
- 0** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- B** Hybrid propulsion.
- B6** The exact fault within that area.

Often seen with

P0A1F Battery Energy Control Module A Performance · **P0AFA** Hybrid/EV Battery System Voltage Low · **P0BB5** Hybrid/EV Battery Voltage Sense Y Circuit Low · **P0BB7** Hybrid/EV Battery Voltage Sense Y Circuit Intermittent/Errat · **P0BBD** Hybrid/EV Battery Pack Voltage Variation Exceeded Limit

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/p0bb6/>

