

GENERIC · POWERTRAIN

P0B56

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0B56

Hybrid/EV Battery Voltage Sense F Circuit Low

P0B56 indicates that the hybrid or electric vehicle battery pack monitoring system has detected an abnormally low voltage on the dedicated sensing circuit for one specific battery module or cell group, labeled 'F'. The computer compares the voltage reported by this sense line against the voltages from other modules and the pack total, and it flags the circuit as low when the signal falls below the expected threshold or is out of correlation with the rest of the pack.

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 service vehicle soon message
- Reduced electric-only range or the vehicle refusing to enter EV mode
- A sudden drop in state of charge or inconsistent battery gauge readings
- Powertrain derangement with limited power output or limp-home mode
- Often no symptoms besides the warning light, especially if the fault is intermittent

Common causes, most likely first

- 1 A damaged or chafed wire in the voltage sense harness between the battery module and the battery control module
- 2 A loose, corroded, or improperly seated connector terminal at the sense circuit tap point
- 3 An open or high-resistance sense line caused by a failed splice or internal harness break
- 4 A faulty battery module that has developed an internal cell imbalance or open sense connection
- 5 A defective battery control module or voltage sensing interface inside the pack electronics
- 6 Water intrusion or contamination in the battery pack connector causing a low-voltage signal
- 7 A short to ground on the sense circuit from pinched wiring during previous service work



How to diagnose and fix it

- 1 Retrieve all stored codes and freeze-frame data, then clear codes and road-test to see if P0B56 returns immediately or is intermittent
- 2 Inspect the battery pack sense harness and connectors for chafing, corrosion, water intrusion, and loose terminals
- 3 Measure the sense circuit voltage at the battery control module connector and compare it to the actual module voltage measured directly at the battery terminals
- 4 Perform a voltage drop test on the sense line and its ground reference to identify excessive resistance
- 5 Check service information for the specific sense circuit pinout and resistance specifications, then test the circuit end-to-end
- 6 If the circuit tests good, swap or isolate the suspect battery module to see if the low voltage follows the module or stays with the circuit
- 7 Replace the faulty harness, connector, battery module, or control module as indicated by the test results, then clear codes and verify the repair

Sense line faults that mimic bad battery modules

- A low voltage sense reading often comes from a simple loose connector pin or corroded terminal rather than a failing battery module, so always inspect the harness before condemning the pack.
- The code does not always mean the battery module itself is bad; a short to ground or an open in the sense wire will produce the same low signal at the control module.
- Intermittent P0B56 codes that appear only over bumps or during temperature swings frequently trace to a chafed wire inside the pack harness that only loses contact under vibration.
- Technicians sometimes replace the battery control module when the real fault is a high-resistance splice in the sense harness, so a voltage drop test on the sense line is essential before any module replacement.
- Water intrusion into the battery pack connector can create a partial short that pulls the sense voltage low without setting any other battery codes, so check for moisture and green corrosion at the pack interface.

Can I keep driving with P0B56?

Because this fault affects the battery monitoring system, continued driving can lead to inaccurate state-of-charge calculations and unexpected loss of power; limit driving to a short distance to a qualified repair facility and avoid heavy acceleration or long trips until the circuit is repaired.

Tools that help

- OBD-II scan tool with hybrid/EV battery data capability
- Digital multimeter with min/max recording
- Back probe pins and wiring diagram for the sense circuit
- Insulation resistance tester or continuity tester
- Battery pack service information and torque specifications



Reading P0B56

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

Often seen with

P0A9C Hybrid/EV Battery Temperature Sensor A Circuit Range/Perform · **P0AFA** Hybrid/EV Battery System Voltage Low · **P0B4F** Hybrid/EV Battery Voltage Sense E Circuit · **P0B55** Hybrid/EV Battery Voltage Sense F Circuit Range/Performance · **P0B57** Hybrid/EV Battery 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/p0b56/>

