

GENERIC · POWERTRAIN

P0B59

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0B59

Hybrid/EV Battery Voltage Sense G Circuit

P0B59 indicates that the hybrid or electric vehicle battery pack controller has detected an abnormal voltage signal on the voltage sense circuit designated as 'G', which is one of several individual cell-group monitoring channels. The computer compares this sense line against expected values and flags the circuit when the reading falls outside a calibrated range, often due to a wiring fault, a failing sense harness, or an internal battery module issue.

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
- Often no symptoms besides the warning light, with the vehicle driving normally
- Reduced electric-only range or forced engine operation in a hybrid
- Intermittent loss of hybrid battery assist or charging capability
- A sudden transition to limp-home mode if the fault escalates

Common causes, most likely first

- 1 Damaged or chafed voltage sense wire between the battery module and the battery energy control module
- 2 Corroded or loose connector terminal at the sense harness or module connector
- 3 Faulty voltage sense harness internal to the battery pack assembly
- 4 Failing battery energy control module or its internal sensing circuitry
- 5 Degraded or failing battery module cell group causing an out-of-range voltage reading
- 6 High-resistance ground connection shared by the sense circuit



How to diagnose and fix it

- 1 Retrieve all stored codes and freeze-frame data with a scan tool capable of hybrid battery diagnostics
- 2 Inspect the voltage sense harness and connectors for chafing, corrosion, or loose pins, especially at the battery pack interface
- 3 Measure resistance and voltage drop on the 'G' sense circuit and compare with the service information specification
- 4 Perform a battery pack voltage measurement at the module terminals to verify the sense reading against actual cell-group voltage
- 5 Check and clean the ground connection for the battery energy control module and sense circuit
- 6 If wiring and connections are good, follow the manufacturer's diagnostic flow for the battery energy control module or module replacement
- 7 Clear codes and perform a hybrid battery relearn or initialization procedure if required after repair

Sense circuit faults often mimic module failure

- A chafed sense wire inside the battery pack can set P0B59 without any driveability complaint, so technicians who replace the battery module first often miss a simple harness repair.
- The 'G' designation refers to a specific sense channel, and swapping or misrouting sense harnesses during prior repairs can cause this code to appear on an otherwise healthy pack.
- High humidity or a blocked battery pack cooling duct can cause condensation on connector pins, leading to intermittent sense circuit faults that only appear under certain conditions.
- A weak or failing 12-volt auxiliary battery can cause the battery energy control module to log false sense circuit codes, so always verify system voltage before condemning hybrid components.
- This code does not always mean the high-voltage battery is failing; the majority of P0B59 cases resolve with connector and harness repairs rather than module replacement.

Can I keep driving with P0B59?

The vehicle may remain driveable with only a warning light, but continued driving risks a sudden loss of hybrid assist or a limp-home event if the sense circuit degrades further. Avoid long trips and high-load driving until the circuit is inspected, and do not clear the code without diagnosing the root cause.

Tools that help

- Hybrid-capable scan tool with battery pack data streaming
- Digital multimeter with low-resistance measurement capability
- Insulation resistance tester
- Terminal pick and connector release tools
- Service information for battery pack sense circuit specifications
- Personal protective equipment for high-voltage safety



Reading P0B59

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

Often seen with

P0A1F Battery Energy Control Module A Performance · **P0AFA** Hybrid/EV Battery System Voltage Low · **P0B58** Hybrid/EV Battery Voltage Sense F Circuit Intermittent/Errat · **P0B5A** Hybrid/EV Battery Voltage Sense G Circuit Range/Performance · **P0B5B** Hybrid/EV Battery Voltage Sense G Circuit Low

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/p0b59/>

