

GENERIC · POWERTRAIN

P0B80

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0B80

Hybrid/EV Battery Voltage Sense N Circuit Intermittent/Erratic

P0B80 is a generic OBD-II code indicating that the hybrid or electric vehicle battery pack's voltage sensing circuit for cell group 'N' is reporting intermittent or erratic voltage readings. The battery energy control module (BECM) monitors each cell group through dedicated sense wires and compares the readings to expected values; when the signal for circuit N jumps, drops out, or becomes noisy, the module sets this code.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Medium

FIX DIFFICULTY

Professional

AREA

Hybrid propulsion

Symptoms you may notice

- Illumination of the check engine light or hybrid system warning light, often with no other noticeable symptoms.
- Intermittent or fluctuating state-of-charge readings on the dashboard gauge.
- Reduced electric-only range or the vehicle switching to the internal combustion engine more frequently.
- A hybrid system warning message such as 'Check Hybrid System' or 'Service Battery Pack'.
- Occasional rough running or hesitation if the battery management system derates power to protect the pack.
- In rare cases, the vehicle may refuse to start or enter a fail-safe mode that limits speed.

Common causes, most likely first

- 1 A loose, corroded, or damaged voltage sense wire or connector at the battery cell group N tap point.
- 2 A faulty cell voltage sensor module or sensing harness integrated into the battery pack.
- 3 Internal battery cell degradation causing unstable voltage under load, which the sense circuit faithfully reports as erratic.
- 4 Poor electrical connection at the battery energy control module (BECM) connector or a damaged BECM pin.
- 5 Electromagnetic interference or a ground fault in the low-voltage wiring near the high-voltage battery assembly.
- 6 A failing BECM that misinterprets valid sensor inputs due to internal fault.
- 7 Moisture intrusion into the battery pack or connector causing intermittent shorting or high resistance.



How to diagnose and fix it

- 1 Retrieve all stored codes and freeze-frame data with a scan tool capable of reading hybrid/EV battery module data, then clear codes and test-drive to see if P0B80 returns.
- 2 Inspect the low-voltage sense wiring and connectors at the battery pack for looseness, corrosion, or chafing, and repair any obvious damage.
- 3 Measure the voltage of cell group N directly at the sense connector with a high-impedance multimeter and compare it to the BECM-reported value to isolate a sensor versus cell problem.
- 4 Perform a wiggle test on the sense harness and connectors while monitoring live cell voltage data to catch intermittent faults.
- 5 Check the BECM ground and power supply circuits for voltage drops or resistance that could corrupt sensor readings.
- 6 If the sense circuit and connectors are good, follow the manufacturer's diagnostic flow for the BECM and battery pack, which may require a battery module or BECM replacement.
- 7 After repairs, clear codes and verify that the voltage readings for all cell groups are stable and within specification during a road test.

Sense wire faults mimic battery failure

- A loose or corroded sense wire at the cell tap is far more common than a failed battery cell, so always inspect the harness before condemning the pack.
- Intermittent codes often appear only under specific conditions such as vibration, temperature swings, or high-current events, so a simple static voltage check may miss the fault.
- The BECM may set P0B80 as a companion code when another cell group is actually failing, because erratic readings on one circuit can be caused by reference voltage instability from a neighboring cell.
- Some vehicles require a battery pack service plug disconnect and a specific reconnect procedure; skipping this can cause the BECM to relearn incorrectly and set false erratic-voltage codes.
- After any sense circuit repair, the BECM may need a calibration or learn procedure to reset adaptive voltage thresholds, otherwise the code can reappear even with a perfect repair.

Can I keep driving with P0B80?

You can usually continue driving if the only symptom is a warning light, but avoid aggressive acceleration, heavy electrical loads, and long trips until the fault is diagnosed. If the vehicle enters a reduced-power mode or shows a hybrid system warning, drive directly to a qualified technician.



Tools that help

- Hybrid/EV-capable scan tool with live cell voltage data
- High-impedance digital multimeter (CAT III rated)
- Insulated hand tools and personal protective equipment for high-voltage work
- Wiring diagram and connector pinout for the specific vehicle
- Battery pack service plug removal tool (if applicable)

Reading P0B80

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

Often seen with

P0A04 Motor Electronics Coolant Temperature Sensor Circuit Intermi · **P0A1F** Battery Energy Control Module A Performance · **P0AFA** Hybrid/EV Battery System Voltage Low · **P0B7F** Hybrid/EV Battery Voltage Sense N Circuit High · **P0B81** Hybrid/EV Battery Voltage Sense O Circuit

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/p0b80/>

