

GENERIC · POWERTRAIN

P0B77

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0B77

Hybrid/EV Battery Voltage Sense M Circuit

P0B77 indicates that the hybrid or electric vehicle battery pack controller has detected an abnormal voltage reading on the sense circuit for one of the battery modules, specifically the 'M' circuit. The computer compares this sensed voltage against expected values and flags the code when the signal falls outside a calibrated range or becomes erratic.

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 electric-only driving range or the vehicle refusing to enter EV mode
- Intermittent loss of power or a sudden transition to limp-home mode
- The battery state-of-charge gauge behaving erratically or showing incorrect readings
- A message on the dash indicating a hybrid system fault or service required
- In rare cases, the vehicle may fail to start or shut down unexpectedly while driving

Common causes, most likely first

- 1 A faulty voltage sense wire or connector at the battery module, often due to corrosion or loose terminals
- 2 A damaged or failing battery module that produces an inconsistent voltage signal
- 3 A malfunctioning battery energy control module (BECM) or voltage sensing circuit inside the pack
- 4 High-voltage cable harness chafing or damage leading to an intermittent short or open circuit
- 5 Water intrusion or contamination in the battery pack connector causing signal degradation
- 6 A failed cell within the module affecting the overall voltage reading for that sense circuit



How to diagnose and fix it

- 1 Perform a visual inspection of the battery pack connectors and sense wiring for corrosion, looseness, or damage
- 2 Use a scan tool to read live data for the 'M' circuit voltage and compare it with other module voltages to identify the faulty circuit
- 3 Check the resistance and continuity of the sense wire from the module to the BECM, repairing any opens or shorts
- 4 Verify the battery module voltage directly with a multimeter and compare it to the scan tool reading to isolate a sensor versus module fault
- 5 If the sense circuit is intact, test the battery module for internal faults using a battery pack load tester or cell voltage checker
- 6 Replace the faulty battery module or voltage sense harness as required, following manufacturer procedures for high-voltage safety
- 7 Clear the codes and perform a hybrid system relearn or adaptation reset if required, then road test to confirm the repair

Sense Circuit Faults Often Misdiagnosed

- A loose or corroded connector at the battery module is a frequent cause that many technicians overlook when they jump straight to replacing the battery pack.
- The code can be set by a momentary glitch in the sense circuit, so intermittent faults may not reappear during a short test drive and require data logging.
- A weak 12-volt auxiliary battery can cause erratic behavior in the hybrid control modules and set false voltage sense codes, so always check the 12V system first.
- The 'M' circuit designation refers to a specific sense line in the battery pack, and swapping it with a known-good circuit is a quick diagnostic trick before condemning the module.
- After repairing the circuit, some vehicles require a battery pack voltage relearn procedure to prevent the code from returning immediately.

Can I keep driving with P0B77?

You can usually continue driving to a repair shop, but avoid heavy acceleration or long trips until the fault is diagnosed, as the vehicle may enter a reduced-power mode without warning. If the hybrid warning light flashes or the vehicle loses power, pull over safely and have it towed.



Tools that help

- Hybrid/EV capable scan tool with live data and graphing
- Digital multimeter with high-voltage safety rating
- Insulation tester or megohmmeter for high-voltage circuit checks
- Battery pack load tester or cell voltage checker
- Manufacturer service information for high-voltage safety procedures

Reading P0B77

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

Often seen with

P0A1F Battery Energy Control Module A Performance · **P0AFA** Hybrid/EV Battery System Voltage Low · **P0B76** Hybrid/EV Battery Voltage Sense L Circuit Intermittent/Errat · **P0B78** Hybrid/EV Battery Voltage Sense M Circuit Range/Performance · **P0B7A** Hybrid/EV Battery Voltage Sense M 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/p0b77/>

