



P0BED

Drive Motor A Phase W Current Sensor Circuit

P0BED indicates that the powertrain control module has detected an implausible or out-of-range signal from the current sensor that monitors the W phase of the drive motor A circuit. This sensor is critical for the inverter's closed-loop control of the electric motor, and the code sets when the reported current does not match expected values under the operating conditions.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Generic (all makes)	High	Professional	Hybrid propulsion

Symptoms you may notice

- Illumination of the check engine light or service vehicle soon message
- Reduced power output or limp mode to protect the inverter and motor
- Possible shudder or hesitation during acceleration or regenerative braking
- Often no symptoms besides the warning light if the fault is intermittent
- In some cases, the vehicle may refuse to start or shift into gear

Common causes, most likely first

- 1 Faulty phase W current sensor or its internal electronics
- 2 Damaged or corroded wiring harness or connector at the sensor or inverter
- 3 Poor electrical connection or ground at the sensor reference circuit
- 4 Failed inverter assembly affecting sensor signal processing
- 5 Software calibration issue in the powertrain control module
- 6 Moisture intrusion or contamination in the sensor connector
- 7 Mechanical damage to the sensor or its mounting

How to diagnose and fix it

- 1 Perform a visual inspection of the sensor, wiring, and connectors for damage or corrosion
- 2 Check for technical service bulletins or software updates for the vehicle
- 3 Measure sensor reference voltage and ground at the connector with a multimeter
- 4 Backprobe the sensor signal wire and compare live data to expected values during a test drive
- 5 Substitute a known-good sensor or perform a resistance check if specified by the manufacturer
- 6 Repair or replace damaged wiring and connectors as needed
- 7 Clear the code and verify the repair with a road test and live data monitoring



Current Sensor Faults Often Misdiagnosed

- A loose or corroded ground connection at the inverter can cause a false phase current sensor code even when the sensor itself is good.
- The code can be set by a low 12-volt battery or charging system issue that disrupts the sensor's reference voltage, so always check battery health first.
- Intermittent sensor faults may only appear under specific load or temperature conditions, making a simple key-on test insufficient for diagnosis.
- Replacing the inverter without first verifying the sensor and wiring is an expensive misstep that technicians commonly encounter.
- Some vehicles require a relearn or calibration procedure after sensor replacement, and skipping it will cause the code to return.

Can I keep driving with P0BED?

Driving with this code is not recommended because the fault can cause unpredictable power loss or inverter damage. If you must move the vehicle, drive slowly and avoid heavy acceleration or regenerative braking, and have it diagnosed promptly.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Oscilloscope for signal analysis
- Manufacturer-specific diagnostic software
- Wiring diagram and service information

Reading P0BED

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

Often seen with

P0BEA Drive Motor A Phase V Current Sensor Circuit Range/Performan · **P0BEB** Drive Motor A Phase V Current Sensor Circuit Low · **P0BEC** Drive Motor A Phase V Current Sensor Circuit High · **P0BEE** Drive Motor A Phase W Current Sensor Circuit Range/Performan · **P0BEF** Drive Motor A Phase W Current Sensor 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/p0bed/>

