

GENERIC · POWERTRAIN

P0BF7

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0BF7

Drive Motor B Phase V Current Sensor Circuit Low

P0BF7 indicates that the inverter or motor control module has detected an abnormally low voltage signal from the current sensor monitoring phase V of drive motor B, which is the second traction motor in a hybrid or electric vehicle's propulsion system. The sensor's output is below the expected range for the measured current, so the controller cannot reliably regulate motor phase current and may disable or limit the affected motor.

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

Symptoms you may notice

- Illumination of the hybrid or electric vehicle warning light, often accompanied by a reduced power message
- The vehicle may enter a fail-safe mode that limits speed or completely disables the drive motor
- Rough operation, shuddering, or hesitation during acceleration if the motor remains partially active
- No noticeable performance change in some cases, with only the warning light stored
- Possible inability to restart the vehicle after shutdown if the fault is severe

Common causes, most likely first

- 1 Faulty phase V current sensor internal to the drive motor B assembly or inverter
- 2 Damaged, chafed, or corroded wiring in the sensor circuit, including the signal, ground, or reference voltage wires
- 3 Loose or contaminated connector pins at the current sensor or motor control module
- 4 Low or unstable reference voltage supplied to the sensor from the control module
- 5 Internal failure of the motor control module or inverter affecting sensor signal processing
- 6 Electrical interference or a poor ground connection causing a low signal reading



How to diagnose and fix it

- 1 Connect a scan tool and record all stored codes, freeze-frame data, and live current sensor readings for phase V to confirm the low signal condition
- 2 Visually inspect the current sensor harness and connectors for damage, corrosion, or loose pins, and repair any faults found
- 3 Measure the sensor reference voltage and ground at the sensor connector with a multimeter, comparing to manufacturer specifications
- 4 Back-probe the sensor signal wire and check the voltage output with the key on and during cranking or motor operation, looking for a value that stays below the normal range
- 5 Perform a wiggle test on the harness while monitoring sensor data to reveal intermittent wiring faults
- 6 If wiring and connections are good, substitute a known-good current sensor or the complete motor assembly as directed by the service information, then clear codes and retest
- 7 If the fault persists after sensor replacement, diagnose the motor control module or inverter for internal faults following the manufacturer's diagnostic flow

What the low current sensor code hides

- A low signal from the phase V current sensor often results from a poor ground connection at the sensor or control module rather than a failed sensor itself, so ground integrity should be verified before condemning parts.
- The code can be set by a momentary glitch during aggressive driving or a low-voltage event, and it may not return after clearing if the underlying cause was a one-time interference issue.
- On some vehicles, the current sensor is integrated into the motor or inverter assembly and cannot be replaced separately, making wiring checks even more critical before assembly replacement.
- A weak or failing 12-volt auxiliary battery can cause unstable reference voltages that trigger this code, so battery condition and charging system output should be ruled out early.
- This code does not always mean the drive motor is failing; it specifically points to the current sensing circuit, and misdiagnosis often leads to unnecessary motor replacement when a connector repair would suffice.

Can I keep driving with P0BF7?

Do not continue driving under load because the fault can cause the vehicle to enter a reduced-power mode without warning, and repeated operation may lead to a complete shutdown or further damage to the inverter. Have the vehicle inspected by a qualified technician as soon as possible, and avoid highway driving or heavy acceleration until repaired.



Tools that help

- OBD-II scan tool with live data and hybrid/EV capability
- Digital multimeter with back-probe pins
- Oscilloscope for waveform analysis of the current sensor signal
- Manufacturer service information for wiring diagrams and sensor specifications
- Insulated hand tools and safety gloves for high-voltage system isolation

Reading P0BF7

P	Powertrain: engine, transmission and emissions.
0	Generic (SAE) code: it means the same thing on every OBD-II vehicle.
B	Hybrid propulsion.
F7	The exact fault within that area.

Often seen with

P0A0A High Voltage System Interlock Circuit A · **P0A3F** Drive Motor A Position Sensor Circuit · **P0BF5** Drive Motor B Phase V Current Sensor Circuit · **P0BF6** Drive Motor B Phase V Current Sensor Circuit Range/Performan · **P0BF8** Drive Motor B Phase V Current Sensor 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/p0bf7/>

