

GENERIC · POWERTRAIN

P0BF4

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0BF4

Drive Motor B Phase U Current Sensor Circuit High

P0BF4 indicates that the inverter or motor control module has detected an abnormally high current signal from the phase U current sensor on drive motor B, which is the electric propulsion motor in a hybrid or electric vehicle. The sensor circuit is reporting a voltage or current value above the expected range, so the controller cannot trust the phase current measurement and may disable or limit motor operation.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

High

FIX DIFFICULTY

Professional

AREA

Hybrid propulsion

Symptoms you may notice

- Illumination of the check engine light or service vehicle soon message, often with no other noticeable symptoms
- Reduced power or limp mode, where the vehicle limits acceleration or speed to protect the inverter and motor
- The hybrid or electric system may refuse to start or may shut down shortly after startup
- Intermittent hesitation or shudder during acceleration if the high signal is not constant
- A warning message on the dash indicating a fault in the hybrid or electric drive system
- Possible inability to shift into gear or engage the ready state

Common causes, most likely first

- 1 A faulty phase U current sensor inside the motor or inverter assembly
- 2 Damaged or corroded wiring or connector pins in the sensor circuit, especially at the motor or inverter harness
- 3 High resistance or an open circuit in the sensor ground or reference voltage wire
- 4 Electrical interference or a short to voltage on the signal wire from the sensor to the controller
- 5 A failing inverter or motor control module that misinterprets the sensor signal
- 6 Internal motor damage causing abnormal current spikes that the sensor correctly reports as high
- 7 Loose or improperly torqued high-voltage cable connections causing erratic current readings



How to diagnose and fix it

- 1 Perform a visual inspection of the motor and inverter harnesses for chafed wires, corrosion, or loose connectors
- 2 Use a scan tool to read live data for the phase U current sensor and compare it with the other phase sensors to confirm an abnormal high reading
- 3 Check the sensor reference voltage and ground at the sensor connector with a multimeter, looking for values outside the specified range
- 4 Inspect the high-voltage cables and connections for tightness and signs of overheating or arcing
- 5 If the sensor circuit tests good, substitute a known-good sensor or follow the manufacturer's diagnostic flow to test the inverter or motor control module
- 6 Repair or replace any damaged wiring, connectors, or the current sensor as indicated by the tests
- 7 Clear the diagnostic trouble codes and perform a road test to verify the repair and ensure the code does not return

What the phase U sensor code hides

- A high current sensor signal often results from a poor ground connection at the inverter or motor, which skews the sensor's reference and makes it report high current even when the actual phase current is normal.
- Technicians sometimes replace the motor or inverter only to find the root cause was a chafed signal wire rubbing against a bracket, so a thorough harness inspection is essential before condemning expensive components.
- This code can be set by a momentary voltage spike during high-load events such as hard acceleration, and it may not indicate a permanent failure if the sensor circuit passes all static tests.
- The phase U current sensor is part of a three-phase current measurement system, and a fault in one sensor can cause the controller to derate the entire motor, leading to reduced power that the driver may mistake for a transmission issue.
- On some vehicles, a weak 12-volt auxiliary battery can cause the inverter to log false high-current sensor codes because the control module's internal reference voltage becomes unstable during cranking or low-voltage conditions.

Can I keep driving with P0BF4?

Do not continue driving with this code active, because the vehicle may enter a reduced-power mode or shut down unexpectedly, and continued operation could damage the inverter or motor. Have the vehicle towed to a qualified hybrid or electric vehicle technician for diagnosis.



Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter with min/max recording
- Oscilloscope for signal waveform analysis
- Insulated hand tools for high-voltage safety
- Manufacturer-specific diagnostic software or service information

Reading P0BF4

P	Powertrain: engine, transmission and emissions.
0	Generic (SAE) code: it means the same thing on every OBD-II vehicle.
B	Hybrid propulsion.
F4	The exact fault within that area.

Often seen with

P0A3F Drive Motor A Position Sensor Circuit · **P0A45** Drive Motor B Position Sensor Circuit · **P0BF3** Drive Motor B Phase U Current Sensor Circuit Low · **P0BF5** Drive Motor B Phase V Current Sensor Circuit · **P0BF6** Drive Motor B Phase V Current Sensor Circuit Range/Performan

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/p0bf4/>

