

GENERIC · POWERTRAIN

P0BF2

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0BF2

Drive Motor B Phase U Current Sensor Circuit Range/Performance

P0BF2 indicates that the inverter controller for drive motor B has detected an out-of-range or performance fault in the current sensor circuit for phase U of that motor. The computer compares the phase U current sensor signal against expected values and other phase sensors, and it sets this code when the signal is not plausible or does not respond correctly.

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 with a message to service the drive system
- Reduced power output or a limp-home mode that limits vehicle speed
- The vehicle may refuse to start or shift into drive if the fault is severe
- Intermittent hesitation or shudder during acceleration under load
- Often no symptoms besides the warning light, especially if the fault is stored but not currently active
- Possible activation of the main contactor or high-voltage system shutdown in some cases

Common causes, most likely first

- 1 Faulty phase U current sensor inside the drive motor B inverter or motor assembly
- 2 Damaged or corroded wiring or connector pins in the phase U current sensor circuit
- 3 Poor electrical connection at the inverter or motor harness, including loose ground points
- 4 Internal failure in the inverter controller affecting sensor reference voltage or signal processing
- 5 Electromagnetic interference or signal noise from nearby high-voltage cables
- 6 Moisture intrusion or contamination in the sensor connector or inverter housing
- 7 Rarely, a failed drive motor B phase U winding causing abnormal current signatures



How to diagnose and fix it

- 1 Scan all modules for stored and pending codes, and record freeze-frame data to understand when the fault occurred
- 2 Visually inspect the phase U current sensor connector and harness for damage, corrosion, or loose pins
- 3 Check the sensor reference voltage and ground at the connector with a multimeter, comparing to manufacturer specifications
- 4 Perform a wiggle test on the harness while monitoring live sensor data to detect intermittent faults
- 5 Compare phase U current sensor readings with phases V and W under key-on, engine-off conditions and during a gentle drive
- 6 If the sensor signal is out of range, replace the current sensor or the affected inverter assembly as required by the manufacturer's procedure
- 7 Clear codes and perform a road test to verify the repair, ensuring the code does not return

Before you replace the inverter assembly

- A loose or corroded connector pin at the phase U current sensor is a frequent cause that is often overlooked because the fault code points to the sensor itself.
- The code can be set by a momentary glitch during a low-voltage event, such as a weak 12-volt battery, so always check battery condition and charging system first.
- On some vehicles, the current sensor is integrated into the inverter and cannot be replaced separately, but the wiring harness is still a common failure point.
- A phase U current sensor fault does not always mean the motor or inverter is failing; signal noise from a poor ground can mimic a sensor failure.
- After repairs, some manufacturers require a calibration or learn procedure for the current sensors, and skipping it can cause the code to reset.

Can I keep driving with P0BF2?

Do not continue driving with this code active, because it can lead to a sudden loss of power or a high-voltage system shutdown. Have the vehicle towed to a qualified service facility for diagnosis and repair.

Tools that help

- OBD-II scan tool with live data and graphing capability
- Digital multimeter with min/max recording
- Oscilloscope for signal analysis
- Manufacturer service information for wiring diagrams and specifications
- Insulation tester for high-voltage cable checks



Reading P0BF2

- P** Powertrain: engine, transmission and emissions.
- 0** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- B** Hybrid propulsion.
- F2** The exact fault within that area.

Often seen with

P0A3F Drive Motor A Position Sensor Circuit · **P0A45** Drive Motor B Position Sensor Circuit · **P0BF1** Drive Motor B Phase U Current Sensor Circuit · **P0BF3** Drive Motor B Phase U Current Sensor Circuit Low · **P0BF4** Drive Motor B Phase U 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/p0bf2/>

