

GENERIC · POWERTRAIN

P0BE6

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0BE6

Drive Motor A Phase U Current Sensor Circuit Range/Performance

P0BE6 indicates that the computer has detected an out-of-range or performance problem with the current sensor circuit for phase U of drive motor A, which is the sensor that measures the electrical current flowing through one of the motor's three phases. The powertrain control module (PCM) or inverter controller compares the sensor's signal against expected values and sets this code when the signal is implausible, erratic, or outside the normal operating range.

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 symptoms
- Reduced power or limp mode, where the vehicle limits motor output to protect the inverter and motor
- Hesitation or shuddering during acceleration as the motor phase current is misreported
- Inability to start or engage drive, especially in electric and hybrid vehicles
- Intermittent stalling or sudden loss of propulsion while driving
- Unusual electrical noises or vibration from the motor area in severe cases

Common causes, most likely first

- 1 Faulty phase U current sensor or its internal electronics
- 2 Damaged or corroded wiring and connectors between the sensor and the inverter controller
- 3 Poor electrical connection at the sensor, including loose pins or water intrusion
- 4 Failed inverter controller or PCM, though this is less common
- 5 Mechanical damage to the sensor or its mounting, such as from debris or impact
- 6 Electrical interference or ground issues affecting the sensor signal
- 7 Software or calibration errors in the controller, requiring reprogramming



How to diagnose and fix it

- 1 Use an OBD-II scanner to retrieve the code and check for related codes in the motor and inverter systems
- 2 Visually inspect the phase U current sensor, its wiring, and connectors for damage, corrosion, or loose pins
- 3 Perform a wiggle test on the sensor harness while monitoring live data to detect intermittent faults
- 4 Measure the sensor's reference voltage and signal voltage with a multimeter and compare to manufacturer specifications
- 5 Check the sensor's ground circuit for excessive resistance or voltage drop
- 6 If the sensor signal is erratic or out of range, replace the phase U current sensor and clear the code
- 7 If the sensor and wiring test good, diagnose the inverter controller or PCM for internal faults, including software updates

What the phase U sensor test misses

- A phase U current sensor can pass a static resistance test yet still produce an erratic signal under load, so live data monitoring during a test drive is essential.
The code often sets due to a poor connection at the sensor connector rather than a failed sensor, and simply reseating the connector may resolve it.
- High-voltage cable routing or aftermarket accessories can introduce electrical noise that mimics a sensor fault, so check for recent modifications.
- On some vehicles, a weak 12-volt battery or charging system issue can cause the controller to misread sensor signals, so always verify battery health first.

This code does not always mean the sensor is bad; a failing inverter or motor winding can also cause implausible current readings, so follow the diagnostic flow before replacing parts.

Can I keep driving with P0BE6?

Do not continue driving with this code, as it can cause sudden loss of power or leave you stranded. Have the vehicle towed to a qualified repair facility for diagnosis, especially if it is a hybrid or electric vehicle with high-voltage systems.

Tools that help

- OBD-II scanner with live data capability
- Digital multimeter
- Oscilloscope for signal analysis
- Manufacturer service information for wiring diagrams and specifications
- Insulation tester for high-voltage circuit checks



Reading P0BE6

- P** Powertrain: engine, transmission and emissions.
- 0** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- B** Hybrid propulsion.
- E6** The exact fault within that area.

Often seen with

P0A3F Drive Motor A Position Sensor Circuit · **P0A78** Drive Motor A Inverter Performance · **P0BE5** Drive Motor A Phase U Current Sensor Circuit · **P0BE7** Drive Motor A Phase U Current Sensor Circuit Low · **P0BE8** Drive Motor A 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/p0be6/>

