

GENERIC · POWERTRAIN

P0C5B

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0C5B

Drive Motor A Position Sensor Circuit B Range/Performance

P0C5B indicates that the hybrid or electric vehicle control module has detected an out-of-range or erratic signal from the 'B' position sensor circuit of drive motor A, which is the primary traction motor. The computer compares this sensor's voltage or pulse pattern against expected values and flags the code when the signal falls outside the valid range or fails a rationality check.

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

Symptoms you may notice

- Illumination of the hybrid system or check engine light, often with no other noticeable symptoms
- Reduced power output or a 'limp home' mode that limits vehicle speed
- Rough or delayed engagement of the drive motor when accelerating from a stop
- Intermittent shudder or hesitation during light acceleration or regenerative braking
- A message on the dash indicating a hybrid system fault or service required
- In rare cases, the vehicle may refuse to start or shift into gear

Common causes, most likely first

- 1 Faulty position sensor B inside drive motor A, such as a damaged hall-effect element or worn internal connection
- 2 Damaged or chafed wiring in the sensor circuit, often near the motor housing or through a connector
- 3 Corroded, loose, or water-intruded electrical connector at the motor position sensor
- 4 Signal interference or a poor ground connection shared with the sensor circuit
- 5 Internal fault in the motor control module or inverter that processes the sensor signal
- 6 Mechanical wear in the motor or resolver assembly that alters the sensor air gap or alignment



How to diagnose and fix it

- 1 Inspect the motor position sensor connector and wiring for corrosion, chafing, or loose pins, and clean or repair as needed
- 2 Check the sensor circuit for continuity and short-to-ground or short-to-power faults using a multimeter
- 3 Verify the sensor signal with an oscilloscope or scan tool live data while slowly rotating the motor by hand or during a road test
- 4 Compare sensor B readings against sensor A or the resolver output to confirm which circuit is erratic
- 5 Perform a resistance and air-gap check on the sensor if the manufacturer provides specifications
- 6 Replace the faulty position sensor or resolver assembly if the signal is confirmed bad at the sensor
- 7 Clear the code and perform a hybrid system relearn or calibration drive cycle, then recheck for return of the fault

What the code does not always mean

- A P0C5B is frequently set by a simple loose or corroded connector at the motor position sensor, so always inspect the harness before condemning the sensor itself.
- The code can be triggered by a weak 12-volt battery or poor chassis ground that causes the control module to misread the sensor signal, especially during cranking or high electrical load.
- On some vehicles, a failing inverter or motor control module will set this code even though the sensor and wiring test perfectly good, so module diagnostics are part of the fault path.
- After replacing a sensor or module, many vehicles require a specific calibration or learn procedure; skipping it will cause the code to reset immediately.
- A P0C5B can appear alongside misfire or communication codes that are unrelated to the motor sensor, so do not assume the sensor is the only problem until all stored codes are reviewed.

Can I keep driving with P0C5B?

You can usually drive the vehicle to a repair shop if the only symptom is the warning light and power remains normal, but avoid hard acceleration or long trips. If the vehicle enters limp mode or shows reduced power, limit driving to a safe distance and arrange a proper diagnosis promptly.

Tools that help

- OBD-II scan tool with hybrid system capability and live data
- Digital multimeter with back-probing pins
- Oscilloscope for waveform analysis of the sensor signal
- Vehicle-specific service information for circuit and resistance specifications
- Basic hand tools for connector and sensor access



Reading P0C5B

- P** Powertrain: engine, transmission and emissions.
- 0** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- C** Hybrid propulsion.
- 5B** The exact fault within that area.

Often seen with

P0A3F Drive Motor A Position Sensor Circuit · **P0A45** Drive Motor B Position Sensor Circuit · **P0C5A** Drive Motor A Position Sensor Circuit B Circuit · **P0C5C** Drive Motor A Position Sensor Circuit B Circuit Low · **P0C5D** Drive Motor A Position Sensor Circuit B 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/p0c5b/>

