

GENERIC · POWERTRAIN

P0A49

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0A49

Drive Motor B Position Sensor Circuit Intermittent

P0A49 indicates that the hybrid or electric vehicle control module has detected an intermittent fault in the position sensor circuit for drive motor B, which is the motor responsible for propulsion or regenerative braking. The computer sees the sensor signal drop out or become erratic for brief periods, rather than failing completely, so the fault may not be present at all times.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Medium

FIX DIFFICULTY

Professional

AREA

Hybrid propulsion

Symptoms you may notice

- Illumination of the hybrid system warning light or check engine light, often with no other noticeable symptoms.
- Intermittent loss of power or hesitation during acceleration, especially under load or when the motor is transitioning between driving and regenerative braking.
- Rough or jerky operation when the vehicle switches between electric and engine power, or during regenerative braking.
- The vehicle may enter a fail-safe mode that limits speed or disables hybrid operation, though this is less common with an intermittent fault.
- A stored history code that sets only under specific conditions such as certain temperatures, vibrations, or moisture levels.

Common causes, most likely first

- 1 A loose, corroded, or damaged connector at the drive motor B position sensor or at the control module, causing an intermittent electrical connection.
- 2 Chafed, pinched, or broken wiring in the sensor circuit that makes contact only intermittently, often due to vibration or routing issues.
- 3 A failing position sensor itself, where internal components break down and produce erratic signals under certain conditions.
- 4 Water intrusion or contamination in the sensor connector or housing, leading to intermittent shorting or signal loss.
- 5 A faulty hybrid control module or inverter assembly that misinterprets a good sensor signal, though this is less likely than wiring or sensor issues.
- 6 Loose or damaged ground connections for the motor or control module that cause voltage fluctuations affecting the sensor circuit.



How to diagnose and fix it

- 1 Perform a visual inspection of the drive motor B position sensor connector and wiring, looking for corrosion, loose pins, chafing, or signs of water intrusion.
- 2 Check for technical service bulletins (TSBs) or manufacturer-specific diagnostic procedures for this code, as some vehicles have known connector or harness issues.
- 3 Use a scan tool to monitor the position sensor live data while wiggling the harness and connectors to reproduce the intermittent fault.
- 4 Measure the sensor circuit resistance and voltage drop across the connector and wiring, comparing to factory specifications to identify high resistance or open circuits.
- 5 If the wiring and connectors are good, test the position sensor with an oscilloscope to check for a clean, consistent waveform; replace the sensor if the signal is erratic.
- 6 Inspect and clean all ground connections related to the hybrid system, tightening any loose fasteners and repairing corroded terminals.
- 7 If the fault persists after all external checks, follow the manufacturer's diagnostic flow chart for the hybrid control module, which may require replacement if internal faults are confirmed.

Intermittent faults hide in connectors and harnesses

- A common misdiagnosis is replacing the drive motor B position sensor when the real problem is a loose pin in the connector that only loses contact during vibration; always perform a wiggle test on the harness while watching live data.
- Intermittent faults often set only under specific conditions such as cold starts, high humidity, or rough roads, so the code may not be present when the vehicle is in the shop; checking freeze-frame data can reveal the conditions at the time of failure.
- The position sensor circuit is sensitive to voltage drops, so a weak 12-volt battery or a failing DC-DC converter can cause erratic sensor signals that mimic a sensor failure.
- Some vehicles use a shared ground for multiple sensors in the hybrid system, and a single bad ground can cause several intermittent codes including P0A49, so inspect all grounds before condemning the sensor.
- After any repair, clear the codes and perform a thorough road test that includes the conditions noted in freeze-frame data to confirm the fault is truly resolved, as intermittent issues can easily return.

Can I keep driving with P0A49?

You can usually continue driving with this code, but avoid aggressive acceleration, heavy loads, or conditions that trigger the intermittent fault until it is diagnosed. If the vehicle enters a reduced-power mode or the warning light begins flashing, stop driving and seek professional service to prevent further hybrid system damage.



Tools that help

- OBD-II scan tool with live data and freeze-frame capability
- Digital multimeter with min/max recording
- Oscilloscope for waveform analysis
- Wire terminal removal tools and electrical contact cleaner
- Factory service information or equivalent diagnostic flow charts

Reading P0A49

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

Often seen with

P0A48 Drive Motor B Position Sensor Circuit High · **P0A4A** Drive Motor B Position Sensor Circuit Overspeed · **P0A4B** Generator Position Sensor Circuit · **P0A4C** Generator Position Sensor Circuit Range/Performance · **P0A4D** Generator Position Sensor Circuit Low

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/p0a49/>

