

GENERIC · POWERTRAIN

P0BD1

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0BD1

Drive Motor Inverter Temperature Sensor C Circuit

P0BD1 indicates that the vehicle's computer has detected an abnormal condition in the electrical circuit for the drive motor inverter temperature sensor 'C'. This sensor monitors the temperature of the inverter, which converts direct current (DC) to alternating current (AC) for the drive motor, and the code sets when the signal voltage falls outside the expected range or is intermittent.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Medium

FIX DIFFICULTY

Professional

AREA

Hybrid propulsion

Symptoms you may notice

- Illumination of the check engine light or service vehicle soon light, often with no other noticeable symptoms.
- Reduced power output or limp mode as the vehicle limits motor operation to protect the inverter from overheating.
- Inconsistent or inaccurate temperature readings on the dashboard or diagnostic display, if equipped.
- Possible shutdown of the hybrid or electric drive system while driving, requiring a restart.
- In rare cases, the vehicle may fail to start or enter a ready-to-drive state.

Common causes, most likely first

- 1 Faulty temperature sensor 'C' itself, due to internal failure or degradation from heat cycling.
- 2 Damaged or corroded wiring harness or connector at the sensor or inverter, often from vibration or moisture intrusion.
- 3 Open or short circuit in the sensor signal or ground circuit, including chafed wires or loose pins.
- 4 Failed inverter control module or internal circuit board issue affecting sensor signal processing.
- 5 Poor electrical connection at the inverter assembly, such as a loose ground strap or terminal.
- 6 Extreme overheating event that damaged the sensor or its wiring, though this is less common.



How to diagnose and fix it

- 1 Connect a scan tool and record all stored and pending codes, then clear codes and test-drive to see if P0BD1 returns.
- 2 Visually inspect the sensor connector and wiring for damage, corrosion, or loose pins, and repair as needed.
- 3 Measure the sensor's resistance or voltage output with a multimeter and compare to manufacturer specifications to verify sensor operation.
- 4 Check the continuity and resistance of the signal and ground circuits between the sensor and the control module to rule out wiring faults.
- 5 If the sensor is faulty, replace it following the manufacturer's procedure, which may require removing the inverter cover or assembly.
- 6 After repair, clear codes and perform a road test to confirm the code does not reset and the temperature reading is normal.
- 7 If the code persists, diagnose the inverter control module or seek dealer-level reprogramming or replacement.

Common misdiagnosis traps for P0BD1

- A loose or corroded connector at the inverter is a frequent cause that mimics a failed sensor, so always inspect connectors before replacing parts.
- The code can set intermittently due to vibration or heat, so a wiggle test of the harness while monitoring sensor data is a valuable diagnostic step.
- Some vehicles use multiple temperature sensors in the inverter, and a fault in one circuit can cause the system to default to a safe temperature estimate, masking the issue.
- A weak 12-volt battery or charging system fault can cause erratic sensor readings and set this code, so verify battery health first.
- Aftermarket accessories or improper jump-starting can introduce voltage spikes that damage sensor circuits, leading to this code without a component failure.

Can I keep driving with P0BD1?

It is generally safe to drive with this code if the vehicle is not in limp mode and no overheating warnings are present, but avoid heavy acceleration or sustained high-speed driving until diagnosed. If the vehicle enters limp mode or shuts down, stop driving and seek professional repair immediately.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Wiring diagram and service information for the specific vehicle
- Insulation piercing probes or back probe pins
- Heat gun or hair dryer for temperature simulation (optional)



Reading P0BD1

- P** Powertrain: engine, transmission and emissions.
- 0** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- B** Hybrid propulsion.
- D1** The exact fault within that area.

Often seen with

P0A3F Drive Motor A Position Sensor Circuit · **P0BD0** Generator Inverter Temperature Sensor A Circuit Intermittent · **P0BD2** Drive Motor Inverter Temperature Sensor C Circuit Range/Perf · **P0BD3** Drive Motor Inverter Temperature Sensor C Circuit Low · **P0C01** Drive Motor A Current 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/p0bd1/>

