

GENERIC · POWERTRAIN

P0BD2

OBD-II TROUBLE CODE

P0BD2

Drive Motor Inverter Temperature Sensor C Circuit Range/Performance

P0BD2 indicates that the drive motor inverter temperature sensor C circuit is reporting a range or performance fault, meaning the voltage signal from that sensor does not correlate with expected values under current operating conditions. The inverter controller compares the sensor's output against a plausibility model and flags this code when the signal stays out of bounds or behaves erratically for a calibrated period.

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

Symptoms you may notice

- Illumination of the check engine light or a dedicated hybrid/EV warning lamp
- Often no symptoms besides the warning light, especially if the fault is intermittent
- Reduced power output or limp-home mode triggered by the inverter controller
- Possible shutdown of the drive motor inverter to protect power electronics from overheating
- Inconsistent or missing temperature readings on a scan tool data stream
- In rare cases, a noticeable drop in acceleration or a message to service the hybrid system

Common causes, most likely first

- 1 Faulty inverter temperature sensor C itself, such as an open or shorted thermistor element
- 2 Damaged or corroded wiring harness between the sensor and the inverter controller
- 3 Loose, backed-out, or contaminated connector terminals at the sensor or controller
- 4 Internal fault in the drive motor inverter controller affecting the sensor reference voltage or signal processing
- 5 Coolant flow restriction or air pockets causing the sensor to see temperatures outside the expected range
- 6 Sensor installation error, such as improper seating or missing thermal paste, leading to poor thermal coupling
- 7 Electrical interference or ground offset issues on the sensor signal circuit



How to diagnose and fix it

- 1 Connect a scan tool and record the freeze-frame data and live sensor C temperature values to confirm the fault is active and not historical
- 2 Visually inspect the sensor, its connector, and the wiring harness for chafing, corrosion, or loose pins, and repair any obvious damage
- 3 Measure the sensor resistance or voltage at the sensor connector and compare it to the manufacturer's temperature-resistance chart
- 4 Back-probe the signal circuit at the inverter controller to check for voltage drop or an open circuit between the sensor and the controller
- 5 Verify the inverter coolant level and bleed the cooling system if air pockets are suspected, then recheck sensor readings
- 6 If the sensor and wiring test good, substitute a known-good sensor or use a signal simulator to confirm whether the controller or the sensor is at fault
- 7 Replace the faulty sensor or inverter controller as indicated by the test results, clear the codes, and verify the repair with a road test

What the inverter temperature sensor C really monitors

- This code often sets intermittently due to a poor connector pin tension that only loses contact during temperature swings or vibration, so a wiggle test while watching live data is essential.
- A low coolant level or trapped air in the inverter cooling loop can cause the sensor to report a range fault even when the sensor itself is perfectly functional.
- Technicians sometimes replace the inverter controller when the real problem is a chafed signal wire behind the motor assembly, so always perform a continuity and load test on the circuit before condemning the controller.
- The sensor C circuit may share a reference voltage or ground with other temperature sensors, and a fault in that shared circuit can set multiple related codes that point away from the true cause.
- After any repair, the inverter controller may need a relearn or adaptation procedure to clear the learned fault counter, otherwise the code can reappear until the drive cycle completes.

Can I keep driving with P0BD2?

You can usually drive the vehicle short distances at reduced power, but avoid sustained high-speed driving or heavy loads because the inverter may overheat without a valid temperature signal. If the vehicle enters limp-home mode or shows a hybrid system warning, stop safely and arrange a diagnostic scan before continuing.



Tools that help

- OBD-II scan tool with live data and freeze-frame capability
- Digital multimeter with temperature probe or resistance measurement
- Back-probe kit and wiring diagram for the inverter sensor circuit
- Manufacturer service information for sensor resistance charts and torque specifications
- Insulated hand tools and connector release tools for hybrid high-voltage safety

Reading P0BD2

P	Powertrain: engine, transmission and emissions.
0	Generic (SAE) code: it means the same thing on every OBD-II vehicle.
B	Hybrid propulsion.
D2	The exact fault within that area.

Often seen with

P0A3F Drive Motor A Position Sensor Circuit · **P0BD0** Generator Inverter Temperature Sensor A Circuit Intermittent · **P0BD1** Drive Motor Inverter Temperature Sensor C Circuit · **P0BD3** Drive Motor Inverter Temperature Sensor C Circuit Low · **P0C76** Hybrid/EV Battery System Discharge Time Too Long

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/p0bd2/>

