

GENERIC · POWERTRAIN

P0BDD

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0BDD

Drive Motor Inverter Temperature Sensor E Circuit Low

P0BDD indicates that the drive motor inverter temperature sensor E circuit is reporting a voltage below the expected range, which the computer interprets as an abnormally low signal. This sensor monitors the temperature of the inverter that converts DC power to AC for the drive motor, and a low circuit reading can be caused by a faulty sensor, damaged wiring, or a poor connection.

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 service vehicle soon message, often with no other noticeable symptoms.
- Reduced power output or limp mode engagement, limiting vehicle speed and acceleration.
- Inconsistent or erratic temperature gauge readings for the inverter system, if equipped.
- Possible overheating warnings or shutdown of the drive motor system in severe cases.
- Intermittent driveability issues such as hesitation or sudden loss of power during acceleration.

Common causes, most likely first

- 1 Faulty inverter temperature sensor E, internally shorted or failing to produce the correct resistance.
- 2 Damaged or chafed wiring in the sensor circuit, causing a short to ground or a low-resistance path.
- 3 Corroded or loose electrical connector at the sensor or at the control module, creating high resistance or intermittent contact.
- 4 Moisture intrusion into the sensor connector or wiring harness, leading to signal degradation.
- 5 Internal fault in the inverter assembly or control module affecting the sensor reference voltage.
- 6 Aftermarket accessories or improper repairs that have disturbed the sensor circuit wiring.



How to diagnose and fix it

- 1 Perform a visual inspection of the sensor, connector, and wiring for obvious damage, corrosion, or loose connections.
- 2 Use a scan tool to retrieve freeze-frame data and check for other related codes that might indicate a pattern.
- 3 Measure the resistance of the temperature sensor with a multimeter and compare to the manufacturer's specification for the ambient temperature.
- 4 Backprobe the sensor connector to check for the presence of reference voltage and a good ground, following the factory wiring diagram.
- 5 Inspect the wiring harness for continuity and shorts to ground between the sensor and the control module, repairing as needed.
- 6 If the sensor tests out of specification, replace the inverter temperature sensor and clear the codes to verify the repair.
- 7 If the sensor and wiring are good, diagnose the control module or inverter assembly for internal faults, which may require dealer-level service.

Common misdiagnosis traps for P0BDD

- A low circuit code often results from a short to ground in the wiring rather than a failed sensor, so always check the harness before replacing parts.
- The inverter temperature sensor may share a reference voltage or ground with other sensors, so a fault in a shared circuit can set multiple codes and mislead diagnosis.
- Intermittent connections can cause the code to set only under certain conditions such as vibration or temperature changes, making it important to wiggle-test the harness while monitoring live data.
- Some vehicles use a thermistor whose resistance decreases as temperature increases, so a low voltage reading can actually indicate an overheated inverter rather than a circuit fault.
- After a collision or major service, pinched or stretched wiring near the inverter is a frequent cause that is easily overlooked during visual inspection.

Can I keep driving with P0BDD?

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 loads. If the vehicle enters reduced power mode or shows overheating messages, stop driving and seek professional diagnosis to prevent damage to the inverter or motor.



Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter with resistance and voltage measurement
- Factory service information or wiring diagrams for the specific vehicle
- Backprobe kit for testing connectors without damage
- Insulation resistance tester for checking shorts to ground

Reading P0BDD

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

Often seen with

P0BDB Drive Motor Inverter Temperature Sensor E Circuit · **P0BDC** Drive Motor Inverter Temperature Sensor E Circuit Range/Perf · **P0BDE** Drive Motor Inverter Temperature Sensor E Circuit High · **P0BDF** Drive Motor Inverter Temperature Sensor E Circuit Intermitte · **P0C00** Drive Motor A Current 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/p0bdd/>

