

GENERIC · POWERTRAIN

P0BD7

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0BD7

Drive Motor Inverter Temperature Sensor D Circuit Range/Performance

P0BD7 indicates that the inverter's temperature sensor D circuit is reporting a voltage or signal that falls outside the expected range for the current operating conditions, or that the sensor's performance is erratic. The computer compares the sensor's output against known limits and flags the code when the signal is implausible, stuck, or inconsistent with other temperature inputs.

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 or limp mode if the inverter derates to protect itself from perceived overheating.
- Intermittent warning light that may clear after a key cycle and return under specific load or temperature conditions.
- A message on the dashboard indicating a hybrid or electric system fault, depending on the vehicle's display.
- In rare cases, the vehicle may refuse to start or shift into gear if the fault is interpreted as a safety risk.

Common causes, most likely first

- 1 Faulty temperature sensor D inside the inverter, such as an open or shorted thermistor element.
- 2 Damaged or corroded wiring or connector pins between the sensor and the inverter control module.
- 3 Poor electrical connection at the sensor or at the control module, often due to vibration or moisture intrusion.
- 4 Internal fault in the inverter control module affecting the sensor signal processing circuit.
- 5 Coolant flow restriction or air pockets causing the sensor to read temperatures outside the expected range for the actual conditions.
- 6 Software calibration issue in the control module that misinterprets a valid sensor signal.



How to diagnose and fix it

- 1 Use a scan tool to record freeze-frame data and verify the code is current, then inspect the sensor's live temperature reading against ambient and coolant temperature after a cold soak.
- 2 Perform a visual inspection of the sensor connector and harness for chafing, corrosion, or loose pins, and check for coolant leaks or contamination at the inverter.
- 3 Measure the sensor's resistance with a multimeter and compare it to the manufacturer's temperature-resistance chart to confirm the sensor is in specification.
- 4 Back-probe the sensor signal circuit at the control module and check for a stable voltage that changes with temperature, looking for opens, shorts, or excessive resistance.
- 5 If the sensor and wiring test good, check for technical service bulletins or software updates for the inverter control module before condemning it.
- 6 Replace the temperature sensor if it fails the resistance test, clear the code, and verify the live data reads correctly after a test drive.
- 7 If the fault persists with a known-good sensor and wiring, diagnose or replace the inverter control module as the last step.

What the inverter temperature sensor D really monitors

- Sensor D often monitors a specific internal component such as a power module or coolant channel, so a fault can be set even when overall inverter temperature looks normal on a generic scan tool.
- A low coolant level or trapped air pocket can cause the sensor to report a range or performance error without any sensor or wiring defect, so always verify coolant condition and bleed the system first.
- The code can be stored intermittently by a momentary connector wiggle or vibration that does not leave visible damage, making a wiggle test and live-data logging essential.
- Some vehicles set this code when the inverter control module's internal self-test fails, even though the sensor circuit is electrically sound, so module replacement should never be the first step.
- Clearing the code without repairing the root cause often results in a return after a few drive cycles, especially if the fault is temperature-dependent and only appears under high load.

Can I keep driving with P0BD7?

You can generally drive the vehicle to a workshop if the warning light is steady and the car feels normal, but avoid heavy acceleration or sustained high-speed driving that could raise inverter temperature. If the vehicle enters limp mode or displays a hybrid system fault, stop safely and arrange a tow to prevent further damage.



Tools that help

- OBD-II scan tool with live data and freeze-frame capability
- Digital multimeter with temperature probe
- Manufacturer-specific service information for resistance charts and wiring diagrams
- Back-probe kit or breakout box for signal circuit testing
- Coolant refractometer or hydrometer to check coolant condition

Reading P0BD7

P	Powertrain: engine, transmission and emissions.
0	Generic (SAE) code: it means the same thing on every OBD-II vehicle.
B	Hybrid propulsion.
D7	The exact fault within that area.

Often seen with

P0A3F Drive Motor A Position Sensor Circuit · **P0BD5** Drive Motor Inverter Temperature Sensor C Circuit Intermittent · **P0BD6** Drive Motor Inverter Temperature Sensor D Circuit · **P0BD8** Drive Motor Inverter Temperature Sensor D Circuit Low · **P0C73** Hybrid Battery Pack Cooling Pump Performance

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/p0bd7/>

