

GENERIC · POWERTRAIN

P0BE3

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0BE3

Drive Motor Inverter Temperature Sensor F Circuit High

P0BE3 indicates that the drive motor inverter temperature sensor F circuit is reporting a voltage higher than the manufacturer's expected range, which the computer interprets as an open circuit or a short to voltage. The inverter converts direct current (DC) from the battery to alternating current (AC) for the drive motor, and sensor F monitors its temperature to protect the electronics from overheating.

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 light, often with no other noticeable symptoms.
- Reduced power output or limp mode as the inverter limits current to prevent overheating.
- Inconsistent or erratic temperature readings on a scan tool, sometimes showing implausible values.
- In rare cases, the vehicle may refuse to start or shift into gear if the inverter protection strategy is triggered.
- No visible signs of overheating, but the code may be accompanied by other inverter-related codes.

Common causes, most likely first

- 1 Open circuit in the sensor F signal wire, such as a broken wire or disconnected connector.
- 2 Short to voltage on the sensor F signal circuit, often due to chafed wiring or moisture intrusion.
- 3 Failed inverter temperature sensor F, causing an open or high-resistance internal element.
- 4 Corroded or damaged connector pins at the sensor or inverter harness.
- 5 Faulty inverter control module or internal circuit board issue affecting sensor readings.
- 6 Poor ground connection for the sensor circuit, leading to reference voltage shifts.



How to diagnose and fix it

- 1 Connect a scan tool and record the sensor F temperature reading to confirm it is stuck high or implausible.
- 2 Visually inspect the sensor F connector and wiring for damage, corrosion, or loose pins, and repair as needed.
- 3 Measure resistance across the sensor F terminals and compare to the manufacturer's specification to check for an open circuit.
- 4 Check for short to voltage on the signal wire by measuring voltage with the sensor disconnected and the key on.
- 5 Perform a voltage drop test on the ground circuit to ensure a solid reference.
- 6 If wiring and sensor test good, substitute a known-good sensor or simulate the signal to verify the inverter module responds correctly.
- 7 Replace the faulty sensor or inverter module as diagnosed, then clear codes and verify the reading returns to normal.

Inverter sensor F high circuit traps

- A common oversight is assuming the sensor itself has failed when the real problem is a chafed wire harness near the inverter, often caused by vibration or heat damage.
- The code can set intermittently due to moisture in the connector, so a wiggle test and dielectric grease application may be needed after repair.
- Some vehicles use a shared reference voltage for multiple sensors, so a fault in another sensor on the same circuit can cause P0BE3 to set.
- The inverter temperature sensor F may be integrated into a larger assembly, making replacement more involved than a simple sensor swap.
- Always check for technical service bulletins (TSBs) for the specific vehicle, as some manufacturers have known issues with connector sealing or wire routing.

Can I keep driving with P0BE3?

It is generally safe to drive with this code if the vehicle is not in limp mode, but avoid heavy acceleration or prolonged driving that could cause the inverter to overheat. If the vehicle enters reduced power mode or shows other warning lights, seek service immediately.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Wiring diagram for the specific vehicle
- Terminal test kit and backprobe pins
- Heat gun and soldering tools for wire repair



Reading P0BE3

- P** Powertrain: engine, transmission and emissions.
- 0** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- B** Hybrid propulsion.
- E3** The exact fault within that area.

Often seen with

P0A3F Drive Motor A Position Sensor Circuit · **P0A94** DC/DC Converter A Performance · **P0BE2** Drive Motor Inverter Temperature Sensor F Circuit Low · **P0BE4** Drive Motor Inverter Temperature Sensor F Circuit Intermitte · **P0BE5** Drive Motor A Phase U Current Sensor Circuit

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/p0be3/>

