

GENERIC · POWERTRAIN

P0AF5

OBD-II TROUBLE CODE

P0AF5

Drive Motor Inverter Temperature Sensor B Circuit High

P0AF5 indicates that the vehicle's control module has detected an abnormally high voltage on the signal circuit for the drive motor inverter temperature sensor B, which is a thermistor that monitors the inverter's thermal condition. The circuit is considered high when the voltage exceeds the expected range, typically because the sensor circuit is open, the sensor has failed, or the wiring has a poor connection.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Generic (all makes)	Medium	Intermediate	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 as the inverter derates to protect itself from perceived overheating
- Inconsistent or erratic temperature readings on a scan tool, sometimes showing implausible values
- Possible shutdown of the hybrid or electric drive system if the fault escalates while driving
- In rare cases, a burning smell or visible damage near the inverter if the sensor circuit is shorted to voltage

Common causes, most likely first

- 1 Open or damaged signal wire between the inverter temperature sensor B and the control module
- 2 Failed inverter temperature sensor B (internal open circuit or drift)
- 3 Corroded, loose, or disconnected electrical connector at the sensor or control module
- 4 Short to voltage on the sensor signal circuit, often from chafed wiring near hot or moving components
- 5 Faulty control module driver circuit for the sensor input
- 6 Coolant contamination or physical damage to the sensor from overheating or impact



How to diagnose and fix it

- 1 Connect a scan tool and record the freeze-frame data and sensor voltage to confirm the high-voltage condition
- 2 Visually inspect the sensor connector and wiring for corrosion, looseness, or obvious damage, and repair as needed
- 3 Measure the sensor resistance with a multimeter and compare it to the manufacturer's temperature-resistance chart
- 4 Check the signal circuit for an open or short to voltage using a multimeter and wiring diagram, repairing any wiring fault
- 5 If the wiring and connector are good, substitute a known-good sensor and recheck the live data to see if the voltage normalizes
- 6 Verify the control module's internal driver by back-probing the sensor signal circuit and checking for a stable reference voltage
- 7 Clear the diagnostic trouble codes and perform a road test to confirm the repair and ensure the code does not return

When the sensor is not the culprit

- A high-voltage code on a temperature sensor circuit is more often caused by an open signal wire or a bad connector than by the sensor itself, so always check the harness before condemning the sensor.
- The inverter temperature sensor B is a negative temperature coefficient (NTC) thermistor, meaning its resistance drops as temperature rises; an open circuit mimics a very cold temperature and drives the voltage high.
- On many hybrid and electric vehicles, the inverter temperature sensor shares a reference voltage or ground with other sensors, so a fault in a shared circuit can set multiple temperature-related codes.
- Intermittent high-voltage readings can be caused by vibration or thermal expansion opening a marginal connection, so wiggle-test the harness while watching live data.
- Replacing the sensor without clearing the adaptive learning or performing a recalibration may leave the vehicle in a derated state even after the repair.

Can I keep driving with P0AF5?

It is generally safe to drive with this code if the vehicle is not in limp mode and the temperature reading is stable, but avoid heavy acceleration or long uphill grades because the inverter may be running without proper thermal protection. If the vehicle enters reduced power mode or shows a hybrid system warning, stop driving and have it inspected promptly.



Tools that help

- OBD-II scan tool with live data and freeze-frame capability
- Digital multimeter with resistance and voltage measurement
- Back-probe kit or piercing probes for signal circuit testing
- Vehicle-specific wiring diagram or service information
- Socket set and trim removal tools for accessing the sensor and harness

Reading P0AF5

P	Powertrain: engine, transmission and emissions.
0	Generic (SAE) code: it means the same thing on every OBD-II vehicle.
A	Hybrid propulsion.
F5	The exact fault within that area.

Often seen with

P0A3F Drive Motor A Position Sensor Circuit · **P0AF4** Drive Motor Inverter Temperature Sensor B Circuit Low · **P0AF6** Drive Motor Inverter Temperature Sensor B Circuit Intermittent · **P0AFA** Hybrid/EV Battery System Voltage 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/p0af5/>

