

GENERIC · POWERTRAIN

P0AF4

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0AF4

Drive Motor Inverter Temperature Sensor B Circuit Low

P0AF4 means the hybrid drive motor inverter's temperature sensor B is reporting a voltage below the normal range to the vehicle's control module. The computer has detected a low-voltage condition on that sensor circuit, which usually points to a wiring fault, a poor connection, or a failed sensor rather than an actual overheating event.

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 hybrid system warning light, often with no other noticeable symptoms
- Reduced power or a limp-home mode as the inverter protects itself when temperature data is unreliable
- The hybrid system may refuse to start or may shut down unexpectedly in some cases
- A message on the driver information display warning of a hybrid system fault or inverter temperature issue
- In rare cases, the vehicle may enter a forced shutdown or fail to restart after being parked

Common causes, most likely first

- 1 A faulty inverter temperature sensor B that has failed internally and reads low
- 2 Damaged, chafed, or corroded wiring in the sensor B signal or ground circuit
- 3 A loose or contaminated electrical connector at the sensor or at the inverter assembly
- 4 High resistance in the ground circuit for the sensor, causing a false low-voltage reading
- 5 A short to ground on the signal wire between the sensor and the control module
- 6 A failed or failing inverter control module that misinterprets or cannot read the sensor signal
- 7 Moisture intrusion into the sensor or connector, common in hybrid inverter assemblies exposed to road splash



How to diagnose and fix it

- 1 Scan all modules for stored and pending codes, and record freeze-frame data to confirm the fault is present and not intermittent
- 2 Visually inspect the inverter temperature sensor B, its connector, and the wiring harness for damage, corrosion, or loose pins
- 3 Measure the sensor's resistance and compare it to the manufacturer's temperature-resistance chart to verify the sensor itself
- 4 Back-probe the sensor signal and ground wires at the control module connector to check for a short to ground or excessive voltage drop
- 5 Perform a wiggle test on the harness and connectors while watching live sensor data to catch intermittent faults
- 6 If wiring and connectors are good, replace the inverter temperature sensor B and clear the codes
- 7 If the sensor and circuits test good but the code returns, diagnose or replace the inverter control module as the last step

What a low sensor reading really means

- A low-voltage signal from a temperature sensor almost always indicates a circuit problem rather than a genuinely cold inverter, so chasing an overheating diagnosis is a common misstep.
- Technicians often replace the sensor first only to find a corroded connector pin or a chafed wire that was the real cause, so circuit testing should come before parts replacement.
- The inverter temperature sensor B is sometimes shared with other sensor circuits in the same harness, so a fault in an adjacent circuit can set this code as a companion code.
- Intermittent low-voltage codes can be caused by water intrusion after a car wash or heavy rain, and the fault may not reappear until the connector dries out and corrodes further.
- A weak or failing 12-volt auxiliary battery can cause control modules to log false sensor codes, so battery condition and charging system health should be verified before deep circuit diagnosis.

Can I keep driving with P0AF4?

You can usually drive the vehicle short distances to a repair shop, but avoid heavy acceleration, long trips, or conditions that stress the hybrid system until the fault is repaired. If the vehicle enters limp mode or the hybrid system warning light flashes, stop driving and have it towed to prevent further damage.



Tools that help

- OBD-II scan tool with hybrid module access and live data capability
- Digital multimeter with back-probe pins and resistance measurement
- Manufacturer service information for wiring diagrams and sensor resistance charts
- Socket and wrench set for accessing inverter assembly connectors
- Contact cleaner and dielectric grease for connector service
- Insulated gloves and safety glasses for working around high-voltage hybrid components

Reading P0AF4

P	Powertrain: engine, transmission and emissions.
0	Generic (SAE) code: it means the same thing on every OBD-II vehicle.
A	Hybrid propulsion.
F4	The exact fault within that area.

Often seen with

P0A0D High Voltage System Interlock Circuit A High · **P0AF3** Drive Motor Inverter Temperature Sensor B Circuit Range/Perf · **P0AF5** Drive Motor Inverter Temperature Sensor B Circuit High · **P0AF6** Drive Motor Inverter Temperature Sensor B Circuit Intermitte · **P0AFA** Hybrid/EV Battery System Voltage 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/p0af4/>

