

GENERIC · POWERTRAIN

P0AB1

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0AB1

Hybrid/EV Battery Pack Air Temperature Sensor B Circuit

P0AB1 indicates that the hybrid or electric vehicle battery pack air temperature sensor B circuit has a fault, meaning the battery energy control module (BECM) has detected an abnormal voltage or signal from that sensor. The sensor monitors the temperature of the air used to cool or warm the high-voltage battery pack, and the circuit is used to ensure the pack operates within safe thermal limits.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Hybrid propulsion

Symptoms you may notice

- Illumination of the check engine light or service vehicle soon message
- Reduced hybrid system performance or limited power output
- Battery cooling fan may run continuously or not at all
- Possible decrease in fuel economy or electric range
- In some cases, the vehicle may enter a fail-safe mode limiting speed
- Often no symptoms besides the warning light

Common causes, most likely first

- 1 Faulty battery pack air temperature sensor B
- 2 Damaged or corroded wiring or connector at the sensor
- 3 Open or short circuit in the sensor signal or ground circuit
- 4 Failed battery energy control module (BECM) or hybrid control module
- 5 Airflow obstruction or debris affecting sensor reading (less common)
- 6 Extreme ambient temperatures causing sensor out-of-range (rare)



How to diagnose and fix it

- 1 Use a scan tool to retrieve all stored codes and freeze-frame data, then clear codes and test-drive to verify if P0AB1 returns
- 2 Visually inspect the sensor, wiring, and connectors for damage, corrosion, or loose pins
- 3 Measure sensor resistance and compare to manufacturer specifications (typically a negative temperature coefficient (NTC) thermistor)
- 4 Check for continuity and short circuits in the sensor signal and ground circuits between the sensor and the BECM
- 5 If wiring and sensor test good, substitute a known-good sensor to see if the code clears
- 6 If the sensor and wiring are confirmed good, diagnose the BECM or hybrid control module for internal faults
- 7 Replace the faulty sensor or repair wiring as needed, then clear codes and verify repair

Battery Temperature Sensor Circuit Pitfalls

- A common mistake is replacing the sensor without checking the wiring harness, as chafed or broken wires near the battery pack often cause this code.
- The sensor B circuit may share a common ground with other sensors, so a ground fault can set multiple temperature sensor codes simultaneously.
- On some vehicles, the battery pack air temperature sensor is part of a larger harness that requires removal of the battery pack cover, making it a labor-intensive job.
- The code can be set by a temporary condition such as a loose connector after battery service, so always check for recent repairs before condemning parts.
- A failing battery cooling fan or blocked air duct can cause the sensor to read out-of-range temperatures, indirectly setting this code even if the sensor itself is fine.

Can I keep driving with P0AB1?

It is generally safe to continue driving with P0AB1, but avoid aggressive driving or heavy loads that could stress the battery pack, and schedule a diagnosis soon to prevent potential battery overheating or reduced performance.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Wiring diagram for the specific vehicle
- Socket set and trim removal tools
- Temperature probe or infrared thermometer



Reading P0AB1

- P** Powertrain: engine, transmission and emissions.
- 0** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- A** Hybrid propulsion.
- B1** The exact fault within that area.

Often seen with

P0A9C Hybrid/EV Battery Temperature Sensor A Circuit Range/Perform · **P0AB0** Hybrid/EV Battery Pack Air Temperature Sensor A Circuit Inte · **P0AB2** Hybrid/EV Battery Pack Air Temperature Sensor B Circuit Rang · **P0AB3** Hybrid/EV Battery Pack Air Temperature Sensor B Circuit Low · **P0AC4** Hybrid/EV Powertrain Control Module Requested MIL Illuminati

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/p0ab1/>

