

GENERIC · POWERTRAIN

P0AAE

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0AAE

Hybrid/EV Battery Pack Air Temperature Sensor A Circuit Low

P0AAE means the hybrid or electric vehicle battery pack's air temperature sensor A is reporting a voltage below the normal range, which the battery energy control module interprets as an excessively cold or shorted sensor circuit. The computer has detected a low signal on the sensor's reference circuit, typically indicating a short to ground, an open sensor element, or a wiring fault rather than an actual cold battery.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Hybrid propulsion

Symptoms you may notice

- Illumination of the hybrid system warning light or service vehicle soon message
- Often no symptoms besides the warning light, especially in mild weather
- Reduced electric-only range or forced engine operation if the battery management system limits power
- A cooling fan that runs continuously or never engages because temperature feedback is lost
- In rare cases, a no-start condition or refusal to enter ready mode if the battery pack temperature is deemed invalid

Common causes, most likely first

- 1 Failed battery pack air temperature sensor A, where the internal thermistor has drifted or opened
- 2 Short to ground in the sensor signal wiring between the sensor and the battery energy control module
- 3 Corroded, loose, or damaged connector pins at the sensor or module harness
- 4 Chafed or pinched wire harness along the battery pack cooling duct or under the rear seat
- 5 Water intrusion into the sensor connector or battery pack enclosure causing a low-resistance path
- 6 Faulty battery energy control module, though this is far less common than sensor or wiring faults



How to diagnose and fix it

- 1 Connect a scan tool and record the freeze-frame data for P0AAE, noting the sensor A voltage and comparing it to other battery temperature sensors
- 2 Visually inspect the sensor A connector and harness for corrosion, moisture, or physical damage, then clean and reseat the connector
- 3 Measure the resistance of sensor A with a multimeter and compare it to the manufacturer's temperature-resistance chart for the ambient temperature
- 4 Backprobe the sensor signal circuit at the module connector and check for a short to ground with the sensor disconnected
- 5 Perform a wiggle test on the harness while watching live sensor data to reveal intermittent wiring faults
- 6 Replace the battery pack air temperature sensor A if resistance testing confirms it is out of specification
- 7 Clear the code and verify the repair by running the hybrid system through a full warm-up cycle and confirming sensor A reads realistically

What the low voltage reading really means

- A low signal code does not automatically mean the sensor is bad; a short to ground anywhere on the signal circuit will pull the voltage down and set the same code.
- Technicians often replace the sensor only to find the connector pins are pushed back or corroded, so always inspect the terminals before condemning the part.
- Battery pack air temperature sensors are thermistors, so their resistance rises as temperature falls; a disconnected sensor can read as a low voltage on some circuits depending on the bias resistor arrangement.
- This code can be set by a weak or failing 12-volt auxiliary battery that causes low reference voltage at the module, so check system voltage before chasing the sensor circuit.
- After any repair, the battery energy control module may need a learned temperature offset reset or a drive cycle before the code will clear permanently.

Can I keep driving with P0AAE?

You can usually continue driving short distances at moderate speeds, but avoid sustained high-speed driving or heavy electrical loads until the fault is repaired. If the hybrid system warning light is accompanied by reduced power or a refusal to start, stop driving and have the vehicle towed to avoid further battery pack stress.

Tools that help

- OBD-II scan tool with hybrid battery data capability
- Digital multimeter with resistance and voltage measurement
- Backprobe pins or fine test leads
- Manufacturer service information with temperature-resistance charts
- Basic hand tools for trim and connector removal



Reading P0AAE

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

Often seen with

P0A9C Hybrid/EV Battery Temperature Sensor A Circuit Range/Perform · **P0A9D** Hybrid/EV Battery Temperature Sensor A Circuit Low · **P0AAF** Hybrid/EV Battery Pack Air Temperature Sensor A Circuit High · **P0AB0** Hybrid/EV Battery Pack Air Temperature Sensor A Circuit Inte · **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/p0aae/>

