

GENERIC · POWERTRAIN

P0AD2

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0AD2

Hybrid/EV Battery Pack Cooling Fan 3 Control Circuit Low

P0AD2 indicates that the hybrid or electric vehicle battery pack cooling fan 3 control circuit has been detected as low by the battery energy control module. The module commands the fan on and monitors the circuit, and it sees voltage below the expected threshold, which points to a short to ground or an open circuit in the control wiring.

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 light
- Often no symptoms besides the warning light
- Reduced hybrid/EV battery cooling performance, potentially leading to power reduction
- Possible overheating warning message on the dash
- Fan may run continuously or not at all
- In some cases, the vehicle may enter a reduced power mode

Common causes, most likely first

- 1 Damaged or chafed wiring in the fan control circuit (short to ground)
- 2 Failed cooling fan 3 motor (internal short)
- 3 Corroded or loose electrical connector at the fan or control module
- 4 Faulty battery pack cooling fan control module
- 5 Open circuit in the control wire due to a broken wire or poor terminal tension
- 6 Water intrusion or debris causing a short in the fan connector

How to diagnose and fix it

- 1 Verify the code with a scan tool and check for any related codes in the battery cooling system
- 2 Inspect the fan 3 connector and wiring for corrosion, damage, or loose pins
- 3 Disconnect the fan and measure resistance across the fan motor terminals to check for an internal short
- 4 Check the control circuit for a short to ground using a multimeter with the key off
- 5 Test the control circuit for continuity and proper voltage from the control module
- 6 If wiring and fan are good, test the control module output with a scope or bidirectional scan tool
- 7 Replace the faulty component (fan, wiring, or module) and clear codes, then verify the fan operates correctly



Don't overlook the fan connector

- A common cause is a corroded connector at the fan motor, which can create a low-voltage condition on the control circuit without any visible damage to the fan itself.
- The code can set intermittently due to vibration or temperature changes, so a wiggle test of the harness while monitoring live data can reveal the fault.
- A failed fan motor can sometimes test good with a simple resistance check but still draw excessive current when powered, so a current ramp test is more reliable.
- This code does not always mean the fan is bad; the control module or the wiring often is the culprit, so avoid replacing the fan without proper diagnosis.
- On some vehicles, the battery cooling fan shares a ground with other components, and a bad ground can cause this code along with other unrelated symptoms.

Can I keep driving with P0AD2?

It is generally safe to drive with this code as long as the vehicle is not overheating or showing a reduced power warning, but avoid heavy loads or aggressive driving that increases battery heat. Have the system diagnosed soon to prevent battery damage from inadequate cooling.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Wire probe set
- Service information for wiring diagrams
- Bidirectional scan tool (if available)

Reading P0AD2

P	Powertrain: engine, transmission and emissions.
0	Generic (SAE) code: it means the same thing on every OBD-II vehicle.
A	Hybrid propulsion.
D2	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 · **P0AD0** Hybrid/EV Battery Pack Cooling Fan 3 Performance/Stuck Off · **P0AD1** Hybrid/EV Battery Pack Cooling Fan 3 Stuck On · **P0AD3** Hybrid/EV Battery Pack Cooling Fan 3 Control Circuit High



See it working

Watch the animated explainer [How a Radiator Fan Relay Circuit Works](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p0ad2/>

