



P2D4A

Hybrid/EV Battery Pack F Over Temperature

P2D4A indicates that the hybrid or electric vehicle battery pack designated 'F' has exceeded its safe operating temperature threshold, as reported by the battery energy control module. The computer detected this by comparing signals from temperature sensors within that pack against a calibrated limit, and it sets the code when the calculated or measured temperature remains too high.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Generic (all makes)	High	Professional	Hybrid propulsion

Symptoms you may notice

- A warning light or message on the dashboard indicating a hybrid system or high-voltage battery fault.
- Reduced electric-only driving range or a forced switch to the gasoline engine if the vehicle is a plug-in hybrid.
- A noticeable drop in available power or a limp-home mode that limits vehicle speed.
- The battery cooling fan or liquid cooling pump may run continuously or at maximum speed after shutdown.
- In some cases, no symptoms besides the warning light, especially if the over-temperature event was brief.
- Possible charging interruption or refusal to accept a charge on plug-in models.

Common causes, most likely first

- 1 A faulty battery temperature sensor or sensor circuit within pack F giving an artificially high reading.
- 2 Blocked or restricted airflow to the battery pack, such as a clogged cooling fan intake or debris in the ducting.
- 3 A failing battery cooling fan, coolant pump, or cooling system component that prevents proper heat rejection.
- 4 High ambient temperatures combined with sustained heavy loads, such as repeated fast charging or aggressive driving.
- 5 Degraded battery cells or an internal short within pack F that generates excess heat during normal operation.
- 6 A software calibration issue in the battery energy control module that misinterprets temperature data.
- 7 Low coolant level or a leak in a liquid-cooled battery thermal management system.



How to diagnose and fix it

- 1 Inspect the battery pack cooling system for obvious blockages, debris, or disconnected ducts, and verify that the cooling fan or pump operates when commanded.
- 2 Check the coolant level and condition if the pack is liquid-cooled, and pressure-test the system for leaks.
- 3 Use a scan tool to read live temperature sensor data from pack F and compare it with other packs or ambient temperature to identify a skewed sensor.
- 4 Perform a resistance and continuity test on the temperature sensor circuit, looking for open or shorted wiring and corroded connectors.
- 5 If the sensor reading is implausible, replace the suspect temperature sensor or harness as required by the manufacturer's procedure.
- 6 Verify that the battery energy control module has the latest software calibration and reflash it if an update is available.
- 7 If all cooling and sensor checks pass, perform a battery pack load test and capacity check to assess cell health and internal resistance.

What a hot battery pack really tells you

- A temperature sensor that reads high when the pack is actually cool is a common cause, so always compare sensor data across packs before condemning the battery itself.
- The code can be set by a brief over-temperature event during fast charging or heavy acceleration, and it may not return after the pack cools, leading some to wrongly replace the entire pack.
- On air-cooled packs, a clogged fan intake or a failed fan relay often triggers this code without any other drivability complaint.
- A low coolant level in a liquid-cooled system can cause localized hot spots that the sensor detects before the overall pack temperature rises noticeably.
- The battery energy control module may derate power or disable electric operation as a protective measure, so the driver may notice reduced performance before the warning light appears.

Can I keep driving with P2D4A?

Do not continue driving under heavy load or at high speed, because an overheated high-voltage battery can suffer permanent damage and, in extreme cases, pose a fire risk. Move the vehicle to a safe location, allow it to cool, and have the cooling system and sensors inspected before resuming normal use.

Tools that help

- Hybrid/EV-capable scan tool with live data and battery pack temperature PIDs
- Digital multimeter with temperature sensor testing capability
- Infrared thermometer for non-contact temperature verification
- Coolant pressure tester for liquid-cooled battery systems
- Manufacturer service information for battery pack cooling and sensor procedures



Reading P2D4A

- P** Powertrain: engine, transmission and emissions.
- 2** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- D** Hybrid propulsion.
- 4A** The exact fault within that area.

Often seen with

P0A9C Hybrid/EV Battery Temperature Sensor A Circuit Range/Perform · **P0AC4** Hybrid/EV Powertrain Control Module Requested MIL Illuminati · **P0AFA** Hybrid/EV Battery System Voltage Low · **P2D4B** Hybrid/EV Battery Pack G Over Temperature · **P2D4C** Hybrid/EV Battery Pack H Over Temperature

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/p2d4a/>

