

GENERIC · POWERTRAIN

P2D4B

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P2D4B

Hybrid/EV Battery Pack G Over Temperature

P2D4B indicates that the hybrid or electric vehicle battery pack, designated as pack G, has exceeded its safe operating temperature threshold as monitored by the battery energy control module. The computer detected this condition through temperature sensors within the pack and sets the code when the measured temperature rises above a calibrated limit, typically to protect the cells from damage.

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 fault or high battery temperature.
- Reduced power output or a limp-home mode as the vehicle limits current to cool the pack.
- The internal combustion engine may run more frequently or continuously in a hybrid to reduce battery load.
- Possible shutdown of the hybrid system or inability to start in electric-only mode.
- Often no symptoms besides the warning light, especially if the over-temperature event was brief.
- A burning or hot odor from the battery area in severe cases, though this is less common.

Common causes, most likely first

- 1 A faulty battery temperature sensor providing inaccurate high readings.
- 2 Restricted airflow or a failed cooling fan in the battery pack cooling system.
- 3 Low coolant level or a leak in a liquid-cooled battery thermal management system.
- 4 A clogged or degraded cabin air filter that reduces cooling airflow to the battery.
- 5 High ambient temperatures combined with aggressive driving or heavy electrical loads.
- 6 Internal battery degradation causing increased heat generation during charge or discharge.
- 7 A malfunctioning battery energy control module misinterpreting sensor data.



How to diagnose and fix it

- 1 Use a scan tool to retrieve the freeze-frame data and verify the actual battery temperature readings against other sensors.
- 2 Inspect the battery cooling system for obvious blockages, debris, or disconnected ducts, and check the cooling fan operation.
- 3 Check the coolant level and condition in liquid-cooled systems, and pressure-test for leaks if the level is low.
- 4 Test the battery temperature sensors with a multimeter and compare their resistance values to specifications.
- 5 Perform a battery pack inspection for physical damage, swelling, or corrosion on connections.
- 6 If sensor or cooling issues are ruled out, conduct a battery pack capacity and internal resistance test to assess degradation.
- 7 Repair or replace the faulty component, clear the code, and road-test the vehicle to confirm the over-temperature condition is resolved.

Overheating battery pack myths and realities

- A P2D4B code can be set by a temporary over-temperature event during fast charging or heavy load, and may not indicate a permanent fault if the cooling system recovers.
- Many technicians replace the battery pack prematurely when the actual cause is a \$20 temperature sensor or a blocked cooling fan.
- The code specifically refers to pack G, so on vehicles with multiple battery packs, misdiagnosis can occur if the wrong pack is inspected.
- High ambient temperatures alone rarely trigger this code unless combined with a cooling system fault or aggressive driving.
- After any repair, the battery energy control module may require a relearn or calibration procedure to reset adaptive learning values.

Can I keep driving with P2D4B?

Do not continue driving if the high battery temperature warning is active, as continued operation can lead to permanent battery damage or a safety hazard. Stop in a safe location, allow the vehicle to cool, and seek professional diagnosis before driving further.

Tools that help

- OBD-II scan tool with hybrid/EV capability
- Infrared thermometer
- Digital multimeter
- Coolant pressure tester
- Battery pack diagnostic software



Reading P2D4B

- P** Powertrain: engine, transmission and emissions.
- 2** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- D** Hybrid propulsion.
- 4B** 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 · **P2D4A** Hybrid/EV Battery Pack F 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/p2d4b/>

