

GENERIC · POWERTRAIN

P2D4D

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P2D4D

Hybrid/EV Battery Pack I Over Temperature

This code means the high-voltage battery pack in a hybrid or electric vehicle has exceeded its safe temperature limit, as reported by the battery energy control module. The computer detected the pack temperature sensor reading above a calibrated threshold, which triggers the warning and may force the system into a reduced-power mode to protect the cells.

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

Symptoms you may notice

- A dashboard warning light or message indicating a hybrid or EV battery problem, often accompanied by a chime.
- Reduced power output or a 'turtle' mode that limits vehicle speed and acceleration.
- The vehicle may refuse to start or may shut down unexpectedly while driving.
- The battery cooling fan or pump may run continuously or unusually loud after shutdown.
- Often no symptoms besides the warning light, especially if the over-temperature event was brief.
- In some cases, the cabin may feel warm or the air conditioning may struggle if the battery cooling system shares components.

Common causes, most likely first

- Low or contaminated battery coolant, or a coolant leak in the battery thermal management loop.
- A failed battery cooling fan, pump, or radiator that prevents heat rejection from the pack.
- A faulty battery temperature sensor providing an inaccurate high reading.
- Restricted airflow to the battery pack due to debris, damaged ducts, or blocked vents.
- A failing battery energy control module or wiring issue in the sensor circuit.
- Aggressive driving or repeated fast charging in high ambient temperatures that overwhelms the cooling system.
- Internal battery cell degradation causing excessive heat generation under load.



How to diagnose and fix it

- 1 Scan all modules for stored codes and freeze-frame data to confirm the over-temperature event and check for related cooling system codes.
- 2 Inspect the battery cooling system for coolant level, leaks, and proper operation of the coolant pump and fan.
- 3 Check the battery temperature sensor readings with a scan tool and compare them to actual pack temperature using an infrared thermometer if accessible.
- 4 Verify airflow to the battery pack: inspect ducts, vents, and the cooling fan for obstructions or damage.
- 5 Test the battery cooling fan and pump circuits for power, ground, and control signals; replace failed components as needed.
- 6 If the cooling system is functioning, perform a battery pack load test and cell balance check to rule out internal degradation.
- 7 Clear codes and road-test the vehicle under load while monitoring battery temperature to confirm the repair.

What a battery over-temperature code really tells you

- A P2D4D code often sets because of a simple cooling system fault, such as a stuck thermostat or a failed fan, rather than a failing battery pack itself.
- The battery temperature sensor can fail in a way that reports a high temperature when the pack is actually cool, leading to unnecessary battery replacement if not tested properly.
- High ambient temperatures and repeated fast charging can trigger this code even on a healthy battery, so driving habits and climate matter.
- Some vehicles use the air conditioning system to cool the battery, so a refrigerant leak or weak A/C performance can indirectly cause this code.
- After a repair, the battery may need a relearn or calibration procedure, and the code may not clear immediately until the system sees normal temperatures over a drive cycle.

Can I keep driving with P2D4D?

Do not continue driving with this code active, because an overheated high-voltage battery can suffer permanent damage and may pose a safety risk. Stop in a safe place, allow the vehicle to cool, and have it inspected by a qualified technician before driving further.

Tools that help

- OBD-II scan tool with hybrid/EV battery data capability
- Infrared thermometer
- Digital multimeter
- Coolant refractometer or tester
- Battery cooling system pressure tester
- Factory service information for battery cooling system specifications



Reading P2D4D

- P** Powertrain: engine, transmission and emissions.
- 2** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- D** Hybrid propulsion.
- 4D** 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 · **P2D4E** Hybrid/EV Battery Pack J 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/p2d4d/>

