

GENERIC · POWERTRAIN

**P2D48**

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

## P2D48

# Hybrid/EV Battery Pack D Over Temperature

P2D48 indicates that the battery pack designated 'D' in a hybrid or electric vehicle has exceeded its safe temperature threshold, as detected by the battery energy control module through temperature sensors. The computer sets this code when the pack temperature rises above the calibrated limit, triggering a warning and often limiting power to protect the cells.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

High

FIX DIFFICULTY

Professional

AREA

Hybrid propulsion

## Symptoms you may notice

- A warning light or message on the dashboard indicating a hybrid system or battery temperature fault
- Reduced power output or a limp-home mode, especially during heavy acceleration or uphill driving
- The vehicle may refuse to start or enter a 'ready' state if the battery temperature is too high
- Active cooling fans or pumps may run continuously or at maximum speed after shutdown
- Often no symptoms besides the warning light, particularly if the over-temperature event was brief and has since resolved

## Common causes, most likely first

- 1 Low or contaminated coolant in the battery thermal management loop, reducing heat rejection
- 2 A failed coolant pump or restricted coolant passage preventing proper circulation through the pack
- 3 A faulty battery temperature sensor or its wiring, sending an erroneous high-temperature signal
- 4 Blocked or damaged cooling fins/ducts on air-cooled battery packs, or a failed cooling fan
- 5 Degraded battery cells with increased internal resistance generating excess heat under load
- 6 A software calibration issue in the battery energy control module causing premature over-temperature detection
- 7 Extreme ambient temperatures combined with sustained high-load operation overwhelming the cooling system



## How to diagnose and fix it

- 1 Scan all modules for stored and pending codes, and record freeze-frame data for P2D48 to see the temperature and load conditions at the time of the fault
- 2 Visually inspect the battery pack cooling system: check coolant level, condition, and for leaks; verify fan operation and duct integrity on air-cooled systems
- 3 Use a scan tool to compare battery temperature sensor readings against actual pack temperature (using an infrared thermometer or manufacturer data) to identify a skewed sensor
- 4 Test the coolant pump and thermostat operation, and confirm coolant flow through the battery heat exchanger or chiller
- 5 Check for software updates or calibration bulletins from the manufacturer that address battery temperature thresholds
- 6 If sensors and cooling system are correct, perform a battery health check with a capable diagnostic tool to assess cell balance and internal resistance
- 7 Replace the faulty component (sensor, pump, fan, or battery pack) only after confirming the root cause with live data and physical testing

## Don't assume the battery pack is failing

- A surprising number of P2D48 codes are caused by a simple low coolant level in the battery cooling loop, which is often overlooked because the engine coolant reservoir may appear full.
- On air-cooled packs, a blocked intake filter or debris in the cooling ducts can cause over-temperature only under sustained load, so the code may not reappear during a short test drive.
- A faulty temperature sensor can report a high temperature when the pack is actually cool, leading to unnecessary battery replacement if the sensor signal is not verified against an independent measurement.
- The code can be set by a brief over-temperature event during fast charging or aggressive driving, and may not indicate a permanent fault if the cooling system recovers and the code does not return after clearing.
- Some vehicles use the same temperature sensor for multiple battery modules, so a single sensor fault can affect the reading for the entire pack 'D' and trigger this code even if only one area is hot.

## Can I keep driving with P2D48?

Do not continue driving under high load or at high ambient temperatures, as overheating the battery pack can cause permanent cell damage or a safety hazard. Limit driving to a short distance to a safe location or workshop, and avoid fast charging or aggressive acceleration until the fault is repaired.



## Tools that help

- OBD-II scan tool with hybrid/EV battery data capability
- Infrared thermometer
- Digital multimeter
- Manufacturer service information and wiring diagrams
- Coolant refractometer or tester
- Battery health diagnostic software

## Reading P2D48

|           |                                                                      |
|-----------|----------------------------------------------------------------------|
| <b>P</b>  | Powertrain: engine, transmission and emissions.                      |
| <b>2</b>  | Generic (SAE) code: it means the same thing on every OBD-II vehicle. |
| <b>D</b>  | Hybrid propulsion.                                                   |
| <b>48</b> | 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 · **P2D47** Hybrid/EV Battery Pack C Over Temperature · **P2D49** Hybrid/EV Battery Pack E 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/p2d48/>

