

GENERIC · POWERTRAIN

P2D46

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P2D46

Hybrid/EV Battery Pack B Over Temperature

P2D46 indicates that the battery management system has detected an excessive temperature in hybrid or electric vehicle battery pack B, which is typically the second high-voltage battery assembly in a multi-pack configuration. The computer compares temperature sensor readings against calibrated limits and sets this code when the pack exceeds its safe operating threshold, often triggering power reduction to protect the cells.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

High

FIX DIFFICULTY

Professional

AREA

Hybrid propulsion

Symptoms you may notice

- Illuminated hybrid or EV system warning light, often accompanied by a reduced power message
- Noticeable drop in acceleration or a limp-home mode after sustained driving or fast charging
- Active cooling fans running continuously or unusually loud after the vehicle is shut off
- Reduced or disabled fast-charging capability, with the vehicle refusing high-rate DC charging
- A burning or hot-plastic smell from the battery area in severe cases
- Often no symptoms besides the warning light when the over-temperature event was brief

Common causes, most likely first

- 1 Degraded or failed battery pack cooling fan, coolant pump, or ductwork restricting airflow over the pack
- 2 Low or contaminated battery coolant in a liquid-cooled pack, or a blocked coolant passage
- 3 A faulty battery temperature sensor reporting falsely high readings to the battery management system
- 4 High ambient temperatures combined with repeated fast charging or aggressive driving without cool-down
- 5 Internal cell degradation or a failing module generating excess heat under load
- 6 Restricted airflow from debris, damaged underbody shields, or a blocked cabin-to-pack cooling vent
- 7 A battery management system software fault or corrupted calibration causing premature over-temperature flags



How to diagnose and fix it

- 1 Scan all modules and record freeze-frame data for P2D46, noting which temperature sensor and pack triggered the fault
- 2 Inspect the battery pack cooling system for blocked ducts, debris, damaged fans, and coolant level or condition
- 3 Command the cooling fan and coolant pump with a scan tool to verify they operate at all speed ranges
- 4 Compare individual battery temperature sensor readings against each other and against ambient temperature to isolate a faulty sensor
- 5 Perform a battery pack health check with manufacturer-specific diagnostics, reviewing cell voltage balance and internal resistance
- 6 Check for and install any available battery management system software updates or recalibration procedures
- 7 If a sensor or cooling component is confirmed faulty, replace it and clear the code, then road-test under load to verify the repair

Over-temperature codes that are not the pack's fault

- A failed cooling fan or a stuck thermostat in the battery coolant loop is far more common than an actual failing battery pack, so verify cooling performance before condemning the pack.
- Temperature sensor wiring chafing or a corroded connector can produce intermittent high readings that mimic a genuine over-temperature event, especially after rain or car washes.
- Repeated fast charging in hot weather can set this code even on a healthy pack, and the fix may simply be a charging strategy change rather than a repair.
- Some vehicles set P2D46 as a companion code when the 12-volt system voltage is low, because the battery management system misreads sensor data during brownout conditions.
- Clearing the code without addressing the root cause often results in a repeat within days, and each over-temperature event accelerates cell degradation.

Can I keep driving with P2D46?

Stop driving and allow the vehicle to cool if the warning light is accompanied by reduced power or a hot smell, because continued operation can permanently damage the high-voltage battery. If the light is on but the vehicle drives normally, avoid fast charging and heavy loads, and have it diagnosed promptly.

Tools that help

- OBD-II scan tool with hybrid/EV battery data and bidirectional control capability
- Infrared thermometer for checking pack and coolant temperatures
- Manufacturer-specific diagnostic software for battery management system access
- Digital multimeter for sensor and wiring checks
- Coolant refractometer or tester for liquid-cooled packs



Reading P2D46

- P** Powertrain: engine, transmission and emissions.
- 2** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- D** Hybrid propulsion.
- 46** 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 · **P2D45** Reductant Temperature Too Low · **P2D47** Hybrid/EV Battery Pack C 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/p2d46/>

