



P0CAE

Hybrid/EV Battery Temperature Sensor N Range/Performance

P0CAE indicates that the hybrid or electric vehicle battery pack's temperature sensor 'N' is reporting a signal that is outside the expected range or is not performing as designed. The battery energy control module compares this sensor's reading against other temperature sensors and expected values, and it sets this code when the signal is implausible, intermittent, or stuck within a range that does not match reality.

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

Symptoms you may notice

- Illumination of the hybrid system warning light or service vehicle soon message
- Reduced electric-only driving range or forced engine operation in a plug-in hybrid
- A noticeable drop in battery charging performance or slower DC fast charging
- The vehicle may enter a reduced power mode or fail to start in extreme cases
- Often no symptoms besides the warning light, especially if the fault is intermittent
- In some vehicles, the cabin or battery cooling fan may run excessively or not at all

Common causes, most likely first

- 1 Faulty battery temperature sensor N itself, due to internal failure or contamination
- 2 Damaged or chafed wiring harness between the sensor and the battery control module
- 3 Corroded or loose electrical connector at the sensor or module
- 4 High-voltage battery pack overheating from a cooling system fault, such as low coolant or a failed fan
- 5 Software error in the battery energy control module requiring a recalibration or update
- 6 Internal fault in the battery energy control module affecting sensor reference voltage
- 7 Physical damage to the sensor or its mounting from impact or improper battery service



How to diagnose and fix it

- 1 Use a scan tool to retrieve all stored codes and freeze-frame data, then verify the sensor N reading against other battery temperature sensors with the key on and engine off.
- 2 Visually inspect the sensor N wiring harness and connector for chafing, corrosion, or loose pins, and repair as needed.
- 3 Measure the resistance of sensor N with a multimeter and compare it to the manufacturer's temperature-resistance chart for the current battery temperature.
- 4 Check the high-voltage battery cooling system for proper operation, including coolant level, fan operation, and coolant pump function.
- 5 Perform a wiggle test on the sensor N harness while monitoring live data to catch intermittent faults.
- 6 If the sensor and wiring test good, check for technical service bulletins or software updates for the battery energy control module.
- 7 Replace the faulty battery temperature sensor N, clear the codes, and verify the repair with a road test and live data monitoring.

Battery temperature sensor N pitfalls

- A common misdiagnosis is replacing the battery pack when only one temperature sensor has failed, so always test the sensor and its circuit before condemning the pack.
- Intermittent faults often stem from a chafed wire near the battery pack mounting point, which can be missed if the harness is only inspected visually without a wiggle test.
- The code can be set by a cooling system fault that causes the battery to overheat, so ignoring the cooling system can lead to a repeat failure even after sensor replacement.
- Some vehicles use a single sensor to represent a group of cells, so a fault in that sensor can affect the temperature reading for multiple modules and trigger additional codes.
- A weak 12-volt auxiliary battery can cause erratic sensor readings and set this code, so always verify the 12-volt system is healthy before diving into high-voltage diagnostics.

Can I keep driving with P0CAE?

It is generally safe to drive with this code if the vehicle is not in a reduced power mode and the battery temperature gauge is not in the red, but avoid aggressive driving, heavy loads, and DC fast charging until the fault is repaired. If the hybrid system warning light is flashing or the vehicle limits speed, stop driving and seek professional service.



Tools that help

- OBD-II scan tool with live data and graphing capability
- Digital multimeter with temperature probe
- Manufacturer-specific service information for temperature-resistance charts
- Insulation resistance tester for high-voltage circuits
- Basic hand tools for connector and harness inspection

Reading P0CAE

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

Often seen with

P0CAB Hybrid/EV Battery Temperature Sensor M Circuit High · **P0CAC** Hybrid/EV Battery Temperature Sensor M Circuit Intermittent/ · **P0CAD** Hybrid/EV Battery Temperature Sensor N Circuit · **P0CAF** Hybrid/EV Battery Temperature Sensor N Circuit Low · **P0CB0** DC/DC Converter Voltage Below Threshold

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/p0cae/>

