

GENERIC · POWERTRAIN

P0C8A

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0C8A

Hybrid/EV Battery Temperature Sensor I Circuit Low

P0C8A indicates that the hybrid or electric vehicle battery pack's temperature sensor circuit, specifically sensor number one, is reporting a voltage lower than the manufacturer's expected range. The battery energy control module monitors this signal to protect the high-voltage battery from overheating or overcooling, and it sets this code when the voltage on the sensor signal circuit stays below the calibrated minimum for a set period.

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

Symptoms you may notice

- Illumination of the check engine light or a dedicated hybrid system warning light
- Often no symptoms besides the warning light, especially if the sensor fault is intermittent
- Reduced electric-only driving range or the vehicle refusing to enter EV mode
- A message on the dash indicating the hybrid battery is too hot or too cold
- Possible reduced engine power or limited hybrid system operation in severe cases
- The cooling fan for the battery pack may run continuously or not at all

Common causes, most likely first

- 1 A failed battery temperature sensor with an open or shorted internal element
- 2 Damaged or chafed wiring between the sensor and the battery energy control module
- 3 Corroded or loose connector pins at the sensor or module harness
- 4 A short to ground on the sensor signal circuit
- 5 A faulty battery energy control module not reading the sensor voltage correctly
- 6 Moisture intrusion into the sensor connector or harness causing low resistance
- 7 Physical damage to the sensor from impact or prior battery service



How to diagnose and fix it

- 1 Retrieve all stored codes and freeze-frame data, then clear codes and test-drive to see if P0C8A returns immediately or only under specific conditions
- 2 Visually inspect the battery temperature sensor, its connector, and the harness for chafing, corrosion, or moisture, repairing any obvious damage
- 3 Measure the sensor's resistance with a multimeter and compare it to the manufacturer's temperature-resistance chart to confirm the sensor is in spec
- 4 Back-probe the sensor signal circuit at the module connector and check for a short to ground or an abnormally low voltage with the key on
- 5 Perform a voltage drop test on the sensor ground circuit to rule out a poor ground connection
- 6 If the wiring and sensor check out, substitute a known-good sensor or use a signal generator to verify the module responds correctly before replacing the module
- 7 Replace the faulty sensor or repair the harness, clear codes, and verify the temperature reading on a scan tool matches ambient temperature after a cold soak

What a low battery temp signal really means

- A low voltage on the signal circuit often means the sensor has failed open, but a short to ground on the harness can produce the exact same code and is frequently missed when only the sensor is replaced.
- The battery energy control module may set P0C8A as a default when it loses communication with the sensor, so a communication fault elsewhere in the hybrid CAN network can masquerade as a sensor circuit problem.
- On many hybrids, the battery temperature sensor is part of a combined harness inside the pack, so a simple sensor replacement may require removing the high-voltage battery assembly, which is not a DIY job.
- A weak 12-volt auxiliary battery can cause the module to log false low-voltage sensor codes, so always check system voltage and charging before condemning the sensor.
- After repairs, the code may not clear until the module sees a valid temperature signal through a complete ignition cycle, so a quick key-off and restart is not enough to confirm the fix.

Can I keep driving with P0C8A?

You can usually drive the vehicle short distances to a repair shop, but avoid heavy acceleration, prolonged high-speed driving, and extreme ambient temperatures because the module may not be able to protect the battery without a valid temperature reading. If the dash displays a high-voltage battery overheating warning or the vehicle enters limp mode, stop driving and have it towed.



Tools that help

- OBD-II scan tool with hybrid battery data capability
- Digital multimeter with resistance and voltage measurement
- Back-probe kit or breakout box for module connector testing
- Manufacturer service information for temperature-resistance charts and wiring diagrams
- Insulated hand tools and personal protective equipment for high-voltage safety

Reading P0C8A

P	Powertrain: engine, transmission and emissions.
0	Generic (SAE) code: it means the same thing on every OBD-II vehicle.
C	Hybrid propulsion.
8A	The exact fault within that area.

Often seen with

P0A0D High Voltage System Interlock Circuit A High · **P0AFA** Hybrid/EV Battery System Voltage Low · **P0C88** Hybrid/EV Battery Temperature Sensor I Circuit · **P0C89** Hybrid/EV Battery Temperature Sensor I Range/Performance · **P0C8B** Hybrid/EV Battery Temperature Sensor I Circuit High

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/p0c8a/>

