

GENERIC · POWERTRAIN

P2E6D

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P2E6D

Hybrid/EV Battery Pack A Cell Thickness Sensor Circuit High

P2E6D indicates that the battery energy control module (BECM) has detected an abnormally high voltage on the cell thickness sensor circuit for hybrid/EV battery pack A. The sensor monitors physical swelling or expansion of the battery cells, and a high signal typically means an open circuit, a short to voltage, or a sensor fault rather than actual cell swelling.

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 hybrid system warning light, often with no other noticeable symptoms.
- Reduced electric-only range or forced engine operation if the vehicle enters a fail-safe mode.
- A message on the dash indicating a hybrid battery fault or service required.
- In rare cases, a burning smell or visible battery pack deformation if the sensor is responding to actual cell swelling.
- Intermittent warning light activation over bumps or during temperature changes if the circuit has a loose connection.

Common causes, most likely first

- 1 Open circuit in the cell thickness sensor signal wire, such as a broken wire or disconnected connector.
- 2 Short to voltage on the sensor signal circuit, often from chafed wiring harness insulation.
- 3 Faulty cell thickness sensor internal failure, causing a fixed high resistance or open output.
- 4 Corroded or loose electrical connector pins at the sensor or battery pack interface.
- 5 Battery energy control module (BECM) internal fault misreading the sensor input.
- 6 Actual battery cell swelling that has pushed the sensor beyond its normal range, though this is less common than circuit faults.



How to diagnose and fix it

- 1 Inspect the cell thickness sensor connector and wiring for damage, corrosion, or loose pins, and repair as needed.
- 2 Measure the sensor signal voltage with a multimeter and compare to the manufacturer's specification to confirm the high condition.
- 3 Disconnect the sensor and check for an open or short in the signal circuit using a wiring diagram and continuity tests.
- 4 Substitute a known-good sensor or simulate the signal with a resistor box to see if the code changes, isolating the sensor from the circuit.
- 5 Check the BECM connectors and grounds for integrity, and verify power and ground supplies to the module.
- 6 If the circuit and sensor test good, follow the manufacturer's diagnostic flow for BECM testing or reprogramming.
- 7 Clear the code after repairs and perform a road test to confirm the fault does not return.

High voltage does not always mean swelling

- A high signal on a cell thickness sensor circuit is most often caused by an open circuit or a short to voltage, not by actual battery cell expansion.
- Technicians sometimes replace the battery pack unnecessarily when the real problem is a chafed wire or corroded connector in the sensor circuit.
- The cell thickness sensor is part of the high-voltage battery assembly, so safe servicing requires de-energizing the high-voltage system and following manufacturer procedures.
- In some vehicles, the BECM may set this code if the sensor signal is out of range during self-test, even if the sensor later tests normal, so intermittent faults need wiggle tests and freeze-frame data review.
- Related codes for other cell thickness sensors or battery voltage sensors may also be present, indicating a shared wiring or module issue rather than a single sensor failure.

Can I keep driving with P2E6D?

If the only symptom is a warning light and the vehicle drives normally, you can drive cautiously to a service location, but avoid aggressive acceleration or charging until diagnosed. If the vehicle enters a reduced-power mode or shows a battery fault message, stop driving and have it towed to avoid potential high-voltage hazards.

Tools that help

- OBD-II scan tool with live data and freeze-frame capability
- Digital multimeter with voltage and resistance measurement
- Manufacturer-specific wiring diagrams and service information
- Insulated hand tools and personal protective equipment for high-voltage safety
- Resistor box or sensor simulator for circuit testing



Reading P2E6D

- P** Powertrain: engine, transmission and emissions.
- 2** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- E** Hybrid propulsion.
- 6D** The exact fault within that area.

Often seen with

P0A1F Battery Energy Control Module A Performance · **P0AFA** Hybrid/EV Battery System Voltage Low · **P0B24** Hybrid/EV Battery A Voltage Unstable · **P2E6C** Hybrid/EV Battery Pack A Cell Thickness · **P2E6E** Hybrid/EV Battery Pack A Cell Thickness Sensor Circuit Low

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/p2e6d/>

