

GENERIC · POWERTRAIN

P2E6E

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P2E6E

Hybrid/EV Battery Pack A Cell Thickness Sensor Circuit Low

This code indicates that the hybrid or electric vehicle battery pack's cell thickness sensor circuit is reporting a voltage below the expected range. The battery energy control module monitors this sensor to detect swelling or deformation of individual cells, and it sets the code when the signal stays too low for a calibrated time.

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 check engine light
- Often no symptoms besides the warning light
- Reduced electric-only driving range or power output
- The vehicle may enter a fail-safe mode limiting acceleration
- In rare cases, a noticeable bulge or deformation of the battery pack casing
- Possible charging system warnings or inability to charge

Common causes, most likely first

- 1 Failed cell thickness sensor or its internal circuitry
- 2 Damaged or chafed wiring between the sensor and the battery control module
- 3 Corroded or loose electrical connector at the sensor
- 4 Water intrusion or contamination in the sensor connector
- 5 Internal battery pack deformation pressing on the sensor
- 6 Faulty battery energy control module (less common)
- 7 Software calibration issue in the control module (rare)



How to diagnose and fix it

- 1 Inspect the sensor connector and wiring for damage, corrosion, or loose pins
- 2 Measure the sensor circuit voltage and compare to manufacturer specifications
- 3 Perform a wiggle test on the harness while monitoring sensor data to reveal intermittent faults
- 4 Check for technical service bulletins (TSBs) or software updates for the battery control module
- 5 Replace the cell thickness sensor if voltage readings are out of range
- 6 Repair or replace damaged wiring and connectors as needed
- 7 If the fault persists, diagnose the battery energy control module and battery pack integrity

Before condemning the battery pack

- A low voltage reading often comes from a simple connector issue rather than a failed sensor, so always check the pins and seals first.
- The cell thickness sensor is part of the high-voltage battery assembly, and on many vehicles it is not serviced separately, requiring pack replacement if faulty.
- This code can be set by a momentary voltage drop during cranking or a low 12-volt battery, so verify the auxiliary battery condition before deeper diagnosis.
- Some manufacturers use a shared reference voltage for multiple sensors, and a short in another sensor can pull the thickness sensor signal low.
- After repairs, the code may require a battery pack calibration or relearn procedure to clear and stay off.

Can I keep driving with P2E6E?

You can usually drive the vehicle with this code, but avoid aggressive acceleration or high-speed driving because the system may limit power. Have the fault diagnosed soon to prevent potential battery pack damage or a no-start condition.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Wiring diagram for the specific vehicle
- Insulation resistance tester (megohmmeter)
- Battery terminal and connector cleaning tools



Reading P2E6E

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

Often seen with

P0A95 High Voltage Fuse A · **P0AFA** Hybrid/EV Battery System Voltage Low · **P0B24** Hybrid/EV Battery A Voltage Unstable · **P2E6D** Hybrid/EV Battery Pack A Cell Thickness Sensor Circuit High · **P2E6F** Hybrid/EV Battery Pack A Cell Thickness Sensor Circuit Perfo

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/p2e6e/>

