

GENERIC · POWERTRAIN

P2E33

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P2E33

Battery Charger A Module Forced Shutdown Voltage Low

P2E33 indicates that the battery charger control module has commanded a forced shutdown because it detected the high-voltage battery pack voltage dropping below a safe minimum threshold. The module logs this code when the charger's output cannot maintain the required voltage, often due to a weak cell, a failing charger, or a wiring fault, and it shuts down to prevent over-discharge or damage.

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

Symptoms you may notice

- The hybrid or electric vehicle may fail to charge or stop charging unexpectedly.
- A warning light or message on the dash indicating a charging system fault.
- Reduced electric driving range or the vehicle switching to gasoline power sooner than normal.
- The charging session may abort with a notification on the charging station or vehicle display.
- Often no symptoms besides the warning light if the shutdown was a one-time event.

Common causes, most likely first

- A weak or failing high-voltage battery cell causing voltage to sag under charge load.
- Faulty battery charger module internal electronics or software glitch.
- Corroded, loose, or damaged high-voltage wiring between the charger and battery pack.
- A malfunctioning battery management system (BMS) reporting incorrect voltage data.
- Extreme ambient temperatures causing the charger to derate and trigger a low-voltage shutdown.
- A ground fault or insulation fault in the high-voltage system.



How to diagnose and fix it

- 1 Connect a scan tool and record all freeze-frame data and related codes before clearing anything.
- 2 Inspect the high-voltage charging port, cables, and connectors for corrosion, damage, or loose pins.
- 3 Perform a battery pack voltage check with a high-voltage rated meter and compare to the charger's reported voltage.
- 4 Test the charger module's output under load using the manufacturer's diagnostic procedure.
- 5 Check for software updates or technical service bulletins for the charger module.
- 6 If voltage sag is confirmed, perform a battery cell balance test or capacity test as per service information.
- 7 Replace the faulty charger module or battery pack components only after confirming the root cause with voltage measurements.

What the forced shutdown really means

- A forced shutdown voltage low code often sets because the charger is protecting the battery from over-discharge, not because the charger itself has failed.
A weak cell in the high-voltage pack can cause this code even when the charger and wiring are perfect, so always load-test the battery before replacing the charger.
- Intermittent codes can be caused by a poor high-voltage ground connection that only acts up under vibration or temperature changes.
- Some vehicles set this code after a charging session is interrupted by a power outage or a charging station fault, and no repair is needed beyond clearing the code.
The battery management system may report a voltage that differs from the charger's measurement due to sensor drift, leading to a misdiagnosis of the charger.

Can I keep driving with P2E33?

You can usually drive the vehicle if the code is stored and the car still runs, but avoid long trips and do not rely on electric-only mode until the fault is repaired. If the vehicle enters limp mode or refuses to start, have it towed to a qualified technician.

Tools that help

- OBD-II scan tool with hybrid/EV capability
- High-voltage multimeter (CAT III rated)
- Insulation tester
- Manufacturer service information and wiring diagrams
- Battery load tester or capacity tester



Reading P2E33

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

Often seen with

P0A94 DC/DC Converter A Performance · **P0AFA** Hybrid/EV Battery System Voltage Low · **P2E34** Battery Charger A Module Forced Shutdown Voltage High · **P2E35** Battery Charger B Enable Circuit/Open

See it working

Watch the animated explainer [Readiness Monitors and the OBD-II Drive Cycle](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p2e33/>

