



P2E2D

Battery Charger A Module Supply Voltage Low

P2E2D indicates that the powertrain control module has detected a low supply voltage at the battery charger control module designated as 'A'. The computer monitors the voltage feed to this module and sets the code when the signal falls below the expected threshold for a calibrated time, pointing to a power delivery problem rather than a charging output fault.

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

Symptoms you may notice

- Illumination of the check engine light or service vehicle soon message with no other noticeable change in driving behavior.
- The battery charger module may fail to activate, leaving the high-voltage battery at a lower state of charge than normal.
- A warning message on the instrument cluster indicating a charging system fault or reduced electric range.
- Intermittent operation of the battery charger, where charging starts and stops unpredictably.
- The vehicle may enter a reduced power mode or refuse to start if the low voltage persists and depletes the auxiliary battery.
- Often no symptoms besides the warning light, especially if the fault is intermittent and the module still receives enough voltage to function.

Common causes, most likely first

- 1 A weak or failing 12-volt auxiliary battery that cannot maintain stable voltage under load.
- 2 Corroded, loose, or damaged wiring and connectors on the power supply circuit to the battery charger module.
- 3 A blown fuse or tripped fusible link in the dedicated supply circuit for the charger module.
- 4 High resistance in a ground connection shared by the charger module and the chassis.
- 5 An internal fault in the battery charger module causing excessive current draw or a short on its supply input.
- 6 Voltage drop across a relay or contactor that feeds the charger module, often due to pitted contacts.
- 7 A charging system fault, such as a failing alternator or DC-DC converter, that drains the entire 12-volt supply low.



How to diagnose and fix it

- 1 Perform a battery test with a conductance tester and load test the 12-volt auxiliary battery; replace it if it fails.
- 2 Inspect and clean the battery terminals, then check the dedicated fuse and relay for the battery charger module supply circuit.
- 3 Measure voltage at the charger module connector with the key on and compare it to battery voltage; a difference greater than 0.5 volts indicates excessive voltage drop.
- 4 Perform a voltage drop test on both the positive supply wire and the ground circuit while the module is commanded on.
- 5 Check for technical service bulletins or software updates for the charger module that address low-voltage supply thresholds.
- 6 If all wiring and power sources test good, substitute a known-good charger module or perform a guided diagnostic using the manufacturer's scan tool to confirm an internal module fault.

Low voltage does not always mean a bad module

- A common misdiagnosis is replacing the battery charger module when the real culprit is a corroded ground strap or a failing 12-volt battery that sags under load.
- The code can be set by a momentary voltage dip during engine cranking, so always check for a weak battery before condemning the charger.
- Some vehicles use a dedicated voltage stabilizer or capacitor on the charger supply circuit, and a failed stabilizer will set this code without any wiring fault.
- A charger module that is internally shorted can pull the supply voltage low and set P2E2D, but it may also cause the fuse to blow repeatedly, so check for a shorted input before installing a new fuse.
- This code is often stored alongside communication codes if the low voltage disrupts the module's ability to transmit data on the network.

Can I keep driving with P2E2D?

You can usually drive the vehicle short distances to a repair shop, but avoid relying on high-voltage charging and do not ignore the warning for long, because a persistent low supply can leave you stranded with a depleted auxiliary battery. If the vehicle enters reduced power mode or the charging system warning is accompanied by other electrical faults, stop driving and arrange a tow.

Tools that help

- Digital multimeter with voltage drop capability
- Battery conductance tester
- Fuse puller and test light
- Manufacturer-specific scan tool
- Wiring diagram for the charger module supply circuit



Reading P2E2D

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

Often seen with

P0562 System Voltage Low · **P0563** System Voltage High · **P2E2C** Battery Charger A Module Supply Voltage Performance · **P2E2E** Battery Charger A Module Supply Voltage High · **U0111** Lost Communication With Battery Energy Control Module 'A'

See it working

Watch the animated explainer [Helicopter Simulator: Take Off, Hover and Land](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p2e2d/>

