

GENERIC · POWERTRAIN

P0D02

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0D02

Hybrid/EV Charging System Voltage Out Of Range

P0D02 indicates that the hybrid or electric vehicle charging system has detected a voltage outside its expected operating range, typically during charging or when the high-voltage battery is being conditioned. The computer compares the measured charging voltage against a calibrated window and sets the code when the signal falls too low or rises too high for a defined period.

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

Symptoms you may notice

- Charging warning light or high-voltage system fault message on the dashboard
- Vehicle fails to start charging when plugged in, or charging stops prematurely
- Reduced electric driving range or the vehicle switching to a limited-power mode
- Audible charging contactor clicks repeated without normal charge progress
- Often no symptoms besides the warning light if the fault is intermittent

Common causes, most likely first

- Weak or failing 12-volt auxiliary battery causing unstable control-module voltage
- Corroded, loose, or damaged charging port pins and high-voltage cable connectors
- Faulty charging system voltage sensor or its wiring harness
- Failed onboard charger module or its internal voltage regulation circuit
- High-voltage battery pack cell imbalance or degraded module affecting charge voltage
- Software calibration issue in the charging control module requiring an update
- Ground strap or chassis ground connection with excessive resistance



How to diagnose and fix it

- 1 Scan all modules for stored and pending codes, then record freeze-frame data for P0D02
- 2 Inspect and test the 12-volt auxiliary battery state of charge and replace if below specification
- 3 Visually inspect charging port, charge cable, and high-voltage connectors for corrosion, arcing, or looseness
- 4 Measure charging system voltage with a multimeter at the port and compare to scan-tool live data
- 5 Check ground straps and chassis grounds for voltage drop under load
- 6 Perform a guided diagnostic for the onboard charger and voltage sensor circuit using the manufacturer service information
- 7 Reprogram or replace the charging control module only after electrical and connection faults are ruled out

Charging voltage faults often start at the port

- A dirty or worn charging port latch can cause intermittent voltage out-of-range codes that disappear after cleaning and pin tension adjustment.
- Technicians frequently replace the onboard charger when the real fault is a corroded ground strap that raises reference voltage under charge load.
- P0D02 can be set by a weak 12-volt battery because control modules use that supply as a stable reference for high-voltage measurements.
- The code does not always mean the high-voltage battery is failing; cell imbalance may only appear at high state of charge and clear after balancing.
- After any high-voltage component repair, the code may remain stored until a successful charging cycle completes and the monitor reruns.

Can I keep driving with P0D02?

Do not continue normal driving or charging if the warning light is accompanied by reduced power or a high-voltage fault message. Park safely, avoid repeated charging attempts, and have the vehicle inspected by a qualified hybrid technician before further use.

Tools that help

- OBD-II scan tool with hybrid/EV module access
- Digital multimeter with high-voltage safety rating
- Manufacturer service information and wiring diagrams
- Insulated high-voltage gloves and safety equipment
- Battery load tester or conductance tester



Reading P0D02

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

Often seen with

P0A0D High Voltage System Interlock Circuit A High · **P0AA6** Hybrid/EV Battery Voltage System Isolation Fault
 · **P0D00** Control Pilot Charging Ventilation Switch Circuit/Open · **P0D01** Control Pilot Charging Ventilation Switch Range/Performance · **P0D03** Control Pilot Charging Ventilation Switch 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/p0d02/>

