

GENERIC · POWERTRAIN

P0D41

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0D41

Battery Charger A Input Voltage Sensor A Circuit Intermittent/Erratic

P0D41 indicates that the battery charger control module has detected an intermittent or erratic signal from the input voltage sensor on its 'A' circuit, meaning the voltage reading jumps around or drops out rather than staying steady. The computer sets this code when the sensor's signal falls outside expected limits or changes too abruptly for a calibrated period, often due to a loose connection or failing sensor.

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 battery charger warning light, often with no other noticeable symptoms
- Inconsistent or failed charging of the auxiliary battery, leading to a dead battery or reduced electric-only range
- The vehicle may enter a reduced power mode or refuse to start if the battery charger cannot maintain the 12-volt system
- A message on the dash indicating a charging system fault or service required
- In rare cases, flickering interior lights or electrical accessories behaving erratically due to unstable charging voltage

Common causes, most likely first

- 1 Loose, corroded, or damaged wiring or connector terminals at the battery charger input voltage sensor or its ground
- 2 A failing input voltage sensor itself, causing erratic resistance or voltage output
- 3 Interrupted or high-resistance circuit in the sensor's signal or reference voltage wire, often due to chafing or pinched harness
- 4 Poor ground connection for the battery charger module or sensor, leading to floating voltage readings
- 5 Internal fault in the battery charger control module affecting the sensor circuit
- 6 Extreme vibration or temperature swings causing temporary open circuits in the sensor or wiring



How to diagnose and fix it

- 1 Inspect and clean the sensor connector and ground points, looking for corrosion, loose pins, or frayed wires
- 2 Perform a wiggle test on the sensor harness while monitoring live data to reproduce the intermittent signal
- 3 Measure resistance and voltage on the sensor circuit according to the manufacturer's specifications, checking for opens or shorts
- 4 Compare the input voltage sensor reading with a known-good multimeter measurement at the battery charger terminals
- 5 Replace the input voltage sensor if it fails electrical testing or if live data shows erratic values not explained by wiring
- 6 Repair or replace damaged sections of the wiring harness, including any chafed or pinched areas
- 7 If all external circuits and the sensor test good, diagnose or replace the battery charger control module as the last step

Intermittent faults often hide in plain sight

- A common oversight is replacing the sensor without first checking the ground circuit, since a poor ground can mimic a failed sensor and cause the same erratic signal.
- The code can be set by a momentary voltage spike or drop during engine cranking or high-load conditions, so the fault may not be present during routine testing.
- Some technicians misdiagnose this as a failing battery when the real issue is a loose sensor connector that only acts up under vibration.
- The input voltage sensor on a battery charger is often integrated into the charger assembly, making it easy to overlook a simple wiring repair in favor of an expensive part.
- After any repair, clear the code and perform a road test with live data monitoring to confirm the signal remains stable under various electrical loads.

Can I keep driving with P0D41?

You can usually drive the vehicle to a workshop, but avoid long trips or heavy electrical loads because the charging system may stop working without warning. If the battery warning light is on or the vehicle enters reduced power mode, stop driving and seek immediate service.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Wiring diagram for the battery charger circuit
- Terminal pick and electrical contact cleaner
- Insulated test leads



Reading P0D41

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

Often seen with

P0562 System Voltage Low · **P0563** System Voltage High · **P0D3F** Battery Charger A Input Voltage Sensor A Circuit Low · **P0D42** Battery Charger 14 Volt Output Voltage Sensor Circuit · **P0D43** Battery Charger 14 Volt Output Voltage Sensor Circuit Range/

See it working

Watch the animated explainer [How a MAP Sensor Works: Engine Vacuum and Load](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p0d41/>

