

GENERIC · POWERTRAIN

P2D6A

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P2D6A

Battery Charging System Positive Contactor D Stuck Closed

P2D6A indicates that the battery charging system's positive contactor D has been detected as stuck closed by the control module, meaning the contactor's contacts remain welded or mechanically jammed in the closed position even when commanded to open. The computer monitors the contactor's state and sets this code when the expected open-circuit condition is not achieved, which can prevent proper isolation of the high-voltage battery from the charging circuit.

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

Symptoms you may notice

- Illumination of the battery charging system warning light or service vehicle soon message
- Often no symptoms besides the warning light, especially if the contactor remains closed and charging continues normally
- Possible failure to enter or exit certain charging modes, such as pre-conditioning or scheduled charging
- Intermittent charging interruptions or inability to stop charging when requested
- Reduced ability to isolate the high-voltage system during service or emergency shutdown

Common causes, most likely first

- 1 Welded or pitted contactor contacts due to repeated high-current switching or electrical arcing
- 2 Mechanical binding or foreign debris preventing the contactor from opening
- 3 Contactor coil driver circuit failure in the control module, holding the contactor energized
- 4 Short to voltage in the contactor control wiring, keeping the coil powered continuously
- 5 Contactor return spring fatigue or breakage, preventing the contacts from separating
- 6 Contamination or corrosion inside the contactor housing causing the armature to stick



How to diagnose and fix it

- 1 Verify the code with a scan tool and check for any related charging system or high-voltage codes before proceeding
- 2 Inspect the contactor control wiring and connector for signs of short to voltage, corrosion, or damage
- 3 Measure the contactor coil resistance and compare to specification to rule out an open or shorted coil
- 4 Command the contactor open and closed with a bidirectional scan tool while listening for an audible click and verifying circuit continuity
- 5 Perform a voltage drop test across the contactor contacts when it should be open to confirm a stuck-closed condition
- 6 If the contactor is confirmed stuck closed, replace the contactor assembly following the manufacturer's high-voltage safety procedures
- 7 Clear the code and perform a road test or charging cycle to verify the repair and ensure the code does not return

Contactor D stuck closed: what techs overlook

- A stuck-closed positive contactor often produces no drivability symptoms, so the warning light may be the only clue and the fault can be missed during routine service.
- The code can be set by a control module driver fault that keeps the contactor coil energized, so replacing the contactor without testing the control circuit may not resolve the issue.
- In some vehicles, the contactor is part of a non-serviceable battery pack assembly, making diagnosis of the control circuit and module output essential before condemning the pack.
- Intermittent stuck-closed conditions can be caused by thermal expansion of internal contactor components, so the fault may only appear after the vehicle has been charging for an extended period.
- Always follow high-voltage safety protocols when testing contactors; a stuck-closed contactor means the high-voltage circuit may remain live even when the vehicle is off.

Can I keep driving with P2D6A?

Do not continue driving or charging the vehicle until the fault is diagnosed, because a stuck-closed contactor can leave the high-voltage system energized when it should be isolated, creating a serious safety risk. Have the vehicle inspected by a qualified high-voltage technician before further use.

Tools that help

- Bidirectional scan tool with high-voltage system support
- Digital multimeter with high-voltage rated probes
- Insulation resistance tester
- Manufacturer service information for high-voltage safety procedures
- Personal protective equipment including high-voltage gloves



Reading P2D6A

- P** Powertrain: engine, transmission and emissions.
- 2** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- D** Hybrid propulsion.
- 6A** 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
· **P2D69** Battery Charging System Positive Contactor D Circuit · **P2D6B** Battery Charging System Positive Contactor D Stuck Open

See it working

Watch the animated explainer [Inline-Four Engine X-Ray: Firing Order 1-3-4-2](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p2d6a/>

