

GENERIC · POWERTRAIN

P2D5B

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P2D5B

Battery Charging System Positive Contactor C Circuit

P2D5B indicates that the battery charging system's positive contactor C circuit has a fault, as detected by the powertrain control module or battery energy control module monitoring the circuit's voltage or continuity. The contactor is a high-current relay that connects the battery pack to the charging system, and the module sets this code when the circuit's electrical signature falls outside the expected range during activation or deactivation.

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

Symptoms you may notice

- Illumination of the battery warning light or service vehicle soon message on the dashboard
- The vehicle may fail to start or enter ready mode because the high-voltage battery cannot connect to the charging system
- Reduced or absent charging capability, leading to a slowly draining battery
- Inability to perform DC fast charging or AC charging sessions
- Often no symptoms besides the warning light, especially if the fault is intermittent

Common causes, most likely first

- 1 Faulty positive contactor C itself, such as welded contacts or an open coil
- 2 Damaged or corroded wiring and connectors in the contactor control circuit
- 3 Failed contactor driver inside the battery energy control module or power control unit
- 4 Low 12-volt auxiliary battery causing erratic module operation and false contactor codes
- 5 Water intrusion or contamination in the contactor housing leading to electrical faults
- 6 Loose or improper ground connection for the contactor circuit



How to diagnose and fix it

- 1 Verify the 12-volt auxiliary battery state of charge and replace it if it fails a load test, as low voltage can set false contactor codes
- 2 Inspect the contactor C circuit wiring and connectors for corrosion, chafing, or loose pins, and repair as needed
- 3 Measure resistance across the contactor coil and compare to specification to check for an open or shorted coil
- 4 Command the contactor on and off with a scan tool while listening for an audible click and verifying circuit voltage changes
- 5 Check for technical service bulletins or software updates for the battery energy control module that address contactor monitoring
- 6 If the contactor is faulty, replace it following the manufacturer's high-voltage safety procedures
- 7 Clear the code and perform a road test or charging cycle to confirm the repair

Contactor C Circuit Checks Before Replacement

- A weak 12-volt battery is a frequent culprit behind this code because the contactor coil draws significant current, and low system voltage can cause the module to misinterpret the circuit feedback.
- The code does not always mean the contactor is bad; a chafed wire in the harness or a corroded connector pin can produce the same electrical signature and is far cheaper to fix.
- Intermittent contactor codes often appear after exposure to moisture or road splash, so inspect the contactor housing and nearby connectors for water intrusion or green corrosion.
- Some vehicles require a contactor learn or adaptation procedure after replacement, and skipping it can cause the code to return even with a new part.
- Technicians sometimes overlook the contactor driver inside the control module, which can fail and set this code without any fault in the contactor or wiring.

Can I keep driving with P2D5B?

Do not continue driving with this code because the high-voltage battery may not connect to the charging system, leading to a sudden loss of power or a no-start condition. Have the vehicle inspected by a qualified technician, and avoid charging or driving until the fault is repaired.

Tools that help

- OBD-II scan tool with bidirectional control and live data capability
- Digital multimeter with resistance and voltage measurement
- Manufacturer-specific diagnostic software for module commands and adaptations
- Insulated hand tools and personal protective equipment for high-voltage work
- Wiring diagram and service information for the specific vehicle



Reading P2D5B

- P** Powertrain: engine, transmission and emissions.
- 2** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- D** Hybrid propulsion.
- 5B** 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
 · **P2D5A** Reductant Level Sensor A/B Correlation · **P2D5C** Battery Charging System Positive Contactor C Stuck Closed

See it working

Watch the animated explainer [How a Supercharger Works: Roots Blower in X-Ray](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p2d5b/>

