

GENERIC · POWERTRAIN

P2D76

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P2D76

Battery Charging System Negative Contactor D Control Circuit High

P2D76 indicates that the battery charging system's negative contactor control circuit is reporting an abnormally high voltage, which the powertrain control module interprets as a short to power or an open circuit in the control path. The contactor is a heavy-duty relay that connects or disconnects the high-voltage battery's negative terminal from the rest of the charging system, and this code sets when the control wire voltage exceeds the expected range.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

High

FIX DIFFICULTY

Professional

AREA

Hybrid propulsion

Symptoms you may notice

- Illumination of the battery/charging system warning light or a dedicated service high-voltage system message
- The vehicle may fail to start or enter 'ready' mode because the high-voltage battery is isolated
- Reduced or absent charging, leading to a low 12-volt battery and eventual electrical shutdown
- Inability to use cabin pre-conditioning or charging features that rely on the high-voltage contactor
- Often no symptoms besides the warning light if the contactor remains closed and the fault is intermittent

Common causes, most likely first

- 1 A short to battery positive voltage in the control wire between the PCM and the negative contactor coil
- 2 An open circuit or high resistance in the contactor coil ground path, causing the control circuit to float high
- 3 A failed negative contactor coil (open winding) that no longer pulls in, leaving the control line at supply voltage
- 4 Corroded, loose, or damaged pins in the contactor connector or PCM connector
- 5 A faulty PCM driver stage that cannot pull the control line low
- 6 Water intrusion or wiring harness chafing that bridges the control wire to a power source



How to diagnose and fix it

- 1 Clear the code and verify whether it returns immediately or after a key cycle to confirm it is not a history code
- 2 Inspect the negative contactor connector and PCM connector for corrosion, loose pins, or pushed-out terminals
- 3 Measure control circuit voltage at the contactor with the key on and compare to the service specification for high vs. low state
- 4 Disconnect the PCM and contactor and check the control wire for continuity to ground and for short to power
- 5 Test the contactor coil resistance and compare to the manufacturer's specification to rule out an open winding
- 6 If wiring and coil test good, substitute a known-good contactor or PCM to isolate the faulty component
- 7 After repair, clear codes and perform a full charging system self-test to confirm the contactor engages and disengages correctly

When the contactor is not the culprit

- A shorted or chafed control wire often sets this code without any contactor failure, so always ohm the wire before condemning the relay.
- The PCM may set P2D76 as a default when it loses communication with the battery energy control module, even though the contactor itself is fine.
- Intermittent high voltage on the control line can be caused by a poor ground at the contactor mounting point rather than a wiring short.
- Some vehicles will not set a warning light for this code until the fault occurs on two consecutive drive cycles, so a single stored code may be a pending fault.
- Replacing the contactor without checking the PCM driver can lead to a repeat failure if the driver stage is shorted internally.

Can I keep driving with P2D76?

Do not continue driving with this code because the high-voltage battery may be isolated, leaving the vehicle without charging capability and risking a sudden loss of power. Have the vehicle towed to a qualified service facility for diagnosis.

Tools that help

- Digital multimeter with high-voltage safety rating
- OBD-II scan tool capable of reading hybrid/EV-specific codes
- Manufacturer service information for control circuit specifications
- Insulated hand tools and high-voltage safety gloves
- Wire piercing probes or back-probe kit



Reading P2D76

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

Often seen with

P0A0D High Voltage System Interlock Circuit A High · **P0A0F** Engine Failed to Start · **P2D75** Battery Charging System Negative Contactor D Control Circuit · **P2D77** Battery Charger Control Module B Performance

See it working

Watch the animated explainer [How a CVT Works: Belt and Pulley Transmission](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p2d76/>

