

GENERIC · POWERTRAIN

P2D66

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P2D66

Battery Charging System Negative Contactor C Control Circuit Range/Performance

P2D66 indicates that the battery charging system's negative contactor control circuit is not performing within its expected range, as detected by the powertrain control module (PCM) or battery energy control module. The module monitors the control wire for the negative contactor and sets this code when the voltage or current feedback does not match commanded values during self-test or operation.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Medium

FIX DIFFICULTY

Professional

AREA

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 in a safe default state
- Intermittent failure to engage the high-voltage battery contactor, leading to a no-start or reduced power condition
- Audible clicking or no click from the battery pack area when the ignition is turned on
- Reduced charging performance or the vehicle entering a limp-home mode
- Battery voltage gauge fluctuating or showing abnormal readings

Common causes, most likely first

- 1 Faulty negative contactor coil or mechanical binding inside the contactor assembly
- 2 Damaged or corroded wiring in the control circuit between the module and the contactor
- 3 Poor electrical connection at the contactor or module connector, including loose pins or water intrusion
- 4 Failed control module driver circuit for the negative contactor
- 5 Low or weak 12-volt auxiliary battery causing erratic module operation
- 6 Aftermarket accessories or improper previous repairs tapping into the control circuit



How to diagnose and fix it

- 1 Verify the 12-volt battery state of charge and perform a voltage drop test on the control circuit wiring
- 2 Inspect the negative contactor connector and module connector for corrosion, loose pins, or water damage
- 3 Measure resistance of the contactor coil and compare to manufacturer specifications
- 4 Command the negative contactor on and off with a scan tool while monitoring control circuit voltage and current
- 5 Check for technical service bulletins (TSBs) or software updates for the battery energy control module
- 6 Replace the negative contactor assembly if coil or mechanical failure is confirmed
- 7 Repair or replace the control module only after all wiring and contactor tests pass

When the contactor code misleads

- A weak 12-volt battery can cause the module to misreport contactor performance because the driver circuit lacks sufficient voltage to pull in the coil cleanly.
- The code can set intermittently from a contactor that is mechanically sticky rather than electrically failed, so a simple resistance check may pass while the fault remains.
- Water intrusion into the battery pack connector is a common hidden cause that mimics a failed contactor and is often missed during a quick visual inspection.
- Aftermarket alarm or remote start installations that tap into the control circuit can introduce resistance that triggers this code without any component failure.
- The PCM may set P2D66 as a companion code when the actual root cause is a communication fault or a low-voltage condition elsewhere in the high-voltage system.

Can I keep driving with P2D66?

If the vehicle starts and drives normally with only the warning light on, you can drive cautiously to a service location, but avoid long trips and heavy electrical loads. If the vehicle fails to start or enters limp mode, do not continue driving because the high-voltage battery may not be properly connected, which can strand you or cause further damage.

Tools that help

- OBD-II scan tool with bidirectional control and live data
- Digital multimeter with min/max recording
- Test light or load probe
- Manufacturer service information for circuit diagrams and specifications
- Insulation resistance tester for high-voltage circuit checks



Reading P2D66

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

Often seen with

P0A0D High Voltage System Interlock Circuit A High · **P0A0E** High Voltage System Interlock Circuit A Intermittent · **P0A1F** Battery Energy Control Module A Performance · **P2D65** Battery Charging System Negative Contactor C Control Circuit · **P2D67** Battery Charging System Negative Contactor C Control Circuit

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/p2d66/>

