

GENERIC · POWERTRAIN

P2D74

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P2D74

Battery Charging System Negative Contactor D Control Circuit Range/Performance

P2D74 indicates that the battery charging system's negative contactor control circuit is not performing within its expected range, meaning the powertrain control module has detected an abnormal voltage or current pattern on the control wire for the negative-side contactor. This contactor is a high-current relay that connects and disconnects the battery's negative terminal from the charging system, and the circuit's range or performance is outside what the module expects during commanded operation.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Hybrid propulsion

Symptoms you may notice

- Illumination of the battery/charging system warning light or a generic check engine light
- Intermittent or complete failure of the charging system, leading to a dead battery
- Voltage gauge fluctuating or reading lower than normal while driving
- Difficulty starting the engine due to a depleted battery
- Electrical accessories dimming or operating erratically
- Often no symptoms besides the warning light, especially if the fault is intermittent

Common causes, most likely first

- 1 Corroded, loose, or damaged wiring or connector terminals in the negative contactor control circuit
- 2 Failed negative contactor coil or internal contactor mechanism
- 3 Faulty powertrain control module driver for the contactor control circuit
- 4 High resistance or short to ground/voltage in the control circuit wiring
- 5 Poor ground connection for the contactor or charging system
- 6 Water intrusion or physical damage to the contactor or its connector



How to diagnose and fix it

- 1 Perform a visual inspection of the negative contactor, its connector, and the control circuit wiring for corrosion, damage, or looseness
- 2 Check for any related technical service bulletins or diagnostic trouble code (DTC) setting conditions specific to the vehicle make and model
- 3 Measure resistance and voltage on the control circuit at the contactor connector to verify continuity and check for shorts to ground or power
- 4 Test the negative contactor by applying power and ground directly to its coil to confirm it actuates and the internal contacts close properly
- 5 Inspect and clean all ground connections associated with the charging system and contactor
- 6 If the circuit and contactor test good, diagnose the powertrain control module driver circuit for proper operation
- 7 Replace the faulty negative contactor or repair the control circuit wiring as needed, then clear codes and verify the repair

Don't overlook the control circuit ground

- A common oversight is assuming the contactor itself is faulty when the real problem is a poor ground for the control circuit, which can cause the module to see an out-of-range condition.
- This code can set intermittently due to a loose connector that only loses contact during vibration or temperature changes, so wiggle-testing the harness while monitoring live data is crucial.
- Some vehicles use the negative contactor for battery isolation during charging or jump-starting, and a fault may only appear under specific operating conditions like high electrical load.
- The control circuit range/performance code does not always mean the contactor has failed; it can be triggered by a weak battery or charging system issue that causes voltage spikes on the control line.
- Misdiagnosis often occurs when technicians replace the contactor without checking the control module's driver circuit, which can be damaged by a shorted contactor coil.

Can I keep driving with P2D74?

If the charging system warning light is on and the battery is not being charged, driving is not recommended because the vehicle may stall or leave you stranded. If the light is on but the charging system appears to be working normally, you can drive cautiously to a repair shop, but avoid long trips and heavy electrical loads.

Tools that help

- Digital multimeter
- OBD-II scan tool with live data capability
- Wiring diagram for the specific vehicle
- Test light or power probe
- Basic hand tools (sockets, wrenches, screwdrivers)



Reading P2D74

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

Often seen with

P0560 System Voltage Malfunction · **P0562** System Voltage Low · **P0563** System Voltage High · **P2D73** Battery Charging System Negative Contactor D Control Circuit · **P2D75** Battery Charging System Negative Contactor D Control Circuit

See it working

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

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p2d74/>

