

GENERIC · POWERTRAIN

P0AA0

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0AA0

Hybrid/EV Battery Positive Contactor Circuit

P0AA0 indicates that the hybrid or electric vehicle battery pack's positive contactor circuit has a fault, meaning the high-voltage relay that connects the battery's positive terminal to the rest of the vehicle is not operating as expected. The computer detects this by monitoring the contactor's control circuit and the resulting voltage at the battery terminals, and it sets the code when the commanded state and actual state do not match.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

High

FIX DIFFICULTY

Professional

AREA

Hybrid propulsion

Symptoms you may notice

- Illumination of the hybrid system warning light or check engine light
- Vehicle may fail to start or enter 'Ready' mode
- Loss of high-voltage power, causing the vehicle to stall or refuse to move
- Audible clicking from the battery pack area when attempting to start
- Reduced power or limited driving speed if the vehicle enters a limp mode
- Often no symptoms besides the warning light, especially if the fault is intermittent

Common causes, most likely first

- 1 Faulty positive contactor assembly inside the high-voltage battery pack
- 2 Damaged or corroded wiring or connectors in the contactor control circuit
- 3 Failed contactor driver module or relay in the battery management system
- 4 Low 12-volt auxiliary battery causing erratic contactor operation
- 5 Internal battery management system (BMS) software or hardware fault
- 6 Contactor coil open circuit or short circuit
- 7 Water intrusion or contamination in the battery pack connector



How to diagnose and fix it

- 1 Verify the 12-volt battery state of charge and condition, as low voltage can cause false contactor codes
- 2 Perform a visual inspection of the high-voltage battery pack connectors and control wiring for damage or corrosion
- 3 Use a scan tool to command the contactor on and off while monitoring the control circuit voltage and listen for clicking
- 4 Check the contactor control circuit for opens, shorts, or high resistance with a multimeter
- 5 If the control circuit is intact, test the contactor coil resistance and compare to specifications
- 6 Replace the positive contactor assembly or battery pack as required, following manufacturer high-voltage safety procedures
- 7 Clear the code and perform a road test to confirm the repair

Contactor faults that mimic other hybrid issues

- A weak 12-volt battery is a common cause of P0AA0 because the contactor coils require a solid voltage to pull in reliably, and a sagging battery can set this code without any fault in the high-voltage system.
- The code can be set by a momentary loss of communication between the BMS and the contactor driver, so intermittent wiring faults often trigger it before a hard failure occurs.
- Technicians sometimes replace the entire battery pack when only the contactor assembly is faulty, but the contactor is often serviceable separately on many models.
- P0AA0 can be stored alongside codes for the negative contactor or precharge circuit, so always check for related codes to avoid misdiagnosis.
- After repairs, some vehicles require a contactor learn or calibration procedure with a scan tool to prevent the code from returning.

Can I keep driving with P0AA0?

Do not continue driving with this code because the high-voltage battery may disconnect unexpectedly, leading to a sudden loss of power and potential safety risk. Have the vehicle towed to a qualified hybrid technician for diagnosis.

Tools that help

- Hybrid/EV-rated scan tool with bidirectional control
- Digital multimeter with high-voltage rated probes
- Insulation tester (megohmmeter)
- High-voltage safety gloves and insulated tools
- Vehicle-specific service information for high-voltage system disable



Reading P0AA0

- P** Powertrain: engine, transmission and emissions.
- 0** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- A** Hybrid propulsion.
- A0** The exact fault within that area.

Often seen with

P0A0D High Voltage System Interlock Circuit A High · **P0AA1** Hybrid/EV Battery Positive Contactor Circuit Stuck Closed · **P0AA2** Hybrid/EV Battery Positive Contactor Circuit Stuck Open · **P0AA3** Hybrid/EV Battery Negative Contactor Circuit · **P0AA4** Hybrid/EV Battery Negative Contactor Circuit Stuck Closed

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/p0aa0/>

