

GENERIC · POWERTRAIN

P0AA3

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0AA3

Hybrid/EV Battery Negative Contactor Circuit

P0AA3 indicates that the hybrid or electric vehicle's battery control module has detected a fault in the negative contactor circuit, which is the high-voltage relay that connects the battery pack's negative terminal to the rest of the vehicle. The computer monitors the contactor's coil and driver circuit and sets this code when the commanded state does not match the actual state, or when the circuit's electrical signature falls outside the expected range.

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

Symptoms you may notice

- Illumination of the hybrid system warning light or service vehicle soon message
- The vehicle may refuse to start or enter 'Ready' mode, leaving you with a no-crank condition
- Reduced power or a forced limp-home mode while driving
- The high-voltage battery may not charge or discharge, affecting electric-only operation
- Often no symptoms besides the warning light, especially if the fault is intermittent
- Possible audible click absent from the battery pack area when the ignition is turned on

Common causes, most likely first

- 1 Failed negative contactor assembly, typically due to worn internal contacts or a burned coil
- 2 Open or shorted wiring in the contactor control circuit, including damaged harnesses or corroded connectors
- 3 Faulty battery control module or contactor driver inside the high-voltage battery pack
- 4 Low 12-volt auxiliary battery voltage causing erratic contactor operation
- 5 Contactor stuck closed or stuck open due to mechanical wear or welding of the contacts
- 6 Water intrusion or contamination in the battery pack connector causing corrosion
- 7 Aftermarket alarm or remote start installation tapping into the wrong circuit



How to diagnose and fix it

- 1 Verify the 12-volt battery is fully charged and in good condition, as low voltage can set false contactor codes
- 2 Scan all modules for related codes and check freeze-frame data to determine if the fault is current or intermittent
- 3 Inspect the negative contactor circuit wiring and connectors for damage, corrosion, or loose pins
- 4 Measure resistance and voltage on the contactor coil circuit according to the factory service information
- 5 Perform a bidirectional test of the contactor using a scan tool to command it on and off while listening for a click
- 6 If the circuit tests good, remove the battery pack cover and inspect the contactor for pitting or welding
- 7 Replace the faulty contactor or battery control module as needed, then clear codes and verify proper operation

Contactor codes are rarely just the relay

- A weak 12-volt battery is a common cause of false P0AA3 codes because the contactor coil needs a solid voltage supply to pull in reliably.
The code can be set by a intermittent wiring fault that only appears when the vehicle is cold or after a bump, so a wiggle test of the harness is essential.
 - Many technicians replace the contactor only to find the battery control module driver was the real fault, so always test the control side before condemning the relay.
 - Aftermarket accessories wired into the high-voltage system or its low-voltage control circuits can back-feed and set this code, so check for non-factory wiring.
- On some vehicles, the negative contactor is part of the battery pack assembly and cannot be serviced separately, requiring pack replacement or module repair.

Can I keep driving with P0AA3?

Do not continue driving with this code because the high-voltage battery may be disconnected unexpectedly, leading to a sudden loss of power. Have the vehicle towed to a qualified hybrid service facility for diagnosis.

Tools that help

- OBD-II scan tool with hybrid battery bidirectional controls
- Digital multimeter with high-voltage safety rating
- Factory service information for contactor circuit testing
- Insulated hand tools and high-voltage safety gloves
- Battery load tester for 12-volt system



Reading P0AA3

- P** Powertrain: engine, transmission and emissions.
- 0** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- A** Hybrid propulsion.
- A3** The exact fault within that area.

Often seen with

P0AA0 Hybrid/EV Battery Positive Contactor Circuit · **P0AA1** Hybrid/EV Battery Positive Contactor Circuit Stuck Closed · **P0AA2** Hybrid/EV Battery Positive Contactor Circuit Stuck Open · **P0AA4** Hybrid/EV Battery Negative Contactor Circuit Stuck Closed · **P0AA5** Hybrid/EV Battery Negative Contactor Circuit Stuck Open

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/p0aa3/>

