

GENERIC · POWERTRAIN

P0AE3

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0AE3

Hybrid/EV Battery Precharge Contactor Circuit Stuck Open

P0AE3 indicates that the hybrid or electric vehicle battery pack's precharge contactor circuit has been detected as stuck open, meaning the contactor did not close when commanded or the circuit is broken. The battery energy control module monitors the precharge circuit and sets this code when the expected voltage rise across the DC link does not occur during precharge, preventing safe high-voltage activation.

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

Symptoms you may notice

- Hybrid or EV system warning light illuminated on the dashboard
- Vehicle fails to enter 'Ready' mode or start the high-voltage system
- Audible click from the battery pack area may be absent when attempting to start
- Reduced power or limp-home mode if the vehicle does manage to start
- Often no symptoms besides the warning light if the fault is intermittent

Common causes, most likely first

- Precharge contactor coil open circuit or failed contactor assembly
- Open or high-resistance wiring between the battery control module and the precharge contactor
- Blown precharge contactor fuse or faulty relay in the control circuit
- Corroded or loose connector pins at the contactor or control module
- Failed precharge resistor (if integrated with the contactor circuit) causing no voltage rise
- Battery energy control module internal fault not commanding the contactor
- Mechanical binding or contamination preventing the contactor from closing



How to diagnose and fix it

- 1 Verify the code with a scan tool and check for related hybrid battery codes before clearing
- 2 Inspect the precharge contactor fuse and relay, replacing any that are open or faulty
- 3 Perform a visual inspection of the contactor wiring harness and connectors for corrosion or damage
- 4 Measure resistance across the precharge contactor coil and compare to specification
- 5 Check for control voltage at the contactor connector during a commanded precharge event
- 6 If the coil and wiring test good, remove and bench-test the contactor for mechanical operation
- 7 Replace the faulty precharge contactor or control module as indicated by test results, then clear codes and retest

What the precharge contactor test really shows

- A stuck-open precharge contactor can be caused by a simple blown fuse that is often overlooked because the main battery fuse is separate and still good.
- The code does not always mean the contactor itself has failed; a poor connection at the control module can mimic an open coil and lead to unnecessary contactor replacement.
- Intermittent P0AE3 codes often appear after a low-voltage battery event, because the control module may not command precharge correctly if system voltage is low during startup.
- Some vehicles set this code when the precharge resistor opens, even though the contactor coil and contacts are intact, so always test the resistor as part of the circuit.
- Clearing the code without repairing the circuit will usually result in an immediate return on the next key cycle, because the module runs a precharge self-test every time the high-voltage system is enabled.

Can I keep driving with P0AE3?

Do not continue driving if the vehicle will not enter Ready mode or shows a high-voltage system warning, as the battery pack may not be safely connected. If the vehicle still drives but the light is on, limit use to reach a repair facility and avoid repeated start attempts that could stress the contactor circuit.

Tools that help

- OBD-II scan tool with hybrid/EV capability
- Digital multimeter with low-ohm and voltage measurement
- Insulation tester or megohmmeter for high-voltage circuit checks
- Factory service information for precharge circuit specifications
- Safety gloves and insulated tools rated for high voltage



Reading P0AE3

- P** Powertrain: engine, transmission and emissions.
- 0** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- A** Hybrid propulsion.
- E3** The exact fault within that area.

Often seen with

P0A0D High Voltage System Interlock Circuit A High · **P0AA6** Hybrid/EV Battery Voltage System Isolation Fault
 · **P0AE2** Hybrid/EV Battery Precharge Contactor Circuit Stuck Closed · **P0AE4** Hybrid/EV Battery Precharge Contactor A Control Circuit/Open · **P0AE5** Hybrid/EV Battery Precharge Contactor A Control Circuit Rang

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/p0ae3/>

