

GENERIC · POWERTRAIN

P0AE4

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0AE4

Hybrid/EV Battery Precharge Contactor A Control Circuit/Open

P0AE4 indicates that the hybrid or electric vehicle battery pack's precharge contactor A control circuit has an open circuit, meaning the control module cannot complete the electrical path that commands the contactor to close. The computer detects this by monitoring the control circuit for expected voltage or current feedback and seeing none when the precharge sequence is commanded.

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 service vehicle soon message
- Often no symptoms besides the warning light, with the vehicle still starting and driving normally
- The vehicle may refuse to enter 'Ready' mode or may not start at all
- Intermittent loss of hybrid power or reduced power mode
- A clicking or no-click condition from the battery pack area when the ignition is turned on
- Possible stored codes in other modules related to high-voltage system readiness

Common causes, most likely first

- 1 Open or damaged wire in the precharge contactor control circuit, such as a broken conductor or corroded terminal
- 2 Failed precharge contactor coil or internal contactor assembly
- 3 Loose or disconnected electrical connector at the contactor or control module
- 4 Faulty battery energy control module (BECM) or hybrid control module not supplying the control signal
- 5 Blown fuse or open relay in the contactor control power supply circuit
- 6 High resistance in a ground connection for the contactor control circuit
- 7 Aftermarket alarm or remote start installation that tapped into the control circuit



How to diagnose and fix it

- 1 Connect a scan tool and record all stored codes in every module, then clear codes and verify whether P0AE4 returns immediately
- 2 Inspect the precharge contactor control circuit wiring and connectors for obvious damage, corrosion, or looseness
- 3 Check the fuse and relay that supply power to the contactor control circuit
- 4 Measure resistance and voltage on the control circuit at the contactor and at the control module to locate the open
- 5 Perform a wiggle test on the harness while monitoring the circuit to catch intermittent opens
- 6 If the circuit tests good, command the contactor on with a scan tool and listen for a click; no click indicates a failed contactor
- 7 Replace the faulty precharge contactor or control module as needed, then clear codes and verify proper precharge operation

Before you replace the precharge contactor

- A loose ground connection at the battery pack or chassis can mimic a failed contactor and is often overlooked during diagnosis.
- The control circuit open may be inside a connector that looks fine externally; always back-probe and check terminal tension.
- Some vehicles set P0AE4 when the 12-volt auxiliary battery is weak, causing the control module to drop the contactor command.
- Aftermarket accessories wired into the high-voltage enable circuit are a common cause of unexplained open-circuit codes.
- Do not assume the contactor itself is bad; the code specifically points to the control circuit, not the high-voltage contacts.

Can I keep driving with P0AE4?

Do not continue driving if the vehicle will not enter Ready mode or shows a hybrid system warning, as the high-voltage battery may be disconnected and the vehicle could lose power unexpectedly. If the only symptom is the warning light and the car drives normally, limit driving to a short distance to a repair facility and avoid high-load conditions.

Tools that help

- OBD-II scan tool with hybrid system capability
- Digital multimeter (DMM)
- Back-probe kit or terminal test leads
- Factory service information for circuit diagrams and precharge operation
- Insulated gloves and safety equipment for high-voltage work



Reading P0AE4

- P** Powertrain: engine, transmission and emissions.
- 0** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- A** Hybrid propulsion.
- E4** The exact fault within that area.

Often seen with

P0A0D High Voltage System Interlock Circuit A High · **P0A0F** Engine Failed to Start · **P0AE5** Hybrid/EV Battery Precharge Contactor A Control Circuit Rang · **P0AE6** Hybrid/EV Battery Precharge Contactor A Control Circuit Low · **P0AE7** Hybrid/EV Battery Precharge Contactor A Control Circuit High

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/p0ae4/>

