

GENERIC · POWERTRAIN

P0AE6

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0AE6

Hybrid/EV Battery Precharge Contactor A Control Circuit Low

P0AE6 indicates that the hybrid or electric vehicle battery pack's precharge contactor A control circuit is reporting a low-voltage condition, meaning the control module detects a short to ground or an open circuit on the command wire for that contactor. The precharge contactor is a relay that momentarily limits inrush current when connecting the high-voltage battery to the rest of the vehicle's electrical system, and a fault here prevents safe precharging.

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
- The vehicle may refuse to enter 'Ready' mode or start
- A noticeable delay or failure when attempting to power on the high-voltage system
- Audible clicking from the battery pack area may be absent during startup
- Often no symptoms besides the warning light if the fault is intermittent

Common causes, most likely first

- 1 Damaged or chafed wiring in the precharge contactor control circuit, causing a short to ground
- 2 Corroded or loose electrical connector at the precharge contactor or battery control module
- 3 Failed precharge contactor coil (open or shorted internally)
- 4 Faulty battery control module or hybrid vehicle control module driver circuit
- 5 Water intrusion or contamination in the battery pack connector area
- 6 Aftermarket accessories improperly tapped into the control circuit



How to diagnose and fix it

- 1 Perform a visual inspection of the precharge contactor control circuit wiring and connectors for damage, corrosion, or loose pins
- 2 Use a scan tool to check for related codes and freeze-frame data, and verify the battery control module's commanded state for the precharge contactor
- 3 Measure resistance of the precharge contactor coil and compare to specification to rule out an open or shorted coil
- 4 Backprobe the control circuit at the contactor and at the control module to check for a short to ground or an open circuit with a multimeter
- 5 If wiring and coil test good, substitute a known-good precharge contactor or control module to isolate the fault
- 6 Repair or replace the faulty wiring, connector, contactor, or control module as needed, then clear codes and verify proper precharge operation

Precharge contactor faults that fool technicians

- A low control circuit code often results from a short to ground in the wiring harness where it rubs against the battery pack frame, not from a failed contactor itself.
- Intermittent codes can be caused by a loose connector pin that only loses contact when the vehicle is exposed to temperature swings or vibration.
- Some vehicles set this code if the 12-volt auxiliary battery is weak, because the control module may not have enough voltage to properly drive the contactor coil.
- The precharge contactor is sometimes part of a non-serviceable assembly, so technicians must verify the control circuit before condemning the entire battery pack.
- A shorted precharge contactor coil can also set a high circuit code, so always check for both P0AE6 and its high-side counterpart when diagnosing.

Can I keep driving with P0AE6?

Do not continue driving with this code present, as the high-voltage system may not precharge correctly, leading to a no-start condition or potential damage to the contactors and inverter. Have the vehicle inspected by a qualified hybrid technician before attempting further operation.

Tools that help

- OBD-II scan tool with hybrid/EV capability
- Digital multimeter
- Wiring diagram for the specific vehicle
- Insulation tester (megohmmeter) for high-voltage circuit checks
- Hand tools for connector and panel access



Reading P0AE6

- P** Powertrain: engine, transmission and emissions.
- 0** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- A** Hybrid propulsion.
- E6** 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 · **P0AE5** Hybrid/EV Battery Precharge Contactor A Control Circuit Rang · **P0AE7** Hybrid/EV Battery Precharge Contactor A Control Circuit High · **P0AE8** Hybrid/EV Battery Temperature Sensor D Circuit

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/p0ae6/>

