

GENERIC · POWERTRAIN

P0C49

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0C49

Hybrid/EV Battery Pack Coolant Pump A Control Circuit High

P0C49 indicates that the hybrid or electric vehicle battery pack coolant pump control circuit is reporting a high voltage condition, meaning the pump driver module or wiring has an open circuit, short to power, or excessive resistance. The computer has detected that the commanded pump control signal is not being pulled low as expected, so it sets this code to flag a fault in the coolant pump's electrical control path.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Generic (all makes)	Medium	Intermediate	Hybrid propulsion

Symptoms you may notice

- Illumination of the check engine light or hybrid system warning light, often with no other noticeable symptoms
- Reduced hybrid/EV battery cooling performance, which may lead to power derating or reduced electric range in extreme cases
- Possible audible absence of the coolant pump running after shutdown or during charging
- Overheating warning message on the dash if the battery pack temperature rises above safe limits
- In some vehicles, the engine may start unexpectedly or the vehicle may enter a fail-safe mode limiting speed

Common causes, most likely first

- 1 Open circuit or high resistance in the coolant pump control wire between the pump and the control module
- 2 Faulty coolant pump control module or integrated pump electronics
- 3 Corroded, loose, or damaged electrical connector at the coolant pump or control module
- 4 Short to battery voltage on the pump control circuit
- 5 Failed coolant pump motor causing abnormal current draw and triggering the high-side detection
- 6 Damaged wiring harness due to chafing, heat, or rodent damage
- 7 Internal fault in the hybrid/EV battery pack control module or powertrain control module



How to diagnose and fix it

- 1 Use a scan tool to verify the code and check for any related coolant pump or battery temperature codes
- 2 Visually inspect the coolant pump connector and wiring for corrosion, loose pins, or physical damage
- 3 Measure resistance of the pump control circuit from the pump connector to the control module and compare to specification
- 4 Check for short to voltage on the control circuit with the key on and the module disconnected
- 5 Command the coolant pump on with a scan tool and listen for operation while monitoring live data for pump speed or current
- 6 If wiring and connectors are good, substitute a known-good coolant pump or control module to isolate the fault
- 7 Clear codes and perform a road test or charging cycle to confirm the repair and ensure the code does not return

Coolant pump control circuit quirks to check first

- A high circuit code often results from an open control wire rather than a failed pump, so always check continuity before replacing the pump.
- Some vehicles use a pulse-width modulated signal on the control circuit, and a standard multimeter may not show the true average voltage, leading to misdiagnosis.
- The coolant pump may run only during charging or after shutdown, so a quick key-on test can miss an intermittent fault.
- Corrosion inside the pump connector is a common hidden cause that can mimic a failed pump and is often overlooked during visual inspection.
- A weak 12-volt auxiliary battery can cause erratic module behavior and set false high-circuit codes on the pump control circuit.

Can I keep driving with P0C49?

You can usually drive the vehicle short distances at moderate speeds, but avoid aggressive driving, sustained high speeds, or fast charging until the fault is repaired. If the hybrid system warning light is on or the battery temperature gauge climbs, stop and seek professional service to prevent battery damage.

Tools that help

- OBD-II scan tool with hybrid/EV capability
- Digital multimeter
- Back probe pins or breakout box
- Wiring diagram for the specific vehicle
- Basic hand tools for connector and pump access



Reading P0C49

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

Often seen with

P0A0D High Voltage System Interlock Circuit A High · **P0A93** Inverter A Cooling System Performance · **P0C47** Hybrid/EV Battery Pack Coolant Pump A Control Circuit/Open · **P0C48** Hybrid/EV Battery Pack Coolant Pump A Control Circuit Low · **P0C4A** Hybrid/EV Battery Pack Coolant Pump A Control Performance

See it working

Watch the animated explainer [Engine Cooling System Trainer: How Engines Stay Cool](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p0c49/>

