

GENERIC · POWERTRAIN

P2E49

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P2E49

Hybrid/EV Electronics Coolant Pump B Stuck/Stalled

P2E49 indicates that the powertrain control module has detected a stalled or stuck condition in the electronics coolant pump designated as 'B', which is a secondary pump used to circulate coolant through the hybrid or electric vehicle's power electronics. The computer monitors the pump's electrical current and feedback signal, and when the pump fails to respond to commands or draws current outside the expected range, it sets this code.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Hybrid propulsion

Symptoms you may notice

- Illumination of the check engine light or a dedicated hybrid system warning light
- Often no symptoms besides the warning light, especially if the pump is only intermittently sticking
- Reduced hybrid system power or a forced limp mode in some vehicles
- Overheating warnings for the power electronics, which may trigger a shutdown of the hybrid system
- Audible whining or absence of pump noise when the vehicle is in ready mode
- In rare cases, the vehicle may fail to start or enter ready mode due to safety interlocks

Common causes, most likely first

- 1 Coolant pump B electrical connector is loose, corroded, or damaged
- 2 The pump motor itself has seized or developed an internal open circuit
- 3 A blown fuse or relay that supplies power to the pump circuit
- 4 Wiring harness damage such as chafing, rodent damage, or heat-related insulation breakdown
- 5 Low coolant level or air pockets in the cooling system causing the pump to run dry and stall
- 6 A faulty powertrain control module driver circuit for the pump, though this is less common
- 7 Debris or contamination in the coolant that jams the pump impeller



How to diagnose and fix it

- 1 Verify the coolant level and inspect for leaks or air pockets in the electronics cooling loop
- 2 Check the pump B electrical connector for tightness, corrosion, and pin damage
- 3 Test the fuse and relay that supply power to the pump circuit and replace if faulty
- 4 Measure resistance and supply voltage at the pump connector to confirm power and ground integrity
- 5 Command the pump on with a scan tool and listen for operation or observe live current feedback
- 6 If the pump does not respond to commands and wiring is intact, replace the electronics coolant pump B
- 7 Clear the code and perform a road test to confirm the repair and ensure the code does not return

Before you replace the coolant pump

- A low coolant level or trapped air in the electronics cooling loop can cause the pump to stall intermittently and set this code without any electrical fault, so always bleed the system properly after any service.
- The pump may test fine when cold but seize when hot, so a resistance check on a cold pump can be misleading and a live command test after warm-up is more reliable.
- Some vehicles use a pulse-width modulated signal to control pump speed, and a failed driver in the control module can mimic a bad pump, so check for a command signal at the pump before condemning it.
- This code can be set by a momentary voltage drop during engine cranking if the battery is weak, so inspect battery health and charging system operation before replacing parts.
- Debris from a deteriorating coolant hose or a failed water pump seal can contaminate the electronics cooling circuit and jam the pump impeller, so flush the system if contamination is found.

Can I keep driving with P2E49?

It is not advisable to continue driving for long distances with this code because a failed electronics coolant pump can lead to overheating of the hybrid power electronics and a sudden loss of propulsion. Limit driving to a short distance to a safe location or repair shop, and avoid heavy acceleration or high-load conditions.

Tools that help

- Scan tool with bidirectional control and live data capability
- Digital multimeter
- Coolant refractometer or hydrometer
- Basic hand tools and socket set
- Vacuum coolant refill tool



Reading P2E49

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

Often seen with

P0A01 Motor Electronics Coolant Temperature Sensor Circuit Range/P · **P0A93** Inverter A Cooling System Performance · **P0C73** Hybrid Battery Pack Cooling Pump Performance · **P2E48** Hybrid/EV Electronics Coolant Pump B Overspeed · **P2E4A** Battery Charger Coupler Temperature Sensor C Circuit

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/p2e49/>

