

GENERIC · POWERTRAIN

P2E48

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P2E48

Hybrid/EV Electronics Coolant Pump B Overspeed

P2E48 indicates that the hybrid or electric vehicle's electronics coolant pump B is running faster than the control module expects for the commanded duty cycle, which the computer detects by comparing the pump's speed feedback signal against the target speed. This overspeed condition typically points to a pump that is receiving too much current, a faulty speed sensor inside the pump, or a control circuit issue that prevents the module from regulating pump speed properly.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Hybrid propulsion

Symptoms you may notice

- Illumination of the hybrid system warning light or service vehicle soon message on the dashboard
- Reduced power or a forced limp-home mode as the vehicle limits hybrid system operation to protect the electronics
- Overheating of the hybrid electronics, which may trigger additional derating or shutdown of the electric drive
- Audible whining or humming from the coolant pump area that changes pitch with pump speed
- Often no symptoms besides the warning light, especially if the overspeed is intermittent and the system still maintains adequate cooling

Common causes, most likely first

- 1 Faulty coolant pump B itself, such as internal wear or a failed speed sensor causing incorrect feedback
- 2 Damaged or corroded wiring or connector at the pump, allowing voltage spikes or intermittent signals
- 3 Coolant restriction or air lock in the pump circuit, causing the pump to run at high speed with little load
- 4 Failed pump control module or driver circuit inside the hybrid control unit, unable to regulate pump speed
- 5 Low coolant level or a coolant leak that reduces pump load and triggers overspeed detection
- 6 Software calibration issue in the hybrid control module that misinterprets pump speed feedback



How to diagnose and fix it

- 1 Check coolant level and inspect for leaks or air locks in the hybrid electronics cooling circuit, topping up or bleeding as needed
- 2 Visually inspect the pump B connector and wiring for corrosion, chafing, or loose pins, and repair any damage
- 3 Use a scan tool to command the pump through its speed range and compare commanded versus actual speed to confirm the overspeed condition
- 4 Measure voltage and ground at the pump connector under load to rule out supply or ground faults
- 5 Test the pump's internal speed sensor signal with an oscilloscope if accessible, looking for erratic or missing pulses
- 6 If the pump is confirmed faulty, replace it and clear the code, then verify proper operation with a road test
- 7 If the pump and wiring test good, check for technical service bulletins or software updates for the hybrid control module before condemning it

What a pump overspeed code really tells you

- An overspeed code often sets because the pump is running dry or against a restriction, not because the pump motor itself is too fast, so always verify coolant flow and bleed the system first.
- A weak or failing 12-volt battery can cause erratic pump speed signals on some hybrids, so load-test the battery before replacing expensive components.
- The pump may pass a simple resistance check but still have an intermittent speed sensor fault that only appears when hot, so a wiggle test and live data review are essential.
- After replacing the pump, some vehicles require a relearn or calibration procedure with a scan tool to clear the overspeed code permanently.
- This code can be set by a poor ground connection at the chassis or pump mounting bolt, which is easy to overlook during visual inspection.

Can I keep driving with P2E48?

It is not recommended to continue driving for long distances with this code active, because the hybrid electronics may overheat and cause a sudden loss of power or shutdown. Limit driving to a short distance to a safe location or repair shop, and avoid heavy acceleration or high ambient temperatures until the fault is repaired.

Tools that help

- OBD-II scan tool with hybrid system capability and live data
- Digital multimeter for voltage and resistance checks
- Oscilloscope for analyzing pump speed sensor signals
- Coolant refractometer or hydrometer to check coolant concentration
- Basic hand tools for connector and pump access



Reading P2E48

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

Often seen with

P0A93 Inverter A Cooling System Performance · **P0C73** Hybrid Battery Pack Cooling Pump Performance · **P2E47** Hybrid/EV Electronics Coolant Pump B Underspeed · **P2E49** Hybrid/EV Electronics Coolant Pump B Stuck/Stalled

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/p2e48/>

