

GENERIC · POWERTRAIN

P2E44

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P2E44

Hybrid/EV Electronics Coolant Pump B Control Circuit High

P2E44 indicates that the hybrid or electric vehicle control module has detected a high-voltage condition on the control circuit for coolant pump B, which is responsible for circulating coolant through the electronics cooling loop. The circuit is monitored for expected voltage levels, and a high reading means the pump control wire is seeing voltage above the normal range, often due to a short to power or an open circuit in the ground path.

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
- Reduced power output or limp mode as the system protects the electronics from overheating
- Coolant pump may not run, leading to overheating of the inverter or battery pack
- Often no symptoms besides the warning light, especially if the fault is intermittent
- Possible audible warning chimes or a message to pull over safely
- In some cases, the vehicle may fail to start or enter ready mode

Common causes, most likely first

- 1 Short to voltage on the pump control circuit wiring, often due to chafed insulation or pinched harness
- 2 Open circuit in the pump ground circuit, causing the control module to see high voltage on the control line
- 3 Faulty coolant pump B, such as an internal short or failed control electronics
- 4 Corroded or damaged connector pins at the pump or control module
- 5 Failed hybrid/EV control module driver for the pump circuit
- 6 Aftermarket accessories or improper wiring repairs interfering with the circuit



How to diagnose and fix it

- 1 Inspect the coolant pump B connector and harness for damage, corrosion, or loose pins, and repair as needed
- 2 Check the pump ground circuit for continuity to chassis ground and repair any open or high-resistance connection
- 3 Measure voltage on the pump control circuit with the key on and pump commanded off; if voltage is present, trace and repair the short to power
- 4 Test the coolant pump B by applying power and ground directly to verify operation, and replace if it fails to run or draws excessive current
- 5 If wiring and pump are good, check for technical service bulletins or software updates for the hybrid control module
- 6 Backprobe the control module connector to verify the high-voltage signal is present at the module; if so, diagnose or replace the control module
- 7 Clear codes and perform a road test to confirm the repair and ensure the pump operates correctly

Don't overlook the ground circuit

- A high voltage reading on a pump control circuit is frequently caused by an open ground, not a short to power, so always verify the ground path before replacing the pump.
- Intermittent P2E44 codes often appear after a coolant service or harness repair where a connector was not fully seated or a wire was pinched during reassembly.
- Some vehicles use a pulse-width modulated signal on the pump control circuit, and a standard voltmeter may show misleading readings; use an oscilloscope or a scan tool with live data to confirm the signal.
- The code can set if the pump is commanded off but the control module detects voltage from a backfeed through another component on the same circuit, so check for shared power or ground circuits.
- Replacing the coolant pump without checking the control module's ability to command the pump can lead to a repeat failure if the driver circuit is faulty.

Can I keep driving with P2E44?

It is not advisable to continue driving with this code because the coolant pump may not operate, which can lead to overheating of the hybrid electronics and potential costly damage. If the vehicle enters limp mode, drive only to a safe location and arrange for a professional diagnosis.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Oscilloscope (optional but helpful for PWM signals)
- Wire repair kit and crimping tools
- Vehicle-specific service information for circuit diagrams



Reading P2E44

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

Often seen with

P0A93 Inverter A Cooling System Performance · **P0A94** DC/DC Converter A Performance · **P0C73** Hybrid Battery Pack Cooling Pump Performance · **P2E43** Hybrid/EV Electronics Coolant Pump B Control Circuit Low · **P2E45** Hybrid/EV Electronics Coolant Pump B Enable 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/p2e44/>

