

GENERIC · POWERTRAIN

P2E43

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P2E43

Hybrid/EV Electronics Coolant Pump B Control Circuit Low

P2E43 indicates that the hybrid or electric vehicle electronics coolant pump B control circuit is reporting a low voltage condition, meaning the control module has detected a short to ground or an abnormally low signal on the pump's control wire. This pump circulates coolant through the power electronics, and a low circuit can prevent proper cooling of components such as the inverter or onboard charger.

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

Symptoms you may notice

- Illumination of the hybrid system warning light or service vehicle soon message
- Often no symptoms besides the warning light, especially if the pump is still partially functional
- Reduced hybrid system performance or a forced limp mode in some vehicles
- Possible overheating warning for the power electronics, leading to shutdown
- In rare cases, a no-start condition if the control module inhibits operation to protect the electronics
- Audible pump noise or lack of pump operation when the vehicle is in ready mode

Common causes, most likely first

- 1 Damaged or corroded wiring harness at the coolant pump connector, causing a short to ground
- 2 Failed coolant pump B, where the internal motor or control electronics have shorted
- 3 Poor electrical connection at the pump or control module due to loose pins or water intrusion
- 4 Faulty control module driver circuit that incorrectly reports a low condition
- 5 Chafed wire rubbing against a metal surface, creating a short to ground
- 6 Coolant contamination or debris causing pump seizure and subsequent circuit overload



How to diagnose and fix it

- 1 Inspect the coolant pump B connector and wiring for corrosion, loose pins, or signs of coolant intrusion
- 2 Disconnect the pump and measure resistance from the control wire to ground to check for a short
- 3 Test the pump motor directly with a known-good power source to verify it spins freely and draws normal current
- 4 Check the control module connector for tightness and inspect the harness for chafing or damage along its routing
- 5 If wiring and pump test good, substitute a known-good pump to see if the code clears
- 6 Clear the code and perform a road test with the scan tool monitoring pump control voltage and current
- 7 If the code persists after all checks, diagnose the control module driver circuit or replace the module as needed

Before you replace the coolant pump

- A low control circuit code often results from a simple chafed wire or corroded connector, so always perform a visual inspection and continuity test before condemning the pump.
- The pump may still run intermittently, so a lack of obvious overheating does not rule out a circuit fault; the code can set only under specific key-on or self-test conditions.
- Some vehicles use a pulse-width modulated control signal, and a low voltage can be caused by a failed driver in the control module rather than the pump itself.
- Coolant leaks from the pump seal can wick into the connector and create a short, so check for dried coolant residue around the pump housing.
- After repairs, the control module may require a relearn or adaptation procedure for the new pump to avoid a repeat code.

Can I keep driving with P2E43?

It is generally safe to drive short distances to a repair shop, but avoid sustained high-load driving or towing until the fault is fixed, as power electronics overheating can lead to a sudden shutdown or reduced power.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Wire probe set
- Service information for wiring diagrams and connector pinouts
- Basic hand tools for trim and connector removal



Reading P2E43

- P** Powertrain: engine, transmission and emissions.
- 2** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- E** Hybrid propulsion.
- 43** 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 · **P2E42** Hybrid/EV Electronics Coolant Pump B Performance · **P2E44** Hybrid/EV Electronics Coolant Pump B Control Circuit High

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/p2e43/>

