

GENERIC · POWERTRAIN

P2CF4

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P2CF4

Hybrid/EV Battery Pack Coolant Pump B Supply Voltage Circuit

P2CF4 indicates that the hybrid or electric vehicle battery pack coolant pump 'B' control circuit has a supply voltage problem, meaning the battery energy control module has detected an unexpected voltage level on the power feed to that pump. The computer is not necessarily reporting a failed pump, but rather that the electrical supply to the pump's control circuit is outside the expected range, which can prevent proper cooling of the high-voltage battery.

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 still operates intermittently
- Reduced hybrid system power or a forced limp mode to protect the battery pack
- Overheating of the high-voltage battery pack, which may trigger additional derating or shutdown
- Possible audible absence of the coolant pump running after shutdown or during charging
- In some cases, a no-start condition if the battery management system disables the high-voltage system

Common causes, most likely first

- 1 Blown fuse or fusible link supplying the coolant pump B circuit
- 2 Damaged or corroded wiring harness, connector pins, or ground connection at the pump or control module
- 3 Failed coolant pump B (internal short or open circuit affecting supply voltage feedback)
- 4 Faulty battery energy control module or pump control driver internal to the module
- 5 High resistance in the supply circuit due to loose terminals or water intrusion
- 6 Aftermarket accessories or improper previous repairs tapping into the pump supply circuit



How to diagnose and fix it

- 1 Verify the stored code and check for any related codes in the battery control module and pump control circuits
- 2 Inspect the coolant pump B fuse and replace if blown, then recheck for the code before proceeding
- 3 Visually inspect the pump connector and harness for corrosion, chafing, or loose pins, and perform a wiggle test while monitoring supply voltage
- 4 Measure supply voltage at the pump connector with the key on and compare to battery voltage; repair any excessive drop in the circuit
- 5 Check the pump ground circuit for resistance and repair any high-resistance ground connection
- 6 If supply voltage is correct at the pump but the code persists, test the pump with a known-good unit or command it on with a scan tool to verify operation
- 7 If the pump and wiring test good, diagnose the battery energy control module supply output and replace only after confirming all other circuits are intact

What the supply voltage code really means

- A supply voltage code does not automatically condemn the coolant pump; the fault often lies in a corroded connector or a blown fuse that is easy to overlook.
- Some vehicles set this code intermittently when the 12-volt auxiliary battery is weak, because the pump control module misreads supply voltage during cranking or low-voltage events.
- The pump may still run normally when the code is stored, leading technicians to replace a good pump when the real issue is a high-resistance ground or a loose fuse box terminal.
- After any repair, the code may need to be cleared and a battery pack coolant bleed procedure performed, as air pockets can cause the pump to draw excessive current and reset the fault.
- Related codes for pump A or pump speed signals often accompany P2CF4, so always scan all modules before deciding which circuit to chase.

Can I keep driving with P2CF4?

It is not advisable to continue driving for long with this code because the battery pack may not be cooled properly, which can lead to overheating and reduced hybrid system performance. Limit driving to a short distance to a repair facility and avoid heavy loads, fast charging, or aggressive driving until the fault is corrected.

Tools that help

- OBD-II scan tool with hybrid module capability
- Digital multimeter
- Fuse puller and test light
- Wiring diagram for the specific vehicle
- Socket set and trim removal tools for access to the pump



Reading P2CF4

- P** Powertrain: engine, transmission and emissions.
- 2** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- C** Hybrid propulsion.
- F4** The exact fault within that area.

Often seen with

P0A0D High Voltage System Interlock Circuit A High · **P0A93** Inverter A Cooling System Performance · **P0C73** Hybrid Battery Pack Cooling Pump Performance · **P2CF3** Hybrid/EV Battery Pack Coolant Pump A Underspeed · **P2CF5** Hybrid/EV Battery Pack 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/p2cf4/>

