

GENERIC · POWERTRAIN

P2E47

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P2E47

Hybrid/EV Electronics Coolant Pump B Underspeed

P2E47 indicates that the hybrid or electric vehicle electronics coolant pump B is running slower than the commanded speed, as detected by the pump's internal speed sensor or the control module's feedback circuit. The computer compares the actual pump speed to the desired speed and sets this code when the actual speed falls below the expected threshold for a calibrated time.

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 light
- Often no symptoms besides the warning light, especially if the pump still runs at reduced speed
- Reduced hybrid system power or a forced limp mode in some vehicles
- Overheating of the power electronics, which may trigger additional codes or shutdown
- Audible whining or lack of pump noise when the vehicle is in ready mode
- In rare cases, the vehicle may fail to start or enter ready mode

Common causes, most likely first

- 1 Low coolant level or air trapped in the electronics cooling circuit
- 2 Failing coolant pump B, such as worn brushes, a seized bearing, or a damaged impeller
- 3 Blocked or restricted coolant passage, hose, or radiator for the electronics loop
- 4 Wiring fault in the pump circuit, including an open, high resistance, or shorted harness
- 5 Corroded or loose electrical connector at the pump or control module
- 6 Faulty pump control module or driver inside the hybrid control unit
- 7 Coolant temperature sensor error causing incorrect pump speed commands



How to diagnose and fix it

- 1 Check the electronics coolant reservoir level and inspect for leaks or air pockets, then bleed the system if needed
- 2 Use a scan tool to command pump B on and off while watching live data for commanded versus actual speed
- 3 Perform a visual inspection of the pump connector, harness, and mounting area for corrosion, damage, or coolant intrusion
- 4 Measure voltage and ground at the pump connector with the key on and the pump commanded on, and check for a short or open circuit
- 5 Verify coolant flow through the electronics loop by feeling hoses or using a flow meter, and check for a clogged radiator or hose
- 6 Replace the coolant pump B if it fails to respond to commands or shows a large speed deviation
- 7 Clear the code and perform a road test or a hybrid system self-test to confirm the repair

Before you replace the coolant pump

- A low coolant level or trapped air is a common cause of this code and can mimic a failed pump, so always bleed the system before condemning the pump.
- The pump may run intermittently, so a static check with the engine off can miss the fault; command the pump on with a scan tool and watch live data.
- Corrosion at the pump connector often causes underspeed codes without any visible coolant leak, so inspect the terminals carefully.
- A failing pump can cause the power electronics to overheat and set other codes, so address P2E47 promptly to avoid cascading failures.
- Some vehicles use the pump for both electronics and battery cooling, so a restriction in the shared circuit can set this code even if the pump is good.

Can I keep driving with P2E47?

It is not recommended to continue driving with this code because the electronics coolant pump may fail completely and cause overheating of the hybrid components. If you must drive, keep the trip short and avoid high loads or high ambient temperatures, and have the vehicle inspected as soon as possible.

Tools that help

- OBD-II scan tool with hybrid system live data capability
- Digital multimeter
- Coolant refractometer or hydrometer
- Hose clamp pliers and basic hand tools
- Vacuum coolant refill tool or bleed kit



Reading P2E47

- P** Powertrain: engine, transmission and emissions.
- 2** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- E** Hybrid propulsion.
- 47** 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 · **P2E46** Hybrid/EV Electronics Coolant Pump B Overspeed - Dry Run · **P2E48** Hybrid/EV Electronics Coolant Pump B Overspeed

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/p2e47/>

