

GENERIC · POWERTRAIN

P2E7A

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P2E7A

Hybrid/EV Electronics Coolant Pump C Overspeed

P2E7A indicates that the hybrid or electric vehicle electronics coolant pump C has been commanded to run, but the pump's feedback signal shows it is spinning faster than the control module expects. The computer detects an overspeed condition by comparing the pump's reported speed against the commanded duty cycle and flags the fault when the speed exceeds the calibrated threshold.

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

Symptoms you may notice

- Illumination of the check engine light or hybrid system warning light, often with no other noticeable symptoms
- Reduced hybrid system power or a forced limp mode in some vehicles
- Overheating warnings for the hybrid electronics, especially during sustained high-load driving
- Audible whining or humming from the coolant pump that changes pitch unexpectedly
- In rare cases, the vehicle may refuse to start or enter a ready state

Common causes, most likely first

- 1 Failing coolant pump C, such as worn bearings or internal mechanical damage causing erratic speed
- 2 Damaged or chafed wiring between the pump and the control module, leading to a noisy speed signal
- 3 Corroded or loose electrical connector at the pump or module
- 4 Low or aerated coolant causing the pump to cavitate and spin faster than commanded
- 5 A faulty control module driver circuit that misreports pump speed
- 6 Blockage or restriction in the coolant circuit that alters pump load and speed
- 7 Aftermarket or incorrect pump installed that does not match the system's speed feedback characteristics



How to diagnose and fix it

- 1 Verify coolant level and condition, and pressure-test the system for leaks or air pockets
- 2 Inspect the pump C connector and harness for corrosion, chafing, or loose pins
- 3 Use a scan tool to command the pump through its speed range and compare commanded versus actual speed
- 4 Check for technical service bulletins or software updates for the hybrid control module
- 5 Perform a voltage drop test on the pump power and ground circuits under load
- 6 Replace the coolant pump C if electrical and coolant checks pass but overspeed persists
- 7 Clear codes and road-test the vehicle to confirm the repair

Overspeed Codes Often Misread as Pump Failure

- A low coolant level or trapped air can cause the pump to overspeed intermittently without any mechanical fault, so always bleed the system before condemning the pump.
- The pump's speed signal is a pulsed output, and a poor ground can corrupt that signal enough to set an overspeed code even when the pump runs normally.
- Some vehicles set this code after a battery replacement or module reprogramming because the pump's learned calibration is lost, requiring a relearn procedure.
- A restricted coolant passage or failing thermostat can increase pump load and cause the controller to see unexpected speed deviations, mimicking a pump fault.
- Do not replace the pump solely on this code; check for stored freeze-frame data that shows whether the overspeed occurred at startup or under load.

Can I keep driving with P2E7A?

You can usually drive a short distance to a repair shop, but avoid heavy acceleration or sustained high-speed driving because the electronics coolant pump may not protect the hybrid components properly. If the vehicle enters limp mode or shows overheating warnings, stop and have it towed.

Tools that help

- OBD-II scan tool with hybrid system capability
- Digital multimeter
- Coolant pressure tester
- Hose clamp pliers
- Factory service information for pump speed test procedures



Reading P2E7A

- P** Powertrain: engine, transmission and emissions.
- 2** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- E** Hybrid propulsion.
- 7A** The exact fault within that area.

Often seen with

P0A93 Inverter A Cooling System Performance · **P0C73** Hybrid Battery Pack Cooling Pump Performance · **P2E78** Hybrid/EV Battery Pack Coolant Temperature Sensor D Circuit · **P2E79** Hybrid/EV Electronics Coolant Pump C Performance · **P2E7B** Drive Motor A Excitation Current Sensor 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/p2e7a/>

