

GENERIC · POWERTRAIN

P0E4F

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0E4F

Motor Electronics Coolant Pump A Control Circuit Intermittent/Erratic

P0E4F indicates that the engine control module (ECM) has detected an intermittent or erratic electrical fault in the control circuit for the motor electronics coolant pump, which is an electric auxiliary pump used to circulate coolant through the engine and hybrid components. The ECM monitors the circuit for expected voltage or current and flags this code when the signal momentarily drops out, spikes, or behaves unpredictably rather than failing completely.

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, often with no other noticeable symptoms
- Intermittent overheating warning or temperature gauge fluctuation during idle or low-speed driving
- Reduced cabin heat or inconsistent heater performance if the pump also supplies the heater core
- A whining or humming noise from the pump area that changes pitch or stops unexpectedly
- Entry into reduced power mode or forced engine shutdown in some hybrid vehicles when pump operation is critical
- In rare cases, coolant leaks or a burning smell if the pump motor overheats from erratic operation

Common causes, most likely first

- 1 Corroded, loose, or damaged electrical connector at the coolant pump
- 2 Chafed or broken wires in the pump control circuit, often near heat sources or sharp edges
- 3 Failing coolant pump motor drawing excessive or erratic current
- 4 Internal fault in the pump's control module or integrated electronics
- 5 Poor ground connection for the pump circuit
- 6 Water or coolant intrusion into the pump connector or wiring harness
- 7 Intermittent fault in the ECM driver circuit for the pump (less common)



How to diagnose and fix it

- 1 Inspect the coolant pump connector and wiring for corrosion, looseness, or damage, and clean or repair as needed
- 2 Check the pump circuit ground connection for tightness and clean metal contact
- 3 Measure resistance and voltage drop across the pump control circuit while wiggling the harness to reveal intermittent faults
- 4 Command the pump on with a scan tool and observe live data for erratic current or voltage readings
- 5 Perform a voltage drop test on the power and ground sides of the pump circuit under load
- 6 If the circuit tests good, replace the coolant pump with a quality unit and clear the code
- 7 After repair, verify the pump operates smoothly through its full speed range and confirm the code does not return

Intermittent faults hide in connectors and grounds

- A pump that spins freely by hand and passes a static resistance test can still set this code because the fault only appears under vibration or heat, so always wiggle-test the harness while monitoring live data.
- The motor electronics coolant pump often runs after the engine is shut off to cool the turbocharger or hybrid components, so a failing pump may only act up minutes after the key is turned off and leave no symptom during a test drive.
- This code is frequently misdiagnosed as a failing pump when the real problem is a corroded ground stud on the chassis leg or a pin that has backed out of the connector, which costs far less to fix.
- On hybrid vehicles, the same pump may be shared between the engine and the inverter cooling loops, so a fault can set even when the engine is not running and the driver notices nothing until a hybrid system warning appears.
- A weak battery or charging system that drops voltage during cranking can cause the ECM to log this code intermittently, so check battery health and charging voltage before condemning the pump.

Can I keep driving with P0E4F?

You can usually drive short distances at moderate speed to a repair shop, but avoid heavy loads, long idles, and towing because an erratic pump can cause localized overheating of the engine or hybrid components. If the temperature gauge climbs or a red overheating warning appears, stop safely and shut the engine off immediately.

Tools that help

- OBD-II scan tool with live data and bidirectional control
- Digital multimeter with voltage drop and resistance functions
- Back probe kit or piercing probes for testing connectors without damage
- Wiring diagram for the specific vehicle's coolant pump circuit
- Basic hand tools for connector and harness access



Reading P0E4F

P	Powertrain: engine, transmission and emissions.
0	Generic (SAE) code: it means the same thing on every OBD-II vehicle.
E	Hybrid propulsion.
4F	The exact fault within that area.

Often seen with

P0217 Engine Over-Temperature Condition · **P0C73** Hybrid Battery Pack Cooling Pump Performance · **P0E4E** Engine Failed to Crank · **P0E50** Motor Electronics Coolant Pump B Control Circuit Intermitten · **P2183** Engine Coolant Temperature Sensor 2 Circuit Range/Performanc

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/p0e4f/>

