

GENERIC · POWERTRAIN

P2C48

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P2C48

Coolant Pump C Control Circuit Performance/Stuck Off

P2C48 indicates that the engine control module has detected a performance fault in the control circuit for coolant pump C, specifically that the pump is stuck off or not responding as commanded. The computer monitors the circuit and expects certain feedback or current draw when the pump is activated, and it has seen a condition where the pump remains off despite the command to run.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Hybrid propulsion

Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms
- Engine may enter reduced power mode or limp mode under certain conditions
- Possible overheating if the coolant pump is responsible for circulating coolant through the engine or hybrid system
- In hybrid or electric vehicles, reduced ability to cool the battery or power electronics, leading to performance limitations
- In some cases, a warning message on the dashboard related to coolant temperature or hybrid system performance

Common causes, most likely first

- 1 Faulty coolant pump C, such as a seized motor or internal electrical failure
- 2 Damaged or corroded wiring or connector at the coolant pump C harness
- 3 Blown fuse or faulty relay supplying power to the coolant pump C circuit
- 4 Open or short circuit in the control wire between the pump and the control module
- 5 Failed control module driver for the coolant pump circuit, though less common
- 6 Low coolant level or air pockets causing the pump to run dry and overheat, leading to performance issues



How to diagnose and fix it

- 1 Verify coolant level and condition; top off or bleed the cooling system if necessary
- 2 Check the fuse and relay for the coolant pump C circuit and replace if faulty
- 3 Inspect the wiring and connector at the coolant pump C for damage, corrosion, or loose pins; repair as needed
- 4 Command the coolant pump C on using a scan tool and listen for operation; if no sound, proceed to electrical testing
- 5 Measure voltage and ground at the pump connector with the pump commanded on; compare to specifications
- 6 Test the pump motor directly by applying power and ground; replace the pump if it does not run
- 7 If the pump and circuits test good, check for control module software updates or diagnose the control module driver circuit

Coolant pump C faults that mislead technicians

- A stuck-off coolant pump C can be caused by a simple blown fuse that is often overlooked because the pump itself is assumed to be the problem.
On hybrid vehicles, coolant pump C may be an electric auxiliary pump for battery cooling, and its failure may not cause engine overheating but instead trigger hybrid system warnings.
- The code can set intermittently due to a poor electrical connection that only fails under certain temperature or vibration conditions, so wiggle testing the harness is crucial.
- Some vehicles use a pulse-width modulated signal to control the pump; a failed pump can still show correct resistance but fail to respond to the PWM command, requiring a scope for proper diagnosis.
Replacing the pump without checking the control circuit can lead to repeat failure if the underlying wiring or connector issue is not addressed.

Can I keep driving with P2C48?

If the check engine light is on but the engine temperature remains normal, you can drive cautiously to a repair shop, but avoid heavy loads or long trips. If overheating occurs or a red warning light appears, stop driving immediately and tow the vehicle to prevent engine damage.

Tools that help

- OBD-II scan tool with bidirectional control capability
- Digital multimeter
- Test light
- Wiring diagram for the specific vehicle
- Socket set and basic hand tools



Reading P2C48

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

Often seen with

P00B7 Engine Coolant Flow Low/Performance · **P2C46** Battery Isolation/Voltage Stabilization Control Circuit High · **P2C47** Battery Isolation/Voltage Stabilization Control Circuit Inte · **P2C49** Coolant Pump D Control Circuit Performance/Stuck Off · **P2C4A** Clutch Actuator Position 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/p2c48/>

