

GENERIC · POWERTRAIN

P0CC2

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0CC2

Drive Motor A Coolant Pump Control Circuit Range/Performance

P0CC2 indicates that the powertrain control module has detected an out-of-range or performance fault in the control circuit for the coolant pump that serves Drive Motor A, which is the primary traction motor in many hybrid and electric vehicles. The computer monitors the pump's electrical circuit for expected voltage, current draw, or feedback signal, and it sets this code when the circuit does not behave as commanded during operation.

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 service vehicle soon message, often with no other noticeable symptoms
- Reduced power or limp mode if the motor coolant pump stops circulating and the controller derates the drive motor
- Overheating warning or high-temperature message for the drive motor system, sometimes accompanied by a burning smell
- Intermittent loss of propulsion or a sudden drop in power during acceleration or sustained driving
- Cooling fan running constantly or unusually loud as the vehicle tries to manage motor temperature
- A stored code in the hybrid or electric vehicle control module that may not trigger a dashboard light on some models

Common causes, most likely first

- 1 Faulty coolant pump for Drive Motor A, such as a worn brushless motor, seized impeller, or internal electronics failure
- 2 Damaged or corroded wiring and connectors in the pump control circuit, including chafed harnesses or water intrusion
- 3 Blown fuse or faulty relay that supplies power to the coolant pump circuit
- 4 Poor ground connection for the pump or its control module, causing erratic voltage feedback
- 5 Failed pump control module or driver inside the powertrain control module, though this is less common
- 6 Low coolant level or air pockets in the motor cooling loop that cause the pump to run dry and draw abnormal current
- 7 Software calibration issue in the control module that misinterprets normal pump feedback as a performance fault



How to diagnose and fix it

- 1 Verify the coolant level in the drive motor cooling system and inspect for leaks or air pockets before any electrical testing
- 2 Check the fuse and relay that feed the coolant pump circuit, and replace any that are blown or intermittent
- 3 Disconnect the pump connector and inspect terminals for corrosion, water intrusion, or loose pins, then clean and reseat as needed
- 4 Measure resistance and voltage drop on the pump control circuit wiring while wiggling the harness to find intermittent opens or shorts
- 5 Command the coolant pump on with a scan tool and observe live data for pump current, voltage, and motor temperature to confirm the fault
- 6 Perform a bidirectional test of the pump and compare commanded versus actual pump speed or current draw to isolate a failing pump
- 7 If the circuit and pump test good, check for control module software updates or follow the manufacturer's diagnostic flow for internal driver faults

What the pump circuit test really shows

- A pump that spins freely by hand can still set this code because the control circuit monitors electrical feedback, not just mechanical rotation, so a bench spin test proves little.
- Low coolant or trapped air is a frequent cause that gets missed because the pump runs but draws abnormal current, and the code stores as a circuit performance fault rather than a low-coolant code.
- Some vehicles set P0CC2 only after a specific drive cycle with the motor at operating temperature, so a cold static test may show no fault and lead to a misdiagnosis.
- Corrosion inside the pump connector is common on vehicles that see road salt or high humidity, and the terminals can look clean from the outside while resistance is high inside.
- A failing pump can cause the drive motor to derate before any temperature warning appears, so a driver may notice power loss without ever seeing an overheating message.

Can I keep driving with P0CC2?

It is not safe to ignore this code because a failed motor coolant pump can lead to drive motor overheating and a sudden loss of power. Limit driving to short, low-speed trips to a repair shop and avoid sustained highway speeds or heavy acceleration until the fault is repaired.

Tools that help

- OBD-II scan tool with bidirectional control and live data capability
- Digital multimeter with min/max recording and voltage drop capability
- Fuse puller and test light
- Socket and ratchet set for pump and connector access
- Coolant refractometer or hydrometer to check concentration and condition



Reading P0CC2

- P** Powertrain: engine, transmission and emissions.
- 0** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- C** Hybrid propulsion.
- C2** The exact fault within that area.

Often seen with

P0A93 Inverter A Cooling System Performance · **P0A94** DC/DC Converter A Performance · **P0C73** Hybrid Battery Pack Cooling Pump Performance · **P0CC1** Drive Motor A Coolant Pump Control Circuit/Open · **P0CC3** Drive Motor A Coolant Pump Control Circuit Low

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/p0cc2/>

