

GENERIC · POWERTRAIN

P0BC0

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0BC0

Hybrid/EV Battery Pack Cooling Fan Supply Voltage Circuit Low

P0BC0 indicates that the hybrid or electric vehicle battery pack cooling fan supply voltage circuit is reading lower than expected, meaning the fan may not receive enough power to cool the high-voltage battery. The computer detects this when the voltage on the supply circuit falls below the manufacturer's specified threshold, often due to a wiring fault, poor connection, or failing fan motor.

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 no symptoms besides the warning light, especially if the fan is not needed at the moment
- Reduced hybrid/EV performance or power output due to battery overheating protection
- Active cooling fan may not run at all or may run intermittently
- Overheating warning message or reduced charging rate in some vehicles
- Possible smell of overheating components or unusual fan noises

Common causes, most likely first

- 1 Corroded, loose, or damaged electrical connector at the cooling fan motor
- 2 Open or shorted wire in the fan supply circuit (power or ground side)
- 3 Failed cooling fan motor (internal short or open winding)
- 4 Blown fuse or faulty relay in the fan power circuit
- 5 Poor ground connection for the fan circuit
- 6 Faulty battery pack cooling fan control module (if equipped)
- 7 Low voltage from the hybrid battery system affecting fan operation



How to diagnose and fix it

- 1 Check the fuse and relay for the cooling fan circuit and replace if blown or faulty
- 2 Inspect the fan electrical connector for corrosion, tightness, and damaged pins; clean or repair as needed
- 3 Measure voltage at the fan connector with the fan commanded on; compare to battery voltage to identify voltage drop
- 4 Perform a voltage drop test on the supply and ground circuits to locate excessive resistance
- 5 Test the fan motor directly by applying power and ground; replace if it does not run or draws excessive current
- 6 Check the fan control module and wiring for proper signals and continuity; repair or replace as required
- 7 Clear the code and verify the repair by running the cooling fan with a scan tool and monitoring live data

Don't overlook the simple connector

- A loose or corroded connector at the fan motor is a frequent cause that can mimic a failed fan, so always inspect and clean terminals before replacing parts.
- The code can set intermittently due to vibration or temperature changes affecting a marginal connection, so wiggle-test wires while monitoring live data.
- A weak 12-volt auxiliary battery can cause low voltage on the fan circuit and set this code even when the fan itself is fine.
- Some vehicles use a pulse-width modulated (PWM) signal to control fan speed; a failed driver in the control module can set this code without any wiring issue.
- Do not assume the fan is faulty just because the code is present; the computer may detect low voltage due to a high-resistance ground that also affects other components.

Can I keep driving with P0BC0?

It is generally safe to drive short distances with this code, but avoid aggressive driving or heavy electrical loads that increase battery heat. If the battery temperature warning appears or performance is reduced, stop and have the vehicle serviced promptly to prevent battery damage.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Test light
- Wire crimper and terminal pick tools
- Service manual or wiring diagram for the specific vehicle



Reading P0BC0

- P** Powertrain: engine, transmission and emissions.
- 0** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- B** Hybrid propulsion.
- C0** The exact fault within that area.

Often seen with

P0AFA Hybrid/EV Battery System Voltage Low · **P0AFC** Hybrid/EV Battery Pack Sensor Module · **P0BC1** Hybrid/EV Battery Pack Cooling Fan Supply Voltage Circuit Hi · **P0BC2** Hybrid/EV Battery Temperature Sensor E Circuit · **P0BC3** Hybrid/EV Battery Temperature Sensor E Circuit Range/Perform

See it working

Watch the animated explainer [How a Radiator Fan Relay Circuit Works](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p0bc0/>

