

GENERIC · POWERTRAIN

P0BC7

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0BC7

Hybrid/EV Battery Pack Cooling Fan 1 Sense Circuit/Open

P0BC7 indicates that the hybrid or electric vehicle battery pack cooling fan control module has detected an open circuit or abnormal voltage on the fan's sense circuit, which is used to monitor fan operation. The computer sets this code when the sense circuit voltage falls outside the expected range, typically indicating a broken wire, poor connection, or failed 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 hybrid system warning light
- Often no symptoms besides the warning light
- Reduced hybrid battery cooling performance, which may lead to reduced power or charging issues
- Possible overheating of the hybrid battery pack in severe cases
- Audible cooling fan not running when the vehicle is in ready mode or after a drive
- In some vehicles, a message indicating hybrid system fault or reduced power

Common causes, most likely first

- 1 Open or damaged wire in the cooling fan sense circuit
- 2 Corroded or loose electrical connector at the cooling fan or control module
- 3 Failed hybrid battery cooling fan motor (open winding or internal fault)
- 4 Faulty cooling fan control module or integrated relay
- 5 Blown fuse or poor ground connection for the fan circuit
- 6 Rodent damage to wiring harness
- 7 Water intrusion or corrosion in the fan connector



How to diagnose and fix it

- 1 Inspect the cooling fan connector and wiring for obvious damage, corrosion, or loose pins
- 2 Check the fan circuit fuse and relay, and verify power and ground at the fan connector
- 3 Measure resistance of the fan motor and compare to specifications to rule out an open winding
- 4 Backprobe the sense circuit at the control module to check for an open or short to ground
- 5 Perform a wiggle test on the harness while monitoring sense circuit voltage to find intermittent opens
- 6 Replace the faulty fan motor, repair wiring, or replace the control module as needed
- 7 Clear the code and verify the fan operates correctly during a test drive with the hybrid system active

Sense circuit faults often misdiagnosed as fan failure

- A common mistake is replacing the cooling fan motor when the actual problem is a broken sense wire or corroded connector pin, so always check circuit continuity before condemning the fan.
- The sense circuit may share a connector with other low-current signals, and corrosion from a leaking battery pack vent or water intrusion can cause this code without any fan performance issue.
- Some vehicles set P0BC7 when the 12-volt auxiliary battery is weak or failing, because low system voltage can cause the control module to misinterpret the sense signal.
- The cooling fan may run normally during a static test but the code returns only after a drive cycle because the sense circuit opens when the harness flexes or heats up, so perform a wiggle test under load.
- This code does not always mean the fan is inoperative; it can be stored if the sense circuit voltage is slightly out of range while the fan still functions, leading to unnecessary fan replacement.

Can I keep driving with P0BC7?

You can usually continue driving with this code, but avoid heavy loads, prolonged idling, or aggressive driving that increases hybrid battery heat until the fault is repaired. If the hybrid system warning light is also on or you notice reduced power, have the vehicle checked promptly to prevent battery overheating.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Wiring diagram for the specific vehicle
- Backprobe pins or breakout box
- Trim removal tools for accessing fan and harness



Reading P0BC7

- P** Powertrain: engine, transmission and emissions.
- 0** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- B** Hybrid propulsion.
- C7** The exact fault within that area.

Often seen with

P0A7F Hybrid/EV Battery Pack Deterioration · **P0AFA** Hybrid/EV Battery System Voltage Low · **P0BC6** Hybrid/EV Battery Temperature Sensor E Circuit Intermittent/ · **P0BC8** Hybrid/EV Battery Pack Cooling Fan 1 Sense Range/Performance · **P0BC9** Hybrid/EV Battery Pack Cooling Fan 1 Sense Circuit Low

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/p0bc7/>

