

GENERIC · POWERTRAIN

P0CBBF

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0CBBF

Drive Motor A Coolant Temperature Sensor Circuit High

P0CBBF indicates that the powertrain control module has detected an abnormally high voltage on the signal circuit of the coolant temperature sensor for drive motor A, which is the main traction motor in a hybrid or electric vehicle. The sensor is a thermistor whose resistance drops as coolant temperature rises, so a high signal voltage tells the controller that the motor coolant is colder than it actually is or that the circuit is open.

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-home mode as the controller limits motor output to protect against perceived overheating
- Inaccurate or stuck coolant temperature reading on the instrument cluster or scan tool data stream
- Possible activation of the motor cooling fan at full speed or failure of the fan to turn on when needed
- In some vehicles, the engine may start or stop unexpectedly as the hybrid control system compensates for the faulty reading

Common causes, most likely first

- 1 Open or high-resistance fault in the sensor signal wire, such as a broken conductor or corroded terminal
- 2 Failed coolant temperature sensor that has drifted out of specification or developed an internal open circuit
- 3 Poor connection at the sensor connector or at the controller harness, including backed-out pins or water intrusion
- 4 High resistance in the sensor ground circuit, which raises the voltage seen on the signal line
- 5 Faulty powertrain control module or hybrid control module, though this is the least likely cause
- 6 Aftermarket accessories or wiring repairs that have disturbed the sensor circuit



How to diagnose and fix it

- 1 Connect a scan tool and record the freeze-frame data and coolant temperature reading to confirm the fault is present and not intermittent
- 2 Visually inspect the sensor, connector, and harness for damage, corrosion, or loose pins, and repair any obvious defects
- 3 Measure the sensor resistance with a multimeter and compare it to the manufacturer's temperature-resistance chart to verify sensor operation
- 4 Backprobe the signal circuit at the controller and check for an open or high-resistance condition while wiggling the harness
- 5 Check the sensor ground circuit for excessive resistance using a voltage drop test under load
- 6 If the circuit and sensor test good, substitute a known-good sensor or simulate the signal with a resistor box to confirm the controller responds correctly
- 7 Replace the faulty sensor or repair the wiring as needed, clear the codes, and verify the coolant temperature reading agrees with actual engine or motor temperature

High voltage does not always mean a bad sensor

- A high signal voltage is most often caused by an open circuit rather than a shorted sensor, so a broken wire or corroded connector is a more common finding than a failed thermistor.
- The motor coolant temperature sensor is sometimes shared with the inverter cooling loop, and a fault in that shared circuit can set this code even when the motor itself is not overheating.
- Technicians who replace the sensor without checking the ground circuit often see the code return because a high-resistance ground raises the signal voltage just like an open sensor would.
- In some hybrid systems, the controller defaults to a fixed coolant temperature when the signal is lost, which can mask the fault and prevent the cooling fan from operating correctly.
- A intermittent fault can be caused by harness chafing near the motor mount or through a bulkhead grommet, so a wiggle test while watching live data is essential before condemning any part.

Can I keep driving with P0CBF?

You can usually drive the vehicle short distances at reduced power, but avoid sustained high-speed driving or heavy loads because the controller may not be able to accurately protect the motor from overheating. If the vehicle enters limp-home mode or the coolant temperature gauge behaves erratically, have it diagnosed promptly.



Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter with resistance and voltage drop functions
- Backprobe pins or breakout box for controller harness testing
- Resistor box or decade resistance substitution tool
- Service information with temperature-resistance charts and wiring diagrams

Reading P0CBF

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

Often seen with

P0A3F Drive Motor A Position Sensor Circuit · **P0A93** Inverter A Cooling System Performance · **P0CBE** Drive Motor A Coolant Temperature Sensor Circuit Low · **P0CC0** Drive Motor A Coolant Temperature Sensor Circuit Intermitten · **P0CC1** Drive Motor A Coolant Pump Control Circuit/Open

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/p0cbf/>

