



P0CBC

Drive Motor A Coolant Temperature Sensor Circuit

P0CBC indicates that the powertrain control module has detected an abnormal signal from the coolant temperature sensor circuit dedicated to drive motor A, which is the primary electric propulsion motor in a hybrid or electric vehicle. The computer compares the sensor's voltage against expected values for the current operating conditions and flags the circuit when the reading falls outside the valid range or behaves erratically.

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 output or a limp-home mode as the controller limits motor torque to protect the drive unit
- Inconsistent or disabled cabin heating and cooling performance because the motor coolant loop shares climate control functions
- Intermittent warning light activation that may clear after the vehicle sits overnight or in different ambient temperatures
- Overheating warning or shutdown of the electric drive system in severe cases where the sensor falsely reports a cold condition

Common causes, most likely first

- 1 Failed coolant temperature sensor element that has drifted out of specification or developed an open circuit internally
- 2 Damaged or corroded sensor connector pins causing high resistance or intermittent contact
- 3 Chafed, pinched, or broken wiring in the sensor harness between the sensor and the control module
- 4 Coolant level low enough to expose the sensor tip, leading to erratic readings that mimic a circuit fault
- 5 Internal fault in the drive motor control module or inverter that corrupts the sensor reference voltage or signal return
- 6 Contamination or sludge buildup on the sensor tip from degraded coolant, insulating it from the actual coolant temperature
- 7 Aftermarket or incorrect sensor installed during a previous repair that does not match the expected resistance curve



How to diagnose and fix it

- 1 Verify coolant level and condition in the drive motor cooling loop, topping off or flushing if the fluid is low or degraded
- 2 Inspect the sensor connector and harness for corrosion, loose pins, or physical damage, repairing terminals as needed
- 3 Measure the sensor resistance with a multimeter at known temperatures and compare against the manufacturer's resistance chart
- 4 Backprobe the sensor signal and ground wires at the control module to check for voltage drop or an open circuit under load
- 5 Clear the code and perform a road test or wiggle test on the harness to confirm whether the fault is intermittent
- 6 Replace the drive motor coolant temperature sensor if resistance testing proves it is out of specification
- 7 If the circuit and sensor test good, diagnose the drive motor control module for a faulty internal reference voltage or signal processing circuit

What the coolant sensor shares with other systems

- The drive motor coolant temperature sensor often shares its reference voltage and ground with other sensors in the same harness, so a fault in one sensor can pull down the entire circuit and set multiple codes.
- A low coolant level in the electric drive loop can cause the sensor to read air temperature instead of coolant temperature, producing a P0CBC without any actual electrical defect.
- Technicians sometimes replace the sensor only to find the connector pins have been pushed back or spread, so always perform a drag test on the terminals before condemning the sensor.
- On many hybrid and electric vehicles, the motor coolant temperature signal is used to control the electric coolant pump and radiator fan, so a faulty sensor can cause the pump to run continuously or not at all.
- The code can be set by a momentary glitch during a low-voltage event, such as a weak 12-volt battery or a jump start, so check for related low-voltage codes before replacing parts.

Can I keep driving with P0CBC?

You can generally drive the vehicle short distances to a repair shop, but avoid sustained high-speed driving or heavy loads because the controller may not properly protect the drive motor from overheating. If the vehicle enters a reduced-power mode or displays an overheating warning, stop safely and have it towed.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter with resistance and voltage measurement
- Backprobe pins or breakout box for control module testing
- Manufacturer service information for resistance charts and wiring diagrams
- Coolant refractometer or hydrometer for checking coolant condition
- Terminal pick and crimping tools for connector repair



Reading P0CBC

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

Often seen with

P0CBB Hybrid/EV Battery Temperature Sensor P Circuit Intermittent/ · **P0CBD** Drive Motor A Coolant Temperature Sensor Circuit Range/Perfo · **P0CBE** Drive Motor A Coolant Temperature Sensor Circuit Low · **P0CBF** Drive Motor A Coolant Temperature Sensor Circuit High · **P0CC0** Drive Motor A Coolant Temperature Sensor Circuit Intermitten

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/p0cbc/>

