

GENERIC · POWERTRAIN

P0CBD

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0CBD

Drive Motor A Coolant Temperature Sensor Circuit Range/Performance

P0CBD indicates that the powertrain control module has detected an out-of-range or erratic signal from the coolant temperature sensor circuit dedicated to drive motor A, which is the electric traction motor. The computer compares the sensor voltage against expected values for the current operating conditions and flags the circuit when the reading falls outside a calibrated window or fails a rationality check.

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 triggered by the motor controller to protect the traction motor from overheating
- Inconsistent or missing coolant temperature readings on a scan tool data stream for drive motor A
- Possible overheating warning if the sensor under-reports motor temperature during sustained load
- Intermittent warning light that appears and clears with temperature swings or vibration
- Reduced electric range or performance if the module derates the motor as a precaution

Common causes, most likely first

- 1 Faulty drive motor A coolant temperature sensor that has drifted or failed internally
- 2 Damaged, chafed, or corroded wiring in the sensor circuit, especially near the motor housing
- 3 Loose or contaminated connector pins at the sensor or at the control module harness
- 4 Coolant level low or air pockets in the motor cooling circuit causing erratic sensor readings
- 5 Failed thermostat or cooling pump in the dedicated motor cooling loop leading to abnormal temperature behavior
- 6 Internal fault in the motor control module or its sensor interface circuit
- 7 Aftermarket or incorrect sensor installed previously with a different resistance curve



How to diagnose and fix it

- 1 Scan all modules and record freeze-frame data for POCBD, then compare drive motor A coolant temperature to other temperature sensors at key-on and after a cold soak
- 2 Inspect the sensor connector and harness for corrosion, pushed pins, chafing, and coolant intrusion, and perform a wiggle test while watching the live data
- 3 Check the motor cooling circuit coolant level and bleed the system if air is suspected, then verify the cooling pump operates
- 4 Measure sensor resistance at the connector and compare to the manufacturer's temperature-resistance chart across at least two known temperatures
- 5 Backprobe the signal and ground circuits at the control module to check for voltage drop or an open circuit under load
- 6 If the circuit and cooling system pass, substitute a known-good sensor and recheck live data before condemning the control module
- 7 Clear the code, perform a road test that brings the motor up to operating temperature, and confirm the monitor runs without resetting

Why this code often is not the sensor

- A significant share of POCBD cases trace back to low coolant or trapped air in the motor cooling loop rather than a failed sensor, because the sensor reads air pockets as wild temperature swings.
- Technicians who replace the sensor without checking the cooling pump or thermostat often see the code return within a few drive cycles once the motor is loaded again.
- The code can set from a rationality check comparing motor A coolant temperature to motor B or to the inverter temperature, so a fault in a related sensor can trigger POCBD even when the motor A sensor is healthy.
- Intermittent connector fretting at the motor housing is a common miss on high-mileage vehicles, and a static resistance test at the bench will not reveal it.
- Some vehicles set this code after a low-voltage event or module reflash, and a simple battery reset and relearn clears it without any hardware fault.

Can I keep driving with POCBD?

You can usually drive the vehicle short distances at moderate load, but avoid sustained high-speed or heavy-load driving until the fault is diagnosed, because a failed sensor can mask real motor overheating. If the vehicle enters limp mode or shows an overheating warning, stop and arrange service.



Tools that help

- OBD-II scan tool with live data and freeze-frame capability
- Digital multimeter with temperature probe
- Manufacturer service information with sensor resistance charts
- Coolant refractometer or hydrometer
- Backprobe pins and jumper leads
- Infrared thermometer

Reading P0CBD

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

Often seen with

P0C1A Drive Motor B Torque Delivered Performance · **P0CBB** Hybrid/EV Battery Temperature Sensor P Circuit Intermittent/ · **P0CBC** Drive Motor A Coolant Temperature Sensor Circuit · **P0CBE** Drive Motor A Coolant Temperature Sensor Circuit Low · **P0CBF** Drive Motor A Coolant Temperature Sensor Circuit High

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/p0cbd/>

