

GENERIC · POWERTRAIN

P2B23

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P2B23

Hybrid/EV Electronics Coolant Temperature Sensor B Circuit High

P2B23 means the hybrid or electric vehicle's electronics coolant temperature sensor B circuit is reporting a voltage higher than the manufacturer's expected range, so the control module cannot trust the reading. The computer has detected an open circuit, a short to voltage, or a sensor signal that stays above the normal threshold, which can affect cooling system management and power electronics protection.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Hybrid propulsion

Symptoms you may notice

- Illumination of the hybrid or EV system warning light, often with no other noticeable symptoms
- Reduced power output or a limp-home mode as the vehicle protects the power electronics
- Cooling fans running continuously or not at all, depending on the default strategy
- Overheating warnings or a message to stop the vehicle if the coolant temperature is genuinely high
- Inconsistent or disabled cabin climate control in some designs that share the electronics cooling loop

Common causes, most likely first

- 1 Open or damaged wiring in the sensor B signal circuit, including a broken wire or poor connector terminal
- 2 Sensor B internal failure causing an open circuit or a signal stuck at the high voltage limit
- 3 Corrosion or water intrusion at the sensor connector or inline harness connector
- 4 Short to voltage on the signal circuit from chafed wiring near the power electronics or coolant lines
- 5 Failed or unplugged sensor B ground circuit, which drives the signal voltage high
- 6 Control module internal fault on the sensor input circuit, though this is less common



How to diagnose and fix it

- 1 Scan all modules and record freeze-frame data for P2B23, then verify the sensor B voltage reading with a live data scan tool
- 2 Inspect the sensor B connector and harness for corrosion, water intrusion, loose terminals, and chafed wiring
- 3 Measure resistance across sensor B at the connector and compare with the manufacturer's temperature-resistance chart
- 4 Check the sensor B signal circuit for a short to voltage and the ground circuit for continuity back to the control module
- 5 Backprobe the control module connector to confirm the signal voltage matches the sensor reading and rule out a module fault
- 6 Replace the faulty sensor or repair the damaged harness section, then clear the code and verify the reading returns to normal
- 7 Perform a road test with live data to confirm the coolant temperature rises and falls correctly and the code does not return

What the high voltage reading really means

- A high voltage on a temperature sensor circuit almost always means an open circuit or a disconnected sensor, not an actual overheating event, so do not replace cooling system parts before checking the wiring.
- Some vehicles use two coolant temperature sensors for the electronics loop, and sensor B may be the outlet sensor; a failed sensor A can cause the module to set a related code for B if the strategy cross-checks the two readings.
- Water intrusion at the sensor connector is a common cause on hybrid and EV models because the sensor sits near splash zones or underbody panels, and the corrosion can mimic an open circuit.
- The control module may default to a fixed coolant temperature value when the circuit is high, which can disable active grille shutters or cooling fan control and cause a secondary complaint that seems unrelated.
- A short to voltage on the signal wire can be caused by a chafed harness rubbing against a metal bracket near the power electronics, so a visual inspection of the full harness route is essential.

Can I keep driving with P2B23?

You can usually drive the vehicle short distances to a repair shop, but avoid heavy acceleration, long trips, or high ambient temperatures because the control module may not be able to protect the power electronics properly. If the vehicle enters limp mode or shows an overheating warning, stop safely and have it towed.



Tools that help

- OBD-II scan tool with live data and hybrid/EV module access
- Digital multimeter with backprobe pins
- Manufacturer service information with wiring diagrams and temperature-resistance charts
- Socket set and trim removal tools for sensor access
- Contact cleaner and dielectric grease for connector repair

Reading P2B23

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

Often seen with

P0A93 Inverter A Cooling System Performance · **P0C73** Hybrid Battery Pack Cooling Pump Performance · **P2B22** Hybrid/EV Electronics Coolant Temperature Sensor B Circuit L · **P2B24** Hybrid/EV Electronics Coolant Temperature Sensor C Circuit

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/p2b23/>

