

GENERIC · POWERTRAIN

P00DA

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P00DA

Ambient Air Temperature Sensor Circuit B Range/Performance

P00DA indicates that the powertrain control module has detected an out-of-range or erratic signal from the ambient air temperature sensor circuit designated as B, which is a secondary or redundant ambient temperature input on some vehicles. The computer compares this signal against expected values and other temperature inputs, and it sets the code when the voltage or calculated temperature falls outside the programmed performance window for a calibrated time.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Generic (all makes)	Low	Intermediate	Fuel and air metering and auxiliary emission controls

Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms
- Outside temperature display on the dashboard showing dashes, a fixed value, or an obviously incorrect reading
- Climate control system behaving erratically, such as blowing hot air when cold is requested or failing to enter automatic mode
- Remote start feature refusing to operate because the module cannot confirm a safe ambient temperature
- Poor fuel economy or slightly rough running during cold starts if the PCM substitutes a default ambient value
- In rare cases, a no-start condition when the ambient temperature signal is used for cold-start enrichment

Common causes, most likely first

- 1 Failed ambient air temperature sensor B, often due to corrosion or water intrusion at the sensor connector
- 2 Damaged or chafed wiring between the sensor and the control module, frequently near the front bumper or grille area
- 3 Corroded or loose electrical connector pins at the sensor or at the module harness
- 4 Open or shorted signal circuit caused by rodent damage or previous front-end repair work
- 5 Faulty control module or a software calibration issue that misinterprets the sensor B signal
- 6 A second ambient temperature sensor sharing the same reference voltage that is pulling the circuit out of range



How to diagnose and fix it

- 1 Use a scan tool to read ambient air temperature sensor B data and compare it with actual outside temperature and with sensor A if equipped
- 2 Visually inspect the sensor B location, typically behind the front bumper or grille, for physical damage, corrosion, or water intrusion
- 3 Disconnect the sensor and measure resistance across its terminals, then compare with the manufacturer's temperature-resistance chart
- 4 Backprobe the signal and ground circuits at the sensor connector to check for reference voltage and a good ground with the key on
- 5 Perform a wiggle test on the harness while watching live data to reveal intermittent wiring faults
- 6 Check for continuity and shorts to ground or voltage on the signal circuit between the sensor and the control module
- 7 Replace the sensor or repair the wiring as needed, clear the code, and verify the ambient temperature reading agrees with a known-good thermometer

Ambient sensor B faults that fool technicians

- Many vehicles use two ambient temperature sensors, and sensor B is often the one mounted lower in the bumper where it is exposed to road splash and debris, so corrosion at the connector is a far more common cause than a failed sensor element.
- A code for sensor B does not automatically mean the sensor is bad, because a shared five-volt reference circuit feeding another sensor can be pulled down and set this code even when sensor B itself tests good.
- After replacing the sensor, some vehicles require a relearn or a drive cycle before the outside temperature display updates, leading technicians to believe the repair failed when the system simply has not refreshed.
- The ambient temperature signal feeds the climate control module and the remote start module on many vehicles, so a P00DA can be accompanied by climate control or remote start complaints that seem unrelated to engine performance.
- Intermittent P00DA codes that appear only in wet weather usually point to water intrusion at a connector or a chafed wire behind the bumper rather than an internal sensor failure, so always inspect the harness routing before condemning parts.

Can I keep driving with P00DA?

The vehicle remains safe to drive because the ambient air temperature sensor B is an input for comfort and cold-start strategies rather than a critical emissions or safety component. Avoid relying on the outside temperature display or automatic climate control until the fault is repaired, and address the code promptly if you experience cold-start drivability issues.



Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter with resistance and voltage functions
- Backprobe pins or breakout leads
- Temperature-resistance chart for the specific sensor
- Basic hand tools for bumper or grille trim removal
- Contact cleaner and dielectric grease for connector repair

Reading P00DA

P	Powertrain: engine, transmission and emissions.
0	Generic (SAE) code: it means the same thing on every OBD-II vehicle.
0	Fuel and air metering and auxiliary emission controls.
DA	The exact fault within that area.

Often seen with

P0070 Ambient Air Temperature Sensor Circuit · **P0071** Ambient Air Temperature Sensor Range/Performance · **P0072** Ambient Air Temperature Sensor Circuit Low · **P00D9** Ambient Air Temperature Sensor Circuit B · **P00DB** Ambient Air Temperature Sensor Circuit B Low

See it working

Watch the animated explainer [How a Starter Motor Works: Pre-Engaged Starter](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p00da/>

