

GENERIC · POWERTRAIN

P00D9

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P00D9

Ambient Air Temperature Sensor Circuit B

P00D9 indicates that the powertrain control module has detected an electrical fault in the circuit for ambient air temperature sensor B, which is a second temperature sensor used for outside air measurement. The computer monitors the sensor signal voltage and sets this code when the reading falls outside the expected range or the circuit behaves erratically.

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 or an incorrect fixed value
- Climate control system may default to a fixed temperature strategy or stop automatic air mixing
- Remote start or battery management features may be disabled on vehicles that rely on ambient temperature
- In rare cases, poor engine idle quality or reduced fuel economy if the PCM substitutes a default value

Common causes, most likely first

- 1 Failed ambient air temperature sensor B
- 2 Damaged or corroded wiring harness between the sensor and the PCM
- 3 Loose, backed-out, or corroded sensor connector terminals
- 4 Open or short circuit in the sensor signal or ground circuit
- 5 Water intrusion into the sensor connector or sensor housing
- 6 PCM internal fault on the ambient temperature input circuit



How to diagnose and fix it

- 1 Scan all modules and record freeze-frame data to confirm the code is current and not history
- 2 Visually inspect sensor B, its connector, and the wiring for damage, corrosion, or water intrusion
- 3 Measure sensor resistance with a multimeter and compare to the manufacturer's temperature-resistance chart
- 4 Backprobe the sensor signal and ground wires at the PCM to check for opens, shorts, or excessive voltage drop
- 5 Check for technical service bulletins or software updates related to ambient temperature sensor B
- 6 Replace the sensor if resistance is out of specification or the signal is erratic when tapped or temperature-cycled
- 7 Repair or replace damaged wiring and clear codes, then verify the live data reading matches actual ambient temperature

When the sensor is not the real culprit

- A common misdiagnosis is replacing sensor B when the actual fault is a chafed wire behind the bumper or inner fender that only shorts when driving over bumps.
- Some vehicles use ambient temperature sensor B for battery thermal management or cabin air strategy, so a failure can cause subtle driveability or charging complaints that owners do not connect to the check engine light.
- The PCM may substitute a default ambient temperature value when the circuit fails, which can mask the fault and make the sensor appear to work during a quick scan.
- Water intrusion into the connector pins is a frequent cause on vehicles where the sensor is mounted low in the front bumper area, and the pins can look clean until the connector is separated.
- A faulty sensor ground shared with other sensors can set P00D9 along with unrelated codes, so always check for companion codes before condemning the sensor.

Can I keep driving with P00D9?

The vehicle remains safe to drive because this fault does not affect core engine operation, but avoid relying on the outside temperature display and have the circuit inspected soon to prevent misdiagnosis of related systems.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Wiring diagram for the specific vehicle
- Backprobe pins or piercing probes
- Heat gun and freeze spray for temperature cycling the sensor



Reading P00D9

- 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.
- D9** 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 · **P0073** Ambient Air Temperature Sensor Circuit High · **P00D8** Turbocharger/Supercharger Bypass Valve B Temperature Too High

See it working

Watch the animated explainer [How the EVAP System Works: Fuel Vapour and Leak Test](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p00d9/>

