

GENERIC · POWERTRAIN

P00AA

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P00AA

Intake Air Temperature Sensor 1 Circuit Bank 2

P00AA indicates that the powertrain control module has detected an out-of-range signal from the intake air temperature sensor located on bank 2 of the engine. The computer compares the sensor voltage to expected values and flags the circuit when the reading falls outside the normal operating window.

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

- Illumination of the check engine light, often with no other noticeable symptoms
- Rough idle or hesitation when the engine is cold
- Poor fuel economy or rich-running condition
- Black smoke from the exhaust due to over-fueling
- Hard starting or stalling shortly after startup in cold weather
- In rare cases, a slight surge or stumble during light acceleration

Common causes, most likely first

- 1 Faulty intake air temperature sensor on bank 2
- 2 Damaged or corroded wiring harness or connector at the sensor
- 3 Open or short circuit in the sensor signal or ground circuit
- 4 Intake air leak or unmetered air entering after the sensor
- 5 Contamination or oil buildup on the sensor element
- 6 Failed powertrain control module (rare)



How to diagnose and fix it

- 1 Connect an OBD-II scanner and record freeze-frame data to confirm the code and check intake air temperature readings
- 2 Visually inspect the bank 2 intake air temperature sensor, its connector, and wiring for damage, corrosion, or loose pins
- 3 Measure the sensor resistance with a multimeter and compare it to the manufacturer's temperature-resistance chart
- 4 Check the sensor signal voltage at the connector with the key on and engine off, looking for a value within specification
- 5 Perform a wiggle test on the harness while watching live data to reveal intermittent faults
- 6 Repair or replace any damaged wiring, connectors, or the sensor itself as indicated by the tests
- 7 Clear the diagnostic trouble codes and verify the repair by running the engine and confirming the intake air temperature reading is stable and plausible

What the IAT sensor code hides

- A P00AA code often appears after an intake system repair where the sensor connector was left loose or the sensor was reinstalled without a proper seal, causing an air leak that skews the reading.
- Technicians frequently replace the intake air temperature sensor only to find the real problem is a chafed wire in the harness near the intake manifold, so always perform a wiggle test before condemning the sensor.
- The intake air temperature sensor on bank 2 may share a ground circuit with other sensors, and a fault in that shared ground can set P00AA along with codes for other sensors, leading to misdiagnosis.
- On some engines, the intake air temperature sensor is integrated into the mass airflow sensor, so a faulty mass airflow sensor can trigger P00AA even though the intake air temperature element itself is fine.
- A P00AA code does not always mean the sensor has failed; extreme ambient temperatures or a recently cleared code can cause a temporary out-of-range reading that resets after a drive cycle.

Can I keep driving with P00AA?

You can generally continue driving with a P00AA code because the engine will default to a calculated intake air temperature, though fuel economy and cold-start performance may suffer slightly. Avoid heavy acceleration or towing until the fault is repaired, and address the issue promptly to prevent long-term rich-running conditions.

Tools that help

- OBD-II scanner with live data capability
- Digital multimeter
- Temperature-resistance chart for the sensor
- Wire terminal removal tools
- Basic hand tools for intake component access



Reading P00AA

- 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.
- AA** The exact fault within that area.

Often seen with

P00A9 Intake Air Temperature Sensor 2 Circuit Intermittent/Erratic · **P00AB** Intake Air Temperature Sensor 1 Circuit Range/Performance Ba · **P0102** Mass/Volume Air Flow Circuit Low Input · **P0112** Intake Air Temperature Circuit Low Input · **P0113** Intake Air Temperature Circuit High Input

See it working

Watch the animated explainer [How an Elevator Works: Traction Lift in X-Ray](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p00aa/>

