

GENERIC · POWERTRAIN

P00A7

OBD-II TROUBLE CODE

P00A7

Intake Air Temperature Sensor 2 Circuit Low Bank 2

P00A7 means the engine computer has detected a low-voltage signal on the intake air temperature sensor 2 circuit for bank 2, which is the sensor that measures the temperature of the air entering the second bank of cylinders. The computer expects a voltage within a specific range and sees a value below the minimum threshold, indicating a short to ground, an open circuit, or a sensor fault.

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

- Illuminated check engine light, often with no other symptoms
- Rough idle or poor driveability when the engine is cold
- Reduced fuel economy or incorrect air-fuel mixture
- Hesitation or stumble on acceleration
- Possible increased emissions or failed emissions test
- In rare cases, the engine may run rich or lean depending on the failure mode

Common causes, most likely first

- 1 Faulty intake air temperature sensor 2 on bank 2
- 2 Damaged or corroded wiring harness to the sensor
- 3 Short to ground in the signal circuit
- 4 Open circuit in the sensor ground or signal wire
- 5 Poor electrical connection at the sensor connector
- 6 Failed engine control module (ECM) driver circuit (less common)



How to diagnose and fix it

- 1 Scan all modules for stored and pending codes to confirm P00A7 is the only relevant fault
- 2 Inspect the sensor connector and wiring for corrosion, chafing, or loose pins
- 3 Measure sensor resistance with a multimeter and compare to the manufacturer's temperature-resistance chart
- 4 Check the signal circuit for a short to ground using a wiring diagram and multimeter
- 5 Verify reference voltage and ground at the sensor connector with the key on
- 6 Replace the intake air temperature sensor 2 if resistance is out of specification
- 7 Repair or replace damaged wiring and clear codes, then road-test to confirm the repair

What the low-voltage code really tells you

- A low-voltage reading on an intake air temperature sensor circuit often means the signal wire is shorted to ground, not that the sensor itself has failed, so inspect the harness before replacing parts.
- Some vehicles use a combined mass air flow and intake air temperature sensor, and a fault in the shared connector or internal circuit can set this code even when the temperature-sensing element is fine.
- The ECM may substitute a default intake air temperature value when this code sets, which can mask driveability symptoms and make the fault appear intermittent.
- Corrosion inside the sensor connector from road splash or engine wash is a frequent cause that a visual inspection alone may miss without disconnecting and examining the pins.
- Bank 2 intake air temperature sensor 2 is often located in the air intake tube or manifold after the throttle body, and a cracked or disconnected vacuum hose near it can cause false readings.

Can I keep driving with P00A7?

The vehicle is generally safe to drive with this code because the engine computer substitutes a default temperature value, but avoid heavy load or towing until the fault is repaired to prevent poor fuel economy or emissions issues.

Tools that help

- OBD-II scan tool
- Digital multimeter
- Wiring diagram for the specific vehicle
- Socket set and screwdrivers
- Contact cleaner and dielectric grease



Reading P00A7

- 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.
- A7** The exact fault within that area.

Often seen with

P00A5 Intake Air Temperature Sensor 2 Circuit Bank 2 · **P00A6** Intake Air Temperature Sensor 2 Circuit Range/Performance Ba · **P00A8** Intake Air Temperature Sensor 2 Circuit High Bank 2 · **P0112** Intake Air Temperature Circuit Low Input · **P0113** Intake Air Temperature Circuit High Input

See it working

Watch the animated explainer [Four-Stroke Engine Notebook: The Otto Cycle Explained](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p00a7/>

