

GENERIC · POWERTRAIN

P00EA

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P00EA

Intake Air Temperature Sensor 3 Circuit Low Bank 1

P00EA indicates that the powertrain control module has detected an abnormally low voltage signal on the intake air temperature sensor 3 circuit for bank 1, which typically means the sensor is reporting a hotter-than-actual intake air charge or the circuit is shorted to ground. The computer compares the sensor's return voltage against expected values and flags the code when the signal stays below the calibrated threshold for a set time.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Low

FIX DIFFICULTY

Intermediate

AREA

Fuel and air metering and auxiliary emission controls

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, because the fuel mixture may be too lean
- Poor fuel economy as the computer enriches the mixture based on a falsely hot intake air reading
- Elevated idle speed or unstable idle quality during warm-up
- In rare cases, a no-start condition if the sensor signal is completely shorted and the PCM misjudges air density
- Intermittent drivability issues that appear only in certain ambient temperatures or after the engine bay heat-soaks

Common causes, most likely first

- 1 A short to ground in the intake air temperature sensor 3 signal circuit, often from chafed wiring against a bracket or engine component
- 2 A failed intake air temperature sensor 3 that internally shorts and returns a permanently low voltage
- 3 Corroded, loose, or water-intruded connector pins at the sensor or at the PCM, creating unwanted resistance to ground
- 4 A shorted sensor circuit inside a shared harness with another sensor, especially where wires are routed near hot exhaust parts
- 5 A faulty powertrain control module, though this is far less common than wiring or sensor faults
- 6 Aftermarket accessories or alarm wiring tapped into the sensor circuit and pulling the signal low
- 7 A missing or damaged sensor ground that causes the signal to float low rather than a true short



How to diagnose and fix it

- 1 Connect a scan tool and record the intake air temperature 3 live data value cold and after warm-up to confirm the signal is stuck low or reading unrealistically high
- 2 Visually inspect the sensor, its connector, and the wiring harness for chafing, corrosion, or signs of rodent damage before touching any parts
- 3 Disconnect the sensor and measure resistance across its terminals, comparing to the manufacturer's temperature-resistance chart to rule out an internally shorted sensor
- 4 With the sensor unplugged and the key on, back-probe the signal circuit to check for a short to ground using a multimeter, then wiggle the harness to catch intermittent faults
- 5 Check for continuity between the sensor ground circuit and chassis ground, and repair any high-resistance ground connection that could skew the signal
- 6 If the circuit tests clean, substitute a known-good sensor and clear the code to see whether the fault returns before condemning the PCM
- 7 After repairs, clear the diagnostic trouble codes and verify the intake air temperature 3 reading tracks ambient and engine bay temperatures during a road test

What a low IAT 3 signal really means

- A low signal voltage does not automatically mean the sensor is bad, because a shorted signal wire or a poor ground will produce the same low reading and replacing the sensor will not fix it
- On vehicles with multiple intake air temperature sensors, sensor 3 is often part of a combined mass airflow or manifold absolute pressure sensor, so the fault may live inside a costly assembly rather than a stand-alone sensor
- The PCM may use intake air temperature 3 for torque management and EGR scheduling, so a low signal can cause subtle power delivery changes that drivers notice before any hard fault appears
- Heat soak after a hot shutdown can push the sensor reading high enough to trigger a low-voltage code intermittently, so the fault may not be present during a cold-morning inspection
- A code reader that only shows the stored code will miss pending or history data that reveals whether the fault is active or was a one-time glitch, so always review freeze-frame information

Can I keep driving with P00EA?

The vehicle remains safe to drive because this fault mainly affects fuel mixture accuracy and emissions rather than immediate engine safety, but avoid heavy towing or sustained high-load driving until the circuit is repaired. Have the fault diagnosed soon to prevent long-term catalyst damage from an overly rich mixture.



Tools that help

- OBD-II scan tool with live data and freeze-frame capability
- Digital multimeter with back-probe pins
- Wiring diagram for the intake air temperature sensor 3 circuit
- Contact cleaner and dielectric grease for connector repair
- Heat-shrink tubing and electrical tape for harness repairs

Reading P00EA

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

Often seen with

P00E8 Intake Air Temperature Sensor 3 Circuit Bank 1 · **P00E9** Intake Air Temperature Sensor 3 Circuit Range/Performance Ba · **P00EB** Intake Air Temperature Sensor 3 Circuit High Bank 1 · **P0112** Intake Air Temperature Circuit Low Input · **P0113** Intake Air Temperature Circuit High Input

See it working

Watch the animated explainer [How a Radiator Fan Relay Circuit Works](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p00ea/>

