

GENERIC · POWERTRAIN

P00F0

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P00F0

Intake Air Temperature Sensor 3 Circuit High Bank 2

P00F0 indicates that the powertrain control module has detected an abnormally high voltage signal on the intake air temperature sensor 3 circuit for bank 2, which typically means the sensor is reading colder than actual or the circuit is open. The computer expects the sensor's voltage to stay within a calibrated range as temperature changes, and a sustained high voltage tells it the circuit is not responding correctly.

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
- Rough idle or hesitation when the engine is cold, especially in cold weather
- Poor fuel economy or rich-running condition due to incorrect temperature input
- Black smoke from the exhaust or a strong fuel odor in extreme cases
- In rare instances, the engine may stall or run poorly after a cold start

Common causes, most likely first

- 1 Open or damaged wire in the intake air temperature sensor 3 signal circuit
- 2 Corroded, loose, or disconnected electrical connector at the sensor
- 3 Failed intake air temperature sensor 3 itself, reading open circuit
- 4 Poor ground connection for the sensor circuit, causing a reference voltage shift
- 5 Faulty powertrain control module, though this is uncommon
- 6 Aftermarket or incorrect sensor installed that does not match the vehicle's calibration



How to diagnose and fix it

- 1 Verify the code with a scan tool and check live intake air temperature data to confirm the sensor reads unrealistically cold or fixed at a default value
- 2 Visually inspect the sensor, its connector, and the wiring harness for damage, corrosion, or loose pins
- 3 Measure resistance across the sensor terminals and compare to the manufacturer's temperature-resistance chart to rule out a failed sensor
- 4 Backprobe the signal circuit at the sensor connector with the key on to check for the expected reference voltage, then check for an open circuit between the sensor and the PCM
- 5 Check the sensor ground circuit for excessive resistance or a poor ground connection
- 6 If the circuit and sensor test good, substitute a known-good sensor to see if the code clears and live data normalizes
- 7 Clear the code after repairs and verify that it does not return during a test drive with varying intake air temperatures

Why a high voltage code often means an open circuit

- A high voltage on an intake air temperature sensor circuit almost always indicates an open circuit or a sensor with very high resistance, not a sensor that is reading too hot, because the PCM pulls the signal voltage up when the circuit is broken.
- Many technicians replace the sensor first only to find the real problem is a chafed wire or corroded connector pin, so always inspect the harness before condemning the sensor.
- On some vehicles, the intake air temperature sensor 3 is integrated into a mass airflow sensor or a turbocharger inlet temperature sensor, so the repair may involve replacing an assembly rather than a standalone sensor.
- A poor ground for the sensor circuit can cause a high voltage reading that mimics a failed sensor, so check ground integrity before replacing parts.
- This code can be set by a temporary open circuit caused by vibration or water intrusion, so if the wiring passes all tests, monitor live data over several drive cycles before replacing the PCM.

Can I keep driving with P00F0?

The vehicle is generally safe to drive with this code because the PCM substitutes a default intake air temperature value, but fuel economy and cold-start performance may suffer. Avoid towing heavy loads or driving in extremely cold conditions until the fault is repaired, and address the issue promptly to prevent potential long-term effects on fuel trim and emissions.



Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Wire piercing probes or backprobe pins
- Vehicle-specific wiring diagram
- Sensor resistance specification chart

Reading P00F0

- 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.
- F0** The exact fault within that area.

Often seen with

P0096 Intake Air Temperature Sensor 2 Circuit Range/Performance · **P00EF** Intake Air Temperature Sensor 3 Circuit Low Bank 2 · **P00F1** Intake Air Temperature Sensor 3 Circuit Intermittent/Erratic · **P0112** Intake Air Temperature Circuit Low Input · **P0113** Intake Air Temperature Circuit High Input

See it working

Watch the animated explainer [How a Six-Speed Manual Gearbox Works](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p00f0/>

