

GM · POWERTRAIN

P1193

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1193 · GM

Inlet Air Temp Circuit High

P1193 on a GM vehicle means the engine control module has detected an abnormally high signal voltage from the inlet air temperature sensor circuit, which typically indicates a sensor reading colder air than is physically possible. The circuit is usually a two-wire thermistor design where high voltage corresponds to low temperature, so the computer flags the circuit as out of range on the high side.

SYSTEM

Powertrain

CODE TYPE

GM specific

SEVERITY

Low

FIX DIFFICULTY

Intermediate

AREA

Fuel and air
metering

Symptoms you may notice

- Illuminated check engine light, often with no other noticeable symptoms
- Rough idle or poor driveability when the engine is cold, because the computer misjudges air density
- Slightly reduced fuel economy as the powertrain control module substitutes a default intake air temperature value
- Hard starting or a rich-running condition on cold starts in some cases
- In rare instances, a brief stumble or hesitation during acceleration when the sensor signal is intermittent

Common causes, most likely first

- 1 Failed inlet air temperature sensor, where the internal thermistor has drifted or opened
- 2 Damaged or corroded sensor connector pins, causing high resistance in the signal circuit
- 3 Open or high-resistance wire in the signal circuit between the sensor and the powertrain control module
- 4 Poor ground connection at the sensor or at the engine block ground point
- 5 Corrosion or water intrusion in the wiring harness near the sensor, especially on vehicles with exposed intake plumbing
- 6 Faulty powertrain control module, which is rare but possible after all other causes are ruled out



How to diagnose and fix it

- 1 Connect a scan tool and record the inlet air temperature reading in degrees, then compare it to actual ambient temperature after a cold soak
- 2 Visually inspect the sensor connector and wiring for corrosion, chafing, or loose pins, and repair as needed
- 3 Measure resistance across the sensor terminals and compare to the GM temperature-resistance chart for the expected ambient temperature
- 4 Backprobe the signal circuit at the sensor and at the powertrain control module to check for an open or high-resistance wire
- 5 Check the ground circuit for excessive voltage drop while the sensor is connected and the key is on
- 6 Replace the inlet air temperature sensor if resistance testing confirms it is out of specification
- 7 Clear the diagnostic trouble code and verify the inlet air temperature reading tracks ambient temperature correctly during a road test

What a high inlet air temp code really means

- A high signal voltage on this circuit almost always means the sensor is reading colder than actual, not hotter, because the thermistor resistance rises as temperature falls.
- Many technicians replace the sensor only to find the real problem is a corroded connector pin or a chafed wire hidden inside the loom near the intake snorkel.
- On some GM engines the inlet air temperature sensor is integrated into the mass airflow sensor housing, so a faulty sensor can require replacing the entire mass airflow assembly.
- A P1193 can set intermittently from water intrusion after engine washing or heavy rain, and the code may not return once the connector dries out.
- The powertrain control module substitutes a fixed default intake air temperature when this code is active, so fuel economy and cold-start behavior may change subtly without any obvious driveability complaint.

Can I keep driving with P1193?

This code is safe to drive with in most cases because the powertrain control module substitutes a default temperature value and the engine remains driveable. Avoid heavy towing or sustained high-load driving until the fault is repaired, since the default value can slightly affect fuel delivery and emissions.

Tools that help

- Scan tool with live data capability
- Digital multimeter
- Temperature-resistance chart for the specific GM engine
- Backprobe pins or piercing probes
- Basic hand tools for connector and sensor access



Reading P1193

- P** Powertrain: engine, transmission and emissions.
- 1** Manufacturer-specific code (GM): its meaning depends on the make.
- 1** Fuel and air metering.
- 93** The exact fault within that area.

Often seen with

P0102 Mass/Volume Air Flow Circuit Low Input · **P0103** Mass/Volume Air Flow Circuit High Input · **P0111** Intake Air Temperature Circuit Range/Performance · **P0112** Intake Air Temperature Circuit Low Input · **P0113** Intake Air Temperature Circuit High Input

See it working

Watch the animated explainer [How a CVT Works: Belt and Pulley Transmission](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/gm-p1193/>

