

GM · POWERTRAIN

P1296

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1296 · GM

Loss Of 5 Volts To MAP Sensor

P1296 on a GM vehicle means the engine control module (ECM) has detected that the 5-volt reference circuit feeding the manifold absolute pressure (MAP) sensor has dropped below the expected voltage or is missing entirely. The ECM monitors this supply line because the MAP sensor needs a stable 5-volt reference to report intake manifold pressure accurately, and a loss of that voltage forces the ECM into a default strategy that can affect fuel delivery and transmission shifting.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	GM specific	Medium	Intermediate	Fuel and air metering (injector circuits)

Symptoms you may notice

- Illuminated check engine light, often with no other noticeable symptoms
- Rough idle or unstable engine speed as the ECM substitutes default MAP values
- Hesitation or poor throttle response during acceleration
- Harsh or delayed automatic transmission shifts on vehicles where the transmission uses MAP data
- Reduced fuel economy from the ECM running a richer default fuel strategy
- In some cases, the engine may stall or crank without starting if the reference voltage is completely lost

Common causes, most likely first

- 1 Chafed, pinched, or broken wire in the 5-volt reference circuit between the ECM and the MAP sensor
- 2 Corroded or loose terminals at the MAP sensor connector or the ECM connector
- 3 A short to ground on the 5-volt reference line, often from wiring rubbing against a metal bracket
- 4 A failed MAP sensor that internally shorts the reference voltage to ground
- 5 Another sensor sharing the same 5-volt reference circuit shorting internally and pulling the voltage down
- 6 A faulty ECM with an internal driver failure on the 5-volt reference output
- 7 Water intrusion into the MAP sensor connector or wiring harness causing corrosion and voltage drop



How to diagnose and fix it

- 1 Inspect the MAP sensor connector and wiring for corrosion, chafing, or loose pins, and repair as needed
- 2 Disconnect the MAP sensor and measure the 5-volt reference at the connector with the key on; if voltage is present, the sensor is likely the culprit
- 3 If the reference voltage is missing at the MAP sensor, disconnect other sensors sharing the same 5-volt reference one at a time to see if the voltage returns
- 4 Check the 5-volt reference wire for continuity to ground and for shorts to ground using a multimeter
- 5 Backprobe the ECM connector to verify the ECM is outputting the 5-volt reference; if not, check powers and grounds to the ECM before condemning it
- 6 Replace the MAP sensor if it is internally shorted and the reference voltage returns after disconnecting it
- 7 Repair or replace the ECM only after all wiring and other sensors on the reference circuit have been ruled out

Before you replace the MAP sensor

- A shorted sensor on the same 5-volt reference circuit, such as a throttle position sensor or fuel tank pressure sensor, can pull the voltage down and set P1296 even though the MAP sensor itself is fine.
- The ECM may set P1296 intermittently if the reference wire rubs through only during engine movement, so a wiggle test of the harness while monitoring voltage is often needed to catch the fault.
- On many GM vehicles, a loss of the 5-volt reference also affects the transmission shift strategy, so a harsh shift complaint can be the first clue before the check engine light appears.
- Corrosion inside the MAP sensor connector from a missing weather seal can create enough resistance to drop the reference voltage without any visible damage to the wire itself.
- Replacing the MAP sensor without checking the reference voltage at the connector first is the most common misdiagnosis and often leaves the code present after the new part is installed.

Can I keep driving with P1296?

You can usually drive the vehicle to a repair shop because the ECM substitutes default values, but avoid heavy acceleration, towing, or long trips until the fault is repaired. If the engine stalls, idles very rough, or the transmission shifts harshly, stop driving and have the vehicle towed to prevent further damage.

Tools that help

- Digital multimeter
- Backprobe pins or piercing probes
- Wiring diagram for the specific GM vehicle
- Scan tool with live data capability
- Terminal pick and electrical contact cleaner



Reading P1296

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

Often seen with

P0106 MAP/Barometric Pressure Circuit Range/Performance · **P0107** MAP/Barometric Pressure Circuit Low Input · **P0108** MAP/Barometric Pressure Circuit High Input · **P0121** Throttle Position Sensor A Circuit Range/Performance · **P0452** Evaporative Emission System Pressure Sensor/Switch Low

See it working

Watch the animated explainer [How a MAP Sensor Works: Engine Vacuum and Load](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/gm-p1296/>

