

GM · POWERTRAIN

**P1485**

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1485 · GM

## Air Injection Solenoid Circuit Open Or Shorted

P1485 on a GM vehicle means the powertrain control module (PCM) has detected an open or shorted circuit in the air injection solenoid, which controls the flow of fresh air into the exhaust during cold starts. The PCM commands the solenoid on and monitors the circuit voltage; when the voltage stays outside the expected range, it sets this code and disables the air injection system.

SYSTEM

Powertrain

CODE TYPE

GM specific

SEVERITY

Low

FIX DIFFICULTY

Intermediate

AREA

Auxiliary emission controls

### Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms
- Slight hesitation or rough idle during the first minute after a cold start
- A faint hissing or clicking noise from the engine bay when the air injection system should activate
- Failed emissions test due to increased cold-start hydrocarbon emissions
- In rare cases, a burning smell from the exhaust if the solenoid sticks open and allows air into a hot exhaust

### Common causes, most likely first

- 1 Open or shorted air injection solenoid coil winding
- 2 Corroded, loose, or damaged electrical connector at the solenoid
- 3 Broken or chafed wire in the solenoid control circuit (open or short to ground)
- 4 Failed PCM driver for the solenoid circuit (less common)
- 5 Blown fuse or poor ground connection shared with the air injection system
- 6 Internal short in the solenoid causing excessive current draw



## How to diagnose and fix it

- 1 Inspect the air injection solenoid connector for corrosion, loose pins, or damaged wiring and repair as needed
- 2 Check the solenoid circuit fuse and ground connections with a multimeter to confirm power and ground integrity
- 3 Measure the solenoid coil resistance with an ohmmeter and compare to the manufacturer's specification to identify an open or shorted coil
- 4 Disconnect the PCM and check the control wire for continuity to ground and for short-to-ground or short-to-power conditions
- 5 Command the solenoid on and off with a scan tool while listening for a click and watching for voltage changes at the solenoid
- 6 If the circuit and solenoid test good, substitute a known-good solenoid to see if the code returns
- 7 Replace the air injection solenoid if it fails electrical or functional tests, then clear the code and verify the repair with a road test

## What the P1485 circuit test really checks

- The PCM does not directly measure air flow; it only monitors the solenoid circuit current, so a mechanically stuck solenoid can still pass the electrical test and set no code.
- A common misdiagnosis is replacing the air pump when the actual fault is a corroded solenoid connector or a chafed wire behind the engine block.
- On some GM trucks and SUVs, the air injection solenoid shares a ground with the secondary air pump, and a bad ground can set P1485 along with other air injection codes.
- The solenoid is often located low on the engine near the exhaust manifold, where heat and road splash accelerate connector and wire degradation.
- After a repair, the PCM may need several cold-start cycles before it runs the full air injection monitor and turns off the light.

## Can I keep driving with P1485?

The vehicle remains safe to drive because the air injection system only affects cold-start emissions, but the check engine light will stay on and the vehicle will fail an emissions inspection. Avoid long periods of idling from a cold start until the fault is repaired.

## Tools that help

- Scan tool with bidirectional control capability
- Digital multimeter
- Test light
- Wire repair kit with crimpers and heat shrink
- Socket set and trim removal tools for access



## Reading P1485

- P** Powertrain: engine, transmission and emissions.
- 1** Manufacturer-specific code (GM): its meaning depends on the make.
- 4** Auxiliary emission controls.
- 85** The exact fault within that area.

## Often seen with

**P0410** Secondary Air Injection System Malfunction · **P0412** Secondary Air Injection System Switching Valve 'A' Circuit · **P0413** Secondary Air Injection System Switching Valve 'A' Circuit O · **P0414** Secondary Air Injection System Switching Valve 'A' Circuit S · **P0418** Secondary Air Injection System Control 'A' Circuit

## See it working

Watch the animated explainer [Engine Cooling System Trainer: How Engines Stay Cool](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/gm-p1485/>

