

GM · POWERTRAIN

P1418

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1418 · GM

Secondary Air Injection System Relay A Control Circuit High

P1418 on a GM vehicle means the powertrain control module (PCM) commanded the secondary air injection (AIR) relay A on, but the feedback circuit on the relay control wire stayed at a high voltage instead of dropping to the expected low level. The computer sees the relay control circuit stuck high and flags the AIR system as faulty, which can prevent the air pump from running during cold starts.

SYSTEM

Powertrain

CODE TYPE

GM specific

SEVERITY

Low

FIX DIFFICULTY

Intermediate

AREA

Auxiliary emission controls

Symptoms you may notice

- Illuminated check engine light, often with no other noticeable symptoms
- Slight rough idle or stumble during the first minute after a cold start
- A brief hissing or whining noise from the engine bay on cold start that stops sooner than usual
- Failed emissions test due to incomplete or failed AIR monitor
- In rare cases, a stored P1418 may be accompanied by a P0410 or P0412 code if the pump or relay also fails

Common causes, most likely first

- 1 Open or high-resistance ground circuit on the AIR relay control coil
- 2 Faulty AIR relay A (stuck open or high internal resistance)
- 3 Damaged or corroded wiring between the PCM and the AIR relay control circuit
- 4 PCM driver circuit fault for the AIR relay control output
- 5 Poor connection at the AIR relay socket or PCM connector
- 6 Aftermarket alarm or remote start wiring tapped into the AIR relay circuit



How to diagnose and fix it

- 1 Connect a scan tool and verify P1418 is current, then command the AIR relay on and off while watching the control circuit voltage
- 2 Inspect the AIR relay A and its socket for corrosion, loose pins, or burn marks, and swap the relay with a known-good identical relay to see if the code changes
- 3 Measure resistance on the relay control ground circuit from the relay socket to chassis ground, looking for more than 1 ohm
- 4 Back-probe the PCM connector at the AIR relay control terminal and check for battery voltage with the key on and engine off, then check for a drop when the relay is commanded
- 5 Trace the control wire from the PCM to the relay for chafing, pinched insulation, or corrosion at splice points, especially near the underhood fuse box
- 6 If the control circuit and relay test good, check the PCM driver with a noid light or test lamp and replace the PCM only after confirming all other circuits are intact
- 7 Clear the code and run the AIR monitor to confirm the repair before returning the vehicle

What a high relay control circuit really means

- A high control circuit voltage does not automatically mean the relay is bad; a missing ground on the relay coil will also keep the control wire pulled high, so always check the ground side first.
- On many GM trucks and SUVs, the AIR relay shares a ground splice with other underhood relays, and corrosion at that splice can set P1418 without any relay failure.
- Aftermarket remote start or alarm installers sometimes tap the AIR relay control wire for a tach signal, which backfeeds voltage and sets this code intermittently.
- The PCM may set P1418 only after a cold-start AIR monitor runs, so a vehicle that has been started warm several times may not show the code until the next morning.
- Replacing the AIR pump because of a P1418 is a common misdiagnosis; the pump is not commanded on when the relay control circuit is stuck high, so the pump itself is rarely the cause.

Can I keep driving with P1418?

You can usually keep driving with P1418 because the secondary air system only affects cold-start emissions, but avoid long periods of idling from cold and get the circuit checked before an emissions test. If the check engine light starts flashing or the engine runs rough, stop driving and diagnose further.

Tools that help

- Scan tool with bidirectional control and live data
- Digital multimeter
- Test light or noid light
- Wire piercing probes or back-probe kit
- Relay puller and known-good identical relay



Reading P1418

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

Often seen with

P1416 Port Air Circuit · **P1416** AIR System Bank 1 · **P1416** AIR System Bank 1 · **P0101** Mass/Volume Air Flow Circuit Range/Performance · **P0410** Secondary Air Injection System Malfunction · **P0412** Secondary Air Injection System Switching Valve 'A' Circuit · **P0418** Secondary Air Injection System Control 'A' Circuit

See it working

Watch the animated explainer [Car Relay Test Bench: Test 4-Pin and 5-Pin Relays](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/gm-p1418/>

