

GM · POWERTRAIN

P1442

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1442 · GM

EVAP Vacuum Switch High Voltage During Ignition On

P1442 on a GM vehicle means the powertrain control module (PCM) saw the evaporative emission (EVAP) vacuum switch signal circuit at a voltage higher than expected when the ignition was turned on. The PCM expects the switch to read a specific state before the engine starts, and a persistently high voltage tells it the switch or its wiring is not behaving as designed.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	GM specific	Low	Intermediate	Auxiliary emission controls

Symptoms you may notice

- Illuminated check engine light, often with no other noticeable symptoms
- A faint fuel odor around the vehicle if the EVAP system is not sealing properly
- Slightly rough idle or hesitation in rare cases where the switch affects purge scheduling
- Failed emissions inspection because the EVAP monitor will not complete
- No drivability change in most instances, since the fault is electrical and not fuel-delivery related

Common causes, most likely first

- 1 Faulty EVAP vacuum switch that is stuck open or has an internal short to voltage
- 2 Damaged or chafed signal wire between the vacuum switch and the PCM, shorting to a power source
- 3 Corroded or loose electrical connector at the vacuum switch or PCM
- 4 Failed PCM driver or internal pull-up resistor on the switch signal circuit
- 5 Water intrusion into the switch connector causing a high-resistance short
- 6 Aftermarket alarm or remote-start wiring tapped into the EVAP circuit incorrectly



How to diagnose and fix it

- 1 Connect a scan tool and record the EVAP vacuum switch voltage with the key on, engine off, to confirm the high reading
- 2 Inspect the vacuum switch connector and the PCM connector for corrosion, pushed pins, or loose terminals
- 3 Backprobe the switch signal wire and check for voltage with the switch disconnected; any voltage above the expected reference indicates a short
- 4 Disconnect the PCM and check the same wire for continuity to ground and to battery voltage to isolate the short
- 5 Test the vacuum switch with a hand vacuum pump and a multimeter to verify it changes state correctly
- 6 Replace the EVAP vacuum switch if it fails the electrical or vacuum test, then clear the code and run the EVAP monitor
- 7 Repair or replace the harness section if a short to voltage is found, and recheck the PCM for proper signal voltage

What the EVAP vacuum switch voltage really tells you

- A high voltage on the switch signal does not automatically mean the switch is bad; a shorted wire or a faulty PCM can produce the same reading, so always test the circuit before replacing parts.
- The EVAP vacuum switch is often confused with the vent solenoid or purge solenoid, but it is a separate sensor that only reports vacuum state, and replacing the wrong component is a common misdiagnosis.
- Water or road salt can wick into the switch connector and create a partial short that only appears in damp weather, so a dry-weather pass does not rule out the fault.
- Aftermarket accessories wired into the EVAP harness can backfeed voltage onto the signal line and set P1442 even though the factory components are healthy.
- A failed PCM is rare, but a shorted signal wire left unrepaired will damage the replacement PCM, so fix the harness first.

Can I keep driving with P1442?

You can usually keep driving with P1442 because it does not affect engine performance or safety, but the vehicle will not pass an emissions test until the fault is repaired. Avoid topping off the fuel tank past the first click, since that can push liquid fuel into the EVAP system and worsen the condition.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Hand vacuum pump with gauge
- Wire piercing probes or backprobe pins
- Electrical contact cleaner and dielectric grease



Reading P1442

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

Often seen with

P0440 Evaporative Emission Control System Malfunction · **P0442** EVAP System Leak Detected (Small) · **P0446** EVAP Vent Control Circuit Malfunction · **P0452** Evaporative Emission System Pressure Sensor/Switch Low · **P0453** Evaporative Emission System Pressure Sensor/Switch High

See it working

Watch the animated explainer [Four-Stroke Engine Cutaway: Intake to Exhaust](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/gm-p1442/>

