

GM · POWERTRAIN

P1389

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1389 · GM

No Auto Shutdown ASD Relay Output Voltage At PCM

P1389 means the powertrain control module (PCM) commanded the auto shutdown (ASD) relay on but did not see the expected voltage return on its output circuit. The PCM uses that feedback to confirm the relay is actually powering the ignition coil, fuel injectors and fuel pump, so this code points to a break or short in the ASD relay control or output wiring rather than a running fault.

SYSTEM

Powertrain

CODE TYPE

GM specific

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Ignition system and misfire

Symptoms you may notice

- Engine cranks but will not start, or starts and stalls immediately because the ASD relay never closes
- Intermittent no-start that comes and goes with vibration or temperature, often with the check engine light on
- Rough running or misfire if the ASD output voltage is present but weak or dropping out under load
- Fuel pump does not prime when the key is turned to run, since the pump is fed through the ASD relay
- Often no symptoms besides the warning light if the fault is in the feedback wire only and the relay still closes
- Other codes for injector or ignition coil circuits stored alongside P1389

Common causes, most likely first

- 1 Failed or sticking auto shutdown (ASD) relay in the underhood fuse block
- 2 Blown ASD relay fuse or a poor connection at the fuse block terminals
- 3 Open or corroded wire between the ASD relay output and the PCM feedback pin
- 4 Short to ground or short to voltage on the ASD relay control circuit from the PCM
- 5 Bad ground at the relay coil or at the PCM ground stud causing the relay not to latch
- 6 Faulty PCM driver for the ASD relay, usually after the wiring and relay have been ruled out
- 7 Water intrusion or corrosion in the underhood fuse block affecting the relay socket



How to diagnose and fix it

- 1 Scan all modules and record freeze-frame data, then clear the code and see whether P1389 returns immediately on key-on
- 2 Inspect the ASD relay fuse and swap the relay with an identical known-good relay in the same fuse block
- 3 Check for battery voltage at the ASD relay output terminal with the key on and the relay commanded on
- 4 Back-probe the PCM feedback wire and check for voltage and for continuity back to the relay output
- 5 Load-test the ASD output circuit with a bulb or test light to catch a high-resistance connection that a voltmeter misses
- 6 Check the relay coil ground and the PCM ground studs for corrosion or looseness
- 7 If all wiring and the relay test good, verify the PCM driver with a bidirectional scan tool before condemning the PCM

Why the ASD relay feedback wire fools techs

- A voltmeter can show full voltage on the ASD output while the circuit cannot carry current, so a loaded test light is the check that exposes a corroded splice or pin.
- The ASD relay feeds the ignition coil, injectors and fuel pump on most GM platforms, so a no-start with no fuel pump prime is a strong hint that P1389 is the real fault rather than a stored ghost.
- Swapping the relay with the horn or A/C relay is a valid quick test, but the relay socket terminals often spread and lose tension, so the fault can follow the socket rather than the relay.
- P1389 can set from a momentary voltage dip during cranking, so check for a weak battery or voltage drop at the fuse block before chasing the PCM.
- On some GM vehicles the ASD output is monitored only at key-on, so the code may store without any driveability complaint and reappear only after a battery disconnect or fuse block service.

Can I keep driving with P1389?

If the engine starts and runs normally, the fault may be in the feedback circuit only and short trips to a shop are reasonable, but avoid long drives because the ASD relay can drop out and stall the engine without warning. If the engine cranks and does not start, do not keep cranking; have the vehicle towed or diagnosed where it sits.

Tools that help

- OBD-II scan tool with bidirectional control and live data
- Digital multimeter with min/max recording
- Test light or load bulb for circuit load testing
- Underhood fuse block terminal pick and electrical contact cleaner
- Wiring diagram for the specific GM platform



Reading P1389

- P** Powertrain: engine, transmission and emissions.
- 1** Manufacturer-specific code (GM): its meaning depends on the make.
- 3** Ignition system and misfire.
- 89** The exact fault within that area.

Often seen with

P0200 Injector Circuit Malfunction · **P0230** Fuel Pump Primary Circuit Malfunction · **P0351** Ignition Coil A Primary/Secondary Circuit Malfunction · **P0562** System Voltage Low · **P0685** ECM/PCM Power Relay Control Circuit Open

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-p1389/>

