

VOLKSWAGEN · POWERTRAIN

P1502

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1502 · Volkswagen

Fuel Pump Relay Circuit Short To B+

P1502 on Volkswagen vehicles means the engine control module has detected a short to battery positive voltage in the fuel pump relay control circuit, which is the wire the module uses to command the relay on. The module expects this circuit to rest near ground when the relay is off and to pull to ground when commanded, so a constant B+ signal tells it the control wire is shorted to power or the relay's coil is internally shorted.

SYSTEM

Powertrain

CODE TYPE

Volkswagen
specific

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Vehicle speed,
idle control and
auxiliary inputs

Symptoms you may notice

- Often no symptoms besides the warning light, because the relay may still energize through the short and run the pump
- Engine cranks but does not start when the short holds the relay energized and floods the intake or drains the battery
- Intermittent no-start or stall, especially after the car sits or in damp weather
- Fuel pump runs continuously with the key on and even after the engine is shut off
- Battery drains overnight because the relay coil stays powered
- Rough running or rich fuel smell from excessive fuel pressure or a flooded engine

Common causes, most likely first

- 1 Fuel pump relay coil internally shorted to its power feed, keeping the control circuit at B+
- 2 Chafed or pinched control wire between the engine control module and the relay box shorting to a nearby battery positive wire
- 3 Corrosion or water intrusion in the relay socket or fuse box bridging control terminals to B+
- 4 Aftermarket alarm, remote start or fuel pump kill switch wired incorrectly into the relay control circuit
- 5 Engine control module output driver failed shorted, holding the control wire at B+
- 6 Rodent damage or harness repair with a solder bridge to a B+ wire in the same loom



How to diagnose and fix it

- 1 Scan all modules and record freeze-frame data, then clear the code and verify whether P1502 returns immediately with the key on
- 2 Locate the fuel pump relay using the underhood fuse box diagram and swap it with an identical known-good relay to see if the code changes
- 3 With the relay removed and key on, backprobe the control terminal at the relay socket to check for B+ where ground should be
- 4 Disconnect the engine control module connector and recheck the control wire for continuity to battery positive to isolate a harness short
- 5 Inspect the harness along the firewall and near the relay box for chafing, rodent damage or previous repair splices
- 6 Check for aftermarket wiring tapped into the fuel pump relay circuit and remove or correct it
- 7 If the harness and relay are good but the control terminal still shows B+, test the engine control module driver or replace the module after confirming powers and grounds

Why the pump may still run with this code

- A short to B+ on the control circuit can keep the fuel pump relay energized full time, so the pump runs whenever the key is on and sometimes after shutdown, which masks the fault as a battery drain rather than a no-start.
- Technicians often replace the fuel pump when the real problem is a relay coil shorted to its own power feed, so always ohm the relay coil and compare it to a known-good unit before condemning the pump.
- Volkswagen relay panels are prone to water ingress from a clogged plenum drain or a leaking windshield cowl, and corrosion bridging the control terminal to B+ is a common cause that a simple relay swap will not fix.
- Aftermarket remote starters and alarm systems frequently tap the fuel pump relay control wire, and a poor splice can backfeed B+ onto the circuit and set P1502 with no factory fault at all.
- This code does not always mean the relay is bad; a shorted engine control module driver can hold the control wire at B+, so verify the wire is not shorted before replacing the module.

Can I keep driving with P1502?

You can usually drive to a shop if the engine starts and runs normally, but avoid leaving the car parked with the key on and disconnect the battery if the fuel pump runs continuously after shutdown. Do not drive if the engine cranks without starting or stalls repeatedly, because a flooded engine or dead battery can leave you stranded.



Tools that help

- OBD-II scan tool with manufacturer-specific code reading
- Digital multimeter with backprobe pins
- Relay puller and known-good identical relay
- Fuse box diagram or wiring schematic for the vehicle
- Test light for checking control circuit ground command

Reading P1502

- P** Powertrain: engine, transmission and emissions.
-
- 1** Manufacturer-specific code (Volkswagen): its meaning depends on the make.
-
- 5** Vehicle speed, idle control and auxiliary inputs.
-
- 02** The exact fault within that area.

Often seen with

P0087 Fuel Rail/System Pressure - Too Low · **P0230** Fuel Pump Primary Circuit Malfunction · **P0231** Fuel Pump Secondary Circuit Low · **P0232** Fuel Pump Secondary Circuit High · **P0562** System Voltage Low

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/volkswagen-p1502/>

