

VOLKSWAGEN · POWERTRAIN

P1820

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1820 · Volkswagen

Pressure Control Solenoid 2 Short To B+

P1820 on Volkswagen vehicles means the transmission control module (TCM) has detected a short to battery positive voltage on the electrical circuit for pressure control solenoid 2, which is a valve inside the automatic transmission valve body that regulates hydraulic pressure for gear shifts. The TCM monitors the solenoid's control wire and flags this code when the voltage on that wire stays abnormally high, indicating the wire is touching a power source or the solenoid's internal coil has shorted to its power feed.

SYSTEM

Powertrain

CODE TYPE

**Volkswagen
specific**

SEVERITY

High

FIX DIFFICULTY

Professional

AREA

Transmission

Symptoms you may notice

- The transmission may enter limp mode, sticking in a single gear or refusing to shift
- Harsh or delayed gear engagements, especially when selecting drive or reverse
- The gear indicator on the dashboard may flash or show an error
- A noticeable clunk or jolt during acceleration or deceleration
- Often no symptoms besides the warning light, especially if the short is intermittent
- The engine may rev higher than normal before the transmission catches up

Common causes, most likely first

- 1 Chafed or pinched wiring harness between the TCM and the transmission, shorting the solenoid control wire to a battery-positive wire
- 2 Internal short to power inside pressure control solenoid 2 itself, often due to heat and fluid contamination
- 3 Corroded or damaged connector pins at the transmission pass-through or TCM, allowing voltage to bleed across circuits
- 4 Transmission fluid contamination or debris blocking the solenoid valve, causing it to overheat and short internally
- 5 A faulty TCM driver circuit that incorrectly applies voltage to the solenoid control wire
- 6 Aftermarket electrical accessories or poor previous repairs that routed power wires too close to the transmission harness



How to diagnose and fix it

- 1 Scan all modules for stored codes and check freeze-frame data to confirm P1820 is active and not a historical glitch
- 2 Inspect the transmission wiring harness for chafing, pinches, or contact with hot or moving components, especially near the battery and engine mounts
- 3 Disconnect the TCM and the transmission connector, then measure resistance from the solenoid 2 control wire to battery positive and to ground to check for a short
- 4 Check the solenoid's coil resistance at the transmission connector and compare it to the manufacturer's specification to rule out an internal short
- 5 If the harness and connector are sound, remove the valve body and test or replace pressure control solenoid 2
- 6 Clear the codes and perform a transmission adaptation reset or relearn procedure, then test-drive to confirm the fault does not return
- 7 If the code persists after all external checks, diagnose or replace the TCM as the last step

What a short to B+ really means here

- A short to B+ does not always mean the solenoid is dead; a rubbed-through wire in the harness can feed battery voltage into the control circuit and mimic a failed solenoid perfectly.
- Volkswagen's transmission harness runs close to the battery and starter cables on several models, so a previous repair or accessory install that rerouted wiring is a common hidden cause of this code.
- The TCM may set P1820 intermittently when the engine is cold or during heavy acceleration if the short only occurs when the harness flexes, so a wiggle test of the harness while monitoring live data is essential.
- Replacing the solenoid without checking the connector pins at the transmission pass-through often leads to a repeat failure, because corrosion there can bridge the control wire to a power feed.
- This code can be stored alongside pressure control solenoid codes for other gears, and technicians who replace every solenoid in the valve body may miss a single chafed wire that is the real culprit.

Can I keep driving with P1820?

Do not continue driving with P1820 active, because the transmission may default to limp mode without warning and cause a loss of power or a dangerous shift delay. Have the vehicle towed or driven only a very short distance to a repair shop, and avoid highway speeds or heavy loads until the fault is repaired.

Tools that help

- OBD-II scan tool with Volkswagen-specific software for live transmission data
- Digital multimeter with back-probe pins for circuit testing
- Wiring diagram for the specific Volkswagen model and transmission
- Transmission fluid drain pan and fluid level checking tools
- Torque wrench and socket set for valve body removal if needed



Reading P1820

- P** Powertrain: engine, transmission and emissions.
- 1** Manufacturer-specific code (Volkswagen): its meaning depends on the make.
- 8** Transmission.
- 20** The exact fault within that area.

Often seen with

P1819 Pressure Control Solenoid 2 Open Short To Ground · **P1819** Internal Mode Switch No Start Wrong Range · **P1822** Internal Mode Switch Circuit B High · **P1819** Transmission Neutral Safety Switch Short Circuit To Ground · **P1822** Transmission Transfer Case Clockwise Shift Relay Coil Short · **P0715** Input/Turbine Speed Sensor Circuit Malfunction · **P0741** Torque Converter Clutch Circuit Performance or Stuck Off

See it working

Watch the animated explainer [How a Jet Engine Works: Two-Spool Turbofan](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/volkswagen-p1820/>

