

VOLKSWAGEN · POWERTRAIN

**P1721**

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

## P1721 · Volkswagen

### Wheel Speed Signal 3 Range Performance

P1721 on Volkswagen vehicles indicates that the transmission control module (TCM) has detected an implausible or out-of-range signal from the wheel speed sensor designated as signal 3, which is typically the rear right sensor on most VW platforms. The TCM compares this signal against the other wheel speed sensors and flags a performance fault when the expected pulses are missing, erratic, or inconsistent during driving.

SYSTEM

**Powertrain**

CODE TYPE

**Volkswagen  
specific**

SEVERITY

**Medium**

FIX DIFFICULTY

**Intermediate**

AREA

**Transmission**

### Symptoms you may notice

- Anti-lock braking system (ABS) warning light and traction control light illuminated on the dashboard
- Transmission may enter limp mode or shift harshly due to missing wheel speed data
- Speedometer or odometer may read incorrectly or intermittently drop to zero
- Cruise control may fail to engage or disengage unexpectedly
- Often no symptoms besides the warning light, especially if the fault is intermittent

### Common causes, most likely first

- 1 Faulty wheel speed sensor at the affected corner due to internal failure or heat damage
- 2 Damaged or corroded wiring harness and connector at the sensor or along the body loom
- 3 Debris, metal shavings, or rust buildup on the sensor tip or tone ring
- 4 Worn or damaged tone ring (magnetic encoder ring) on the wheel bearing or hub
- 5 Excessive wheel bearing play causing an erratic air gap between sensor and tone ring
- 6 Water intrusion into the connector or sensor housing causing signal degradation
- 7 Rarely, a fault within the ABS control module or TCM itself



## How to diagnose and fix it

- 1 Scan all modules for fault codes and record freeze-frame data to confirm which wheel speed signal is erratic
- 2 Visually inspect the sensor, connector, and wiring at the affected wheel for damage, corrosion, or debris
- 3 Clean the sensor tip and tone ring, then clear codes and road test to see if the fault returns
- 4 Measure the sensor signal with an oscilloscope or live data while spinning the wheel to check for dropouts
- 5 Check the tone ring for cracks, missing segments, or contamination and replace the hub or bearing if damaged
- 6 Replace the wheel speed sensor if the signal is consistently poor and wiring checks out
- 7 If all external components are good, test the ABS module and TCM for internal faults before replacement

## What most technicians overlook on P1721

- A dirty or rusted tone ring often mimics a failed sensor, so cleaning the ring and sensor tip can resolve the code without parts replacement.
- Volkswagen models with independent rear suspension can suffer from chafed wiring where the harness flexes near the wheel arch, causing intermittent signal loss.
- The code may set only during specific driving conditions such as low-speed turns or ABS activation, so a simple stationary scan may not reveal the fault.
- Aftermarket brake pads or rotors with incorrect dimensions can alter the air gap and trigger a wheel speed performance code on some VW platforms.
- A weak battery or charging system fault can cause the ABS module to log spurious wheel speed codes, so always verify system voltage first.

## Can I keep driving with P1721?

You can drive the vehicle cautiously to a repair shop, but avoid heavy braking, sharp turns, or slippery conditions because ABS and traction control may be disabled. If the transmission shifts harshly or enters limp mode, limit driving to low speeds and seek service promptly.

## Tools that help

- OBD-II scan tool with live data and ABS/transmission module access
- Digital multimeter for wiring and voltage checks
- Oscilloscope for waveform analysis of the wheel speed sensor signal
- Jack and axle stands for wheel-off inspection
- Basic hand tools for sensor and connector removal



## Reading P1721

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

## Often seen with

**P1722** Auto Trans Diagnosis Input Signal High Input · **P1720** Vehicle Speed Sensor 2 Signal Error · **P1722** Gear 2 Incorrect Ratio · **P1720** Vehicle Speed Meter Circuit · **P1722** Stall Speed · **P1720** Vehicle Speed Meter Circuit Malfunction · **P1722** Gear 2 Incorrect Ratio · **C0035** Left Front Wheel Speed Sensor Circuit Range/Performance · **P0501** Vehicle Speed Sensor Range/Performance · **P0720** Output Speed Sensor Circuit Malfunction

## See it working

Watch the animated explainer [How ABS Works: Anti-Lock Brakes in X-Ray](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/volkswagen-p1721/>

