



P0977

Shift Solenoid 'B' Control Circuit High

P0977 indicates that the transmission control module (TCM) has detected an abnormally high voltage on the control circuit for shift solenoid 'B', which is used to manage gear shifts. The TCM expects the circuit voltage to be within a specific range when the solenoid is commanded on or off, and a high reading suggests an open circuit, a short to voltage, or a faulty solenoid.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Generic (all makes)	Medium	Professional	Transmission

Symptoms you may notice

- The check engine light or transmission warning light illuminates on the dashboard.
- The transmission may enter limp mode, limiting the vehicle to a single gear or a reduced set of gears.
- Harsh or delayed gear shifts, or the transmission may fail to shift at all.
- The engine may rev unusually high or low during acceleration due to incorrect gear selection.
- Often no symptoms besides the warning light, especially if the fault is intermittent.

Common causes, most likely first

- 1 A faulty shift solenoid 'B' with an open internal coil or high resistance.
- 2 Damaged or corroded wiring or connectors in the solenoid control circuit, causing an open circuit.
- 3 A short to voltage in the wiring between the TCM and the solenoid.
- 4 A failed transmission control module (TCM) or internal driver circuit.
- 5 Poor electrical connections at the transmission pass-through connector or ground points.
- 6 Contamination or debris in the transmission fluid interfering with solenoid operation.

How to diagnose and fix it

- 1 Use an OBD-II scanner to retrieve the code and check for any related transmission codes.
- 2 Inspect the transmission fluid level and condition for signs of contamination or burning.
- 3 Visually inspect the wiring harness and connectors at the solenoid and TCM for damage or corrosion.
- 4 Measure the resistance of shift solenoid 'B' with a multimeter and compare to the manufacturer's specification.
- 5 Check for voltage on the control circuit with the key on and engine off to identify a short to voltage.
- 6 Test the TCM output signal with an oscilloscope or a bidirectional scan tool if available.
- 7 Replace the faulty solenoid, repair wiring, or replace the TCM as needed, then clear the code and verify the repair.



Don't overlook the wiring harness

- A common cause of P0977 is a chafed or broken wire in the harness near the transmission, often due to heat or vibration, which can be missed if only the solenoid is tested.
- The code can set intermittently due to a poor connection at the transmission pass-through connector, so wiggle-testing the harness while monitoring live data is a valuable step.
- A high voltage reading does not always mean the solenoid is defective; a short to voltage elsewhere in the circuit can produce the same code.
- Some vehicles use a single solenoid for multiple functions, so a failure may affect several gears and mimic other transmission problems.
- After repairs, the TCM may need to relearn adaptive shift strategies, so a scan tool with transmission reset capabilities is often required.

Can I keep driving with P0977?

If the vehicle is in limp mode or shifting erratically, avoid highway driving and seek repair promptly to prevent transmission damage. If only the warning light is on and the vehicle drives normally, you can drive cautiously to a workshop, but avoid heavy loads or aggressive acceleration.

Tools that help

- OBD-II scanner with transmission code reading capability
- Digital multimeter
- Oscilloscope (optional for advanced diagnostics)
- Vehicle-specific service information for resistance specifications
- Socket set and trim removal tools for accessing wiring and solenoids

Reading P0977

P	Powertrain: engine, transmission and emissions.
0	Generic (SAE) code: it means the same thing on every OBD-II vehicle.
9	Transmission.
77	The exact fault within that area.

Often seen with

P0700 Transmission Control System Malfunction · **P0750** Shift Solenoid 'A' · **P0976** Shift Solenoid 'B' Control Circuit Low · **P0978** Shift Solenoid 'C' Control Circuit Range/Performance · **P0979** Shift Solenoid 'C' Control Circuit Low



See it working

Watch the animated explainer [How an Automatic Transmission Works, Gear by Gear](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p0977/>

