

GENERIC · POWERTRAIN

# P0701

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

## P0701

### Transmission Control System Range/Performance

P0701 is a generic powertrain code indicating that the transmission control module (TCM) or powertrain control module (PCM) has detected a range or performance fault within the electronic transmission control system. The computer monitors inputs and outputs such as solenoid commands, speed sensor signals, and internal calculations, and it sets this code when the overall system performance falls outside the expected range for a calibrated period.

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

#### Symptoms you may notice

- Illumination of the malfunction indicator lamp (MIL) with no other noticeable symptoms
- Harsh or delayed shifting, or the transmission entering limp mode with a single gear engaged
- Erratic shift points or failure to downshift when accelerating
- Transmission slipping or flaring during gear changes
- Inconsistent engagement of gears or a clunk when selecting drive or reverse
- Reduced fuel economy or unusual engine RPM at highway speeds

#### Common causes, most likely first

- 1 Low or contaminated transmission fluid, or fluid that is overdue for replacement
- 2 Faulty transmission control module (TCM) or powertrain control module (PCM) software or hardware
- 3 Damaged or corroded wiring and connectors in the transmission control circuit
- 4 Malfunctioning shift solenoid or pressure control solenoid
- 5 Failed transmission speed sensor (input or output) sending erratic signals
- 6 Internal transmission mechanical wear affecting hydraulic pressure and shift timing
- 7 Poor ground connection or voltage supply issue to the TCM



## How to diagnose and fix it

- 1 Check transmission fluid level and condition; top off or replace fluid if contaminated or low
- 2 Perform a visual inspection of the transmission wiring harness and connectors for chafing, corrosion, or loose pins
- 3 Use a scan tool to read live data and compare commanded versus actual solenoid states and speed sensor readings
- 4 Test the shift solenoids and pressure control solenoid for resistance and function according to the manufacturer's specifications
- 5 Verify TCM power and ground circuits, and check for technical service bulletins (TSBs) or software updates for the TCM
- 6 If electrical and hydraulic checks pass, perform a transmission pressure test and inspect internal components for wear
- 7 Clear the code after repairs and conduct a road test to confirm the fault does not return

## What P0701 really tells you about the transmission

- P0701 is often set by a momentary voltage glitch or a low battery, so always check the charging system and battery condition before condemning the transmission.
- A dirty or failing mass airflow (MAF) sensor or throttle position sensor (TPS) can cause shift quality issues that mimic a transmission control fault, so scan all systems for related codes.
- Some vehicles require a relearn or adaptive learning reset after transmission repairs; skipping this step can cause the code to reappear even when the hardware is fine.
- The code does not always indicate a failed transmission; it can be triggered by a simple loose ground or a faulty brake pedal switch that affects shift interlock logic.
- Aftermarket transmission fluid that does not meet the manufacturer's specification can cause solenoid performance issues and set P0701 without any hard part failure.

## Can I keep driving with P0701?

You can usually drive the vehicle to a repair shop if the transmission still shifts and the vehicle is not in limp mode, but avoid heavy acceleration, towing, or long trips until the fault is diagnosed. If the transmission is stuck in one gear or slipping severely, stop driving and arrange a tow to prevent further damage.

## Tools that help

- OBD-II scan tool with live data and transmission module access
- Digital multimeter for circuit and solenoid testing
- Transmission fluid level dipstick or scan tool fluid level procedure
- Factory service information for wiring diagrams and solenoid specifications
- Transmission pressure gauge for hydraulic testing



### Reading P0701

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

### Often seen with

**P0700** Transmission Control System Malfunction · **P0702** Transmission Control System Electrical · **P0703** Torque Converter/Brake Switch B Circuit Malfunction · **P0705** Transmission Range Sensor Circuit Malfunction · **P0715** Input/Turbine Speed Sensor Circuit Malfunction

### 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/p0701/>

