

GM · POWERTRAIN

P1700

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1700 · GM

## Transmission Indeterminate Failure

P1700 on a GM vehicle means the transmission control module (TCM) has detected an internal condition it cannot attribute to a specific sensor or solenoid circuit, so it flags an indeterminate transmission failure. The computer is not pointing to one failed part; it is reporting that its self-checks and rationality tests produced conflicting or out-of-range results that do not match any single defined fault.

| SYSTEM     | CODE TYPE   | SEVERITY | FIX DIFFICULTY | AREA         |
|------------|-------------|----------|----------------|--------------|
| Powertrain | GM specific | Medium   | Professional   | Transmission |

### Symptoms you may notice

- Illumination of the check engine light or transmission warning light, often with no other symptoms besides the warning light
- Transmission stuck in a default or limp-home gear, usually second or third, with harsh or delayed shifts
- Erratic shift timing or shuddering during acceleration that does not follow a consistent pattern
- Reduced fuel economy or higher engine rpm at highway speed because the torque converter clutch may not lock
- Intermittent loss of power or a brief neutral feel while driving, sometimes accompanied by a stored pending code
- No drivability complaint at all, with the code appearing only during a scan of stored history

### Common causes, most likely first

- 1 Low or degraded automatic transmission fluid (ATF) causing erratic hydraulic pressure and confused TCM rationality checks
- 2 A failing or contaminated transmission fluid pressure switch or manifold pressure switch assembly sending inconsistent signals
- 3 Wiring harness chafing or corrosion at the transmission connector, especially where the loom passes near heat or sharp edges
- 4 A weak or failing transmission control module (TCM) or powertrain control module (PCM) with internal fault memory corruption
- 5 A sticking or worn shift solenoid or torque converter clutch (TCC) solenoid that does not respond within the expected window
- 6 Internal mechanical wear in the valve body or clutch packs that produces pressure and slip values outside the TCM's expected range
- 7 A weak battery or poor ground connection causing voltage spikes that disturb TCM self-diagnostics



## How to diagnose and fix it

- 1 Scan all modules for stored and pending codes, record freeze-frame data, and check for related transmission codes before clearing anything
- 2 Inspect the transmission fluid level, color, and smell, and check for leaks or contamination that would explain erratic hydraulic behavior
- 3 Visually inspect the transmission wiring harness and connector pins for chafing, corrosion, or loose terminals, and perform a wiggle test while watching live data
- 4 Check battery voltage and ground straps, including the engine-to-body and transmission-to-chassis grounds, to rule out electrical noise
- 5 Use a scan tool to monitor transmission pressure switch states, solenoid command versus actual response, and slip data during a road test
- 6 Perform the manufacturer's pinpoint diagnostic procedure for P1700, which typically includes resistance and voltage checks at the TCM connector
- 7 Repair or replace the confirmed faulty component, clear codes, and verify with a relearn or adaptive drive cycle that the code does not return

## Why P1700 is rarely a single failed part

- P1700 is a catch-all rationality code, so technicians who replace the TCM first often find the code returns because the real cause was a chafed wire or low fluid level.
- A weak battery or failing alternator can set P1700 on GM vehicles because voltage dips during cranking disturb the TCM's internal self-test, and the transmission itself may be perfectly healthy.
- Fluid pressure switch assemblies on GM transmissions commonly degrade internally and produce intermittent contradictory signals that the TCM interprets as an indeterminate failure rather than a specific switch code.
- After any transmission repair, the TCM adaptive learning must be reset and a relearn drive cycle completed, or P1700 can reappear simply because the old shift adaptives no longer match the repaired hardware.
- A loose or corroded ground at the transmission case or engine block can mimic an internal transmission failure, so ground integrity deserves checking before any internal diagnosis.

## Can I keep driving with P1700?

You can usually drive the vehicle to a shop if the transmission still engages and shifts, but avoid heavy acceleration, towing, or long highway trips because limp-home mode and harsh shifts can worsen internal wear. If the transmission slips, flares, or drops into neutral while driving, stop and arrange a tow rather than continuing.



## Tools that help

- Scan tool with GM-specific transmission live data and bidirectional control
- Digital multimeter for circuit resistance and voltage drop tests
- Transmission fluid level gauge or dipstick and clean drain pan
- Wiring diagram and pinout for the TCM and transmission connector
- Test light or logic probe for quick circuit integrity checks
- Breaker bar and socket set for ground strap and connector access

## Reading P1700

|           |                                                                   |
|-----------|-------------------------------------------------------------------|
| <b>P</b>  | Powertrain: engine, transmission and emissions.                   |
| <b>1</b>  | Manufacturer-specific code (GM): its meaning depends on the make. |
| <b>7</b>  | Transmission.                                                     |
| <b>00</b> | The exact fault within that area.                                 |

## Often seen with

**P1810** ATF Pressure Manual Valve Position Switch Malfunction · **P1810** TFP Valve Position Switch Circuit Transmission 4-Wheel Drive · **P0700** Transmission Control System Malfunction · **P0715** Input/Turbine Speed Sensor Circuit Malfunction · **P0740** Torque Converter Clutch Circuit Malfunction · **P0750** Shift Solenoid 'A'

## 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/gm-p1700/>

