

NISSAN · POWERTRAIN

P1709

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1709 · Nissan

Automatic Transmission System Malfunction

P1709 on Nissan vehicles indicates that the Transmission Control Module (TCM) has detected a general malfunction within the automatic transmission system, often related to the Controller Area Network (CAN) communication bus or internal TCM faults. The TCM sets this code when it cannot reliably exchange data with the Engine Control Module (ECM) or when transmission sensor signals fall outside expected ranges, prompting a fail-safe mode.

SYSTEM

Powertrain

CODE TYPE

Nissan specific

SEVERITY

Medium

FIX DIFFICULTY

Professional

AREA

Transmission

Symptoms you may notice

- Illumination of the Check Engine Light (CEL) or Transmission Warning Light on the dashboard
- Transmission stuck in a single gear (limp mode) with harsh or delayed shifts
- Erratic or inconsistent shifting patterns during acceleration or deceleration
- Reduced engine performance or poor fuel economy due to limited gear selection
- Sometimes no noticeable symptoms besides the warning light, especially if the fault is intermittent

Common causes, most likely first

- 1 Faulty or chafed wiring in the CAN bus between the TCM and ECM, including poor grounds or corrosion at connectors
- 2 Internal failure of the Transmission Control Module (TCM) or its power supply circuit
- 3 Malfunctioning transmission sensors such as the input or output speed sensors, or the transmission range sensor
- 4 Low or contaminated automatic transmission fluid (ATF) causing erratic sensor readings
- 5 Software glitch or outdated calibration in the TCM requiring reprogramming
- 6 Faulty valve body or solenoid pack affecting hydraulic control and sensor feedback
- 7 Loose or corroded battery terminals or a weak battery causing voltage drops that disrupt module communication



How to diagnose and fix it

- 1 Perform a thorough visual inspection of the battery terminals, grounds, and TCM/ECM connectors for corrosion or looseness; clean and tighten as needed
- 2 Check the automatic transmission fluid level and condition; top off or replace fluid if it is low or burnt
- 3 Use a scan tool to retrieve all stored codes and freeze-frame data, then clear codes and test-drive to see if P1709 returns
- 4 Conduct a voltage drop test on the CAN bus wiring and measure resistance between CAN High and CAN Low to rule out wiring faults
- 5 Test the input and output speed sensors and the transmission range sensor with a multimeter or oscilloscope, replacing any that are out of specification
- 6 If wiring and sensors are good, reprogram the TCM with the latest factory software using a compatible scan tool
- 7 If the code persists after all checks, replace the TCM and perform the required initialization and adaptation procedures

Before you replace the transmission control module

- A weak or failing battery is a common culprit for P1709 on Nissans because voltage drops during cranking can corrupt CAN bus messages and trigger communication faults.
- Corroded or loose ground connections, especially the engine-to-chassis ground strap, often cause intermittent P1709 codes that disappear after cleaning.
- The code can be set by a faulty transmission range sensor or a misadjusted selector lever, which many technicians overlook when focusing on the TCM.
- After replacing the TCM, some Nissan models require a relearn procedure for the idle and shift adaptives; skipping this step can cause harsh shifting and a repeat code.
- P1709 is sometimes stored alongside U0100 or U0101 (CAN communication codes), indicating the root cause is a network issue rather than an internal transmission failure.

Can I keep driving with P1709?

If the transmission is in limp mode or shifting harshly, avoid highway driving and seek service promptly to prevent further damage. If the only symptom is the warning light and the vehicle drives normally, you can drive cautiously to a repair shop, but avoid heavy acceleration or towing.

Tools that help

- OBD-II scan tool with Nissan-specific software for reading TCM codes and live data
- Digital multimeter for voltage, resistance, and continuity tests
- Oscilloscope for analyzing CAN bus signals
- Factory service information for wiring diagrams and TCM reprogramming procedures
- Basic hand tools for inspecting connectors and grounds



Reading P1709

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

Often seen with

P0700 Transmission Control System Malfunction · **P0715** Input/Turbine Speed Sensor Circuit Malfunction · **P0720** Output Speed Sensor Circuit Malfunction · **U0100** Lost Communication With ECM/PCM A · **U0101** Lost Communication with TCM

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/nissan-p1709/>

