

NISSAN · POWERTRAIN

P1780

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1780 · Nissan

Transmission Control Switch Circuit Overdrive Off Switch Not Cycled During The Self Test

P1780 on Nissan vehicles means the transmission control module (TCM) did not see the overdrive off switch cycled during its self-test routine. The TCM expects a specific on-off signal from the overdrive cancel switch when the ignition is turned on, and if that voltage pattern never appears, it stores this code and may disable overdrive operation.

SYSTEM

Powertrain

CODE TYPE

Nissan specific

SEVERITY

Low

FIX DIFFICULTY

Intermediate

AREA

Transmission

Symptoms you may notice

- The overdrive off indicator light on the instrument cluster may flash or stay illuminated continuously.
- The transmission may refuse to enter overdrive, causing higher engine RPM at highway speeds and reduced fuel economy.
- The shift lever button may feel normal but produce no change in transmission behavior when pressed.
- Often no symptoms besides the warning light, especially if the switch was simply not cycled during a recent battery service or self-test.
- In some cases the transmission may default to a limp or fail-safe mode with firmer shifts and limited gear selection.
- The cruise control may become inoperative on models where overdrive and cruise share switch logic.

Common causes, most likely first

- 1 The overdrive off switch was not pressed during the TCM self-test after the battery was disconnected or the codes were cleared.
- 2 A faulty overdrive cancel switch with worn or dirty internal contacts that fail to send a clean signal.
- 3 A broken or chafed wire in the circuit between the overdrive switch and the TCM, often at the shift lever or steering column.
- 4 Corroded or loose electrical connectors at the switch, the TCM, or an intermediate harness junction.
- 5 A blown fuse or poor ground affecting the switch circuit, though this usually sets additional codes.
- 6 A TCM that has failed to register the switch input due to internal fault or corrupted adaptive memory.
- 7 Aftermarket remote start or alarm wiring that backfeeds or interrupts the overdrive switch circuit.



How to diagnose and fix it

- 1 Clear the code and perform the TCM self-test procedure exactly as outlined in the factory service manual, including cycling the overdrive switch when prompted.
- 2 Inspect the overdrive switch for mechanical binding and test its continuity with a multimeter while pressing and releasing the button.
- 3 Check the wiring harness at the shift lever and along the steering column for chafed insulation, broken strands, or loose pins.
- 4 Verify battery voltage and ground integrity at the TCM connector, looking for corrosion or backed-out terminals.
- 5 Measure the signal voltage at the TCM pin for the overdrive switch while an assistant cycles the switch, comparing to specification.
- 6 If the switch and wiring test good, substitute a known-good TCM or perform a relearn procedure with a factory scan tool.
- 7 After repair, road test the vehicle to confirm overdrive engages and the code does not return after a complete drive cycle.

Why the overdrive switch self-test matters

- Many P1780 codes are set simply because a technician or owner cleared codes or replaced the battery and then started the engine without cycling the overdrive switch during the self-test window.
- The overdrive switch on many Nissan models is part of the shift lever assembly, and spilled drinks or physical wear can cause intermittent contact that only fails when the lever is in a certain position.
- A scan tool that shows the overdrive switch status as 'OFF' when the button is pressed does not guarantee the TCM is seeing a clean ground signal; voltage drop testing at the TCM pin is the reliable check.
- This code can appear alongside transmission solenoid codes when a shared ground or power circuit is compromised, so always check for other stored codes before condemning the switch.
- On some Nissan trucks and SUVs, the overdrive switch shares a circuit with the tow/haul mode or manual shift buttons, and a fault in any of those can trigger P1780.

Can I keep driving with P1780?

You can usually continue driving with P1780 because the vehicle remains safe, but you may notice higher RPM and reduced fuel economy if overdrive is disabled. Avoid heavy towing or high-speed cruising until the switch circuit is repaired, and do not clear the code repeatedly without performing the self-test properly.



Tools that help

- Factory service manual or equivalent wiring diagram for the specific Nissan model
- Digital multimeter with back-probe pins
- OBD-II scan tool capable of reading Nissan manufacturer-specific codes and TCM data
- Trim removal tools for shift lever and column covers
- Jumper wire with fused leads for circuit testing

Reading P1780

P Powertrain: engine, transmission and emissions.

1 Manufacturer-specific code (Nissan): its meaning depends on the make.

7 Transmission.

80 The exact fault within that area.

Often seen with

P1775 Hydraulic Pressure Sensor 1 Adaptation At Limit · **P1775** Torque Down Signal 1 Circuit · **P1775** Transmission System MIL Fault · **P0705** Transmission Range Sensor Circuit Malfunction · **P0706** Transmission Range Sensor Circuit Range/Performance · **P0715** Input/Turbine Speed Sensor Circuit Malfunction · **P0720** Output 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/nissan-p1780/>

