

NISSAN · POWERTRAIN

**P1781**

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

## P1781 · Nissan

# Transmission 4x4 Low Switch Out Of Range Fault

P1781 on Nissan vehicles indicates that the transmission control module (TCM) has detected an out-of-range signal from the 4x4 low switch, which is part of the transfer case position sensing circuit. The TCM expects the switch to report either a solid low-range engagement or a clear disengagement, but the voltage or resistance it sees falls outside the valid window, so it flags the circuit as faulty.

SYSTEM

Powertrain

CODE TYPE

Nissan specific

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Transmission

## Symptoms you may notice

- The 4x4 low indicator light may flash or fail to illuminate when low range is selected.
- The transfer case may not engage or disengage low range, leaving the vehicle stuck in high range.
- The transmission may shift harshly or hold gears longer than normal as the TCM defaults to a limp strategy.
- A warning light or message on the dash may appear, often accompanied by a stored P1781 code.
- Often no symptoms besides the warning light, especially if the switch signal is only intermittently out of range.

## Common causes, most likely first

- 1 Failed or contaminated 4x4 low switch on the transfer case, causing erratic resistance values.
- 2 Damaged, corroded, or chafed wiring between the switch and the TCM, often near the transfer case or under the vehicle.
- 3 Loose or corroded connector pins at the switch or TCM harness, leading to intermittent open or short circuits.
- 4 Water intrusion into the switch connector or transfer case area, common after off-road driving or deep water crossings.
- 5 Internal transfer case mechanical wear that prevents the switch from seeing the correct plunger position.
- 6 A faulty TCM that misinterprets a valid switch signal, though this is less common than wiring or switch issues.



## How to diagnose and fix it

- 1 Inspect the 4x4 low switch connector and wiring for corrosion, water intrusion, or physical damage, and clean or repair as needed.
- 2 Test the switch with a multimeter for continuity or resistance in both engaged and disengaged positions, comparing to Nissan specifications.
- 3 Check the switch signal voltage at the TCM connector while cycling the transfer case lever to confirm the TCM is receiving the correct input.
- 4 Perform a wiggle test on the harness while monitoring live data to catch intermittent wiring faults that only appear under vibration.
- 5 Replace the 4x4 low switch if it fails the resistance or continuity test, then clear the code and verify proper operation.
- 6 If the switch and wiring test good, check for transfer case mechanical binding or incorrect shift linkage adjustment that prevents full switch actuation.
- 7 As a last resort, diagnose the TCM for internal faults only after all external circuits are proven good, following Nissan diagnostic flowcharts.

## Before you replace the transfer case switch

- A common misdiagnosis is replacing the TCM when the real problem is a chafed wire near the transfer case that only shorts when the vehicle flexes off-road.
- The 4x4 low switch often fails intermittently, so a static resistance test can pass while the code still sets during driving; always wiggle-test the harness and check live data.
- Water intrusion from deep water crossings or pressure washing can corrode the switch connector pins, causing out-of-range signals without any mechanical transfer case issue.
- A loose transfer case shift linkage or worn detent can prevent the switch from fully actuating, mimicking a failed switch even when the switch itself is good.
- This code does not always mean the transfer case is damaged; many cases are resolved by cleaning connector terminals and applying dielectric grease.

## Can I keep driving with P1781?

You can usually drive the vehicle in high range, but avoid relying on 4x4 low and do not attempt off-road or heavy-load driving until the fault is repaired. If the transmission shifts harshly or the vehicle feels stuck in a limp mode, keep speeds low and schedule service promptly.



## Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Wire piercing probes or back probe pins
- Dielectric grease and electrical contact cleaner
- Vehicle-specific service information for switch resistance specifications

## Reading P1781

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

## Often seen with

**P1780** Engine Intervention Readable · **P1782** Engine Torque Reduction Short To B+ · **P1780** Park Neutral Position Switch Malfunction Only For A/T · **P1780** Transmission Control Switch Circuit Overdrive Off Switch Not · **P1783** Transmission Fluid Temperature High Input · **P1780** Modulation Pressure Switchover Valve ATCC Y34 Or Upshift Del · **P1780** Transmission Control Switch Circuit, Overdrive Off Switch No · **P1783** Transmission Fluid Temperature High Input · **P1780** Park/Neutral Position Switch Circuit · **P1780** Transmission Control Switch Circuit is Out of Self-Test Rang · **P1782** P/ES Circuit Out Of Self Test Range · **P1783** Transmission Over-Temperature Condition · **P1780** CAN Torque Reduction · **P0700** Transmission Control System Malfunction · **P0705** Transmission Range 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-p1781/>

