

FORD · POWERTRAIN

P1780

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1780 · Ford

Transmission Control Switch Circuit is Out of Self-Test Range

P1780 on Ford vehicles means the transmission control switch (TCS) circuit, which is the overdrive lockout button on the shift lever, is reading a voltage outside the range the powertrain control module (PCM) expects during its self-test. The PCM monitors the switch signal and flags this code when the circuit is open, shorted, or stuck, preventing reliable overdrive cancel operation.

SYSTEM

Powertrain

CODE TYPE

Ford specific

SEVERITY

Low

FIX DIFFICULTY

Intermediate

AREA

Transmission

Symptoms you may notice

- The overdrive off (O/D OFF) indicator light may flash or stay illuminated continuously
- The transmission may refuse to enter overdrive, holding lower gears at highway speeds
- The overdrive cancel button may feel unresponsive or fail to change the shift pattern
- Some drivers notice no symptoms besides the warning light, especially if the fault is intermittent
- Harsh or delayed shifts may occur if the PCM defaults to a limp-home strategy
- The cruise control may be disabled on some Ford models because it shares the switch circuit

Common causes, most likely first

- 1 Broken or chafed wires in the steering column or shift lever harness where the TCS wiring flexes
- 2 Failed transmission control switch (overdrive button) internal contacts
- 3 Corroded or loose connector at the shift lever or inline harness connector
- 4 Open circuit in the signal or ground wire between the TCS and the PCM
- 5 Short to ground or short to voltage on the TCS signal circuit
- 6 Faulty PCM driver or internal pull-up resistor (rare but possible after other causes are ruled out)



How to diagnose and fix it

- 1 Connect a scan tool and verify P1780 is current, then check the TCS PID to see if the PCM recognizes button presses
- 2 Inspect the shift lever and steering column wiring for chafing, pinching, or broken strands, flexing the harness while watching the PID
- 3 Disconnect the TCS connector and measure resistance across the switch in both pressed and released states, comparing to Ford specifications
- 4 Check for continuity and short-to-ground on the signal and ground wires from the TCS connector to the PCM connector
- 5 Clean and reseat all inline connectors, applying dielectric grease to prevent future corrosion
- 6 Replace the transmission control switch if resistance tests are out of range or the switch is mechanically sticky
- 7 Clear the code and perform a road test to confirm the O/D OFF light and overdrive function operate correctly

Why the overdrive button code misleads

- A common oversight is replacing the PCM before checking the shift lever harness, where repeated flexing breaks the TCS wire inside intact-looking insulation.
- The TCS circuit often shares a ground or signal path with the cruise control on Ford trucks and SUVs, so a cruise control fault can set P1780 without any overdrive button problem.
- Intermittent P1780 codes that appear only on rough roads usually point to a loose connector or chafed wire, not a failed switch, so wiggle testing the harness is essential.
- Some Ford models require the TCS to be pressed during a specific self-test sequence; a code can set if the button is held or released at the wrong time during diagnostics.
- Aftermarket remote starters or alarm systems tapped into the shift lever wiring frequently disturb the TCS signal and cause this code to reappear after repairs.

Can I keep driving with P1780?

You can usually drive safely with P1780 because the transmission defaults to normal overdrive operation, but avoid towing or heavy loads if the O/D OFF light is flashing since the PCM may limit shift scheduling. Have the circuit inspected soon to prevent cruise control or shift quality issues from worsening.

Tools that help

- OBD-II scan tool with live data and Ford-specific PIDs
- Digital multimeter with resistance and continuity functions
- Wire piercing probes or back-probe kit
- Trim removal tools for shift lever and column covers
- Dielectric grease and electrical contact cleaner



Reading P1780

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

Often seen with

P1781 Engine Torque Reduction Open Short To Ground · **P1781** Transmission 4x4 Low Switch Out Of Range Fault · **P1783** Transmission Fluid Temperature High Input · **P1781** Upshift Delay Switchover Valve ATCC Y35
 · **P1781** Transmission 4x4 Low Switch Out Of Range Fault · **P1783** Transmission Fluid Temperature High Input
 · **P1781** 4x4 Low Switch is Out of Self-Test Range · **P1783** Transmission Over-Temperature Condition ·
P0705 Transmission Range Sensor Circuit Malfunction · **P0706** Transmission Range Sensor Circuit Range/Performance · **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/ford-p1780/>

