

GENERIC · POWERTRAIN

P07F3

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P07F3

Transmission Range Control Module Communication Circuit Low

P07F3 indicates that the transmission range control module (TRCM) has detected a low-voltage condition on its dedicated communication circuit, which is the data link it uses to report gear range and status to other modules. The computer sets this code when the voltage on that circuit falls below the expected threshold, typically due to a short to ground, an open circuit, or a faulty module.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Medium

FIX DIFFICULTY

Professional

AREA

Transmission

Symptoms you may notice

- Illumination of the check engine light or transmission warning light, often with no other noticeable symptoms
- Harsh or delayed gear shifts as the transmission control module (TCM) loses accurate range information
- The transmission may default to a limp-home mode, limiting vehicle speed and gear selection
- Inability to start the engine if the range module is part of the starting interlock system
- Erratic operation of the gear indicator on the instrument cluster or a flashing 'D' or 'N' symbol
- Multiple unrelated warning lights if the communication bus is affected

Common causes, most likely first

- 1 A short to ground in the communication wire between the TRCM and the TCM or gateway module
- 2 Corroded, damaged, or disconnected electrical connector at the TRCM or TCM
- 3 An open circuit in the communication line, often due to a broken wire or poor splice
- 4 A faulty TRCM that is internally shorted and pulling the communication line low
- 5 Water intrusion into the TRCM or its connector, causing corrosion and low voltage
- 6 A failing TCM that misinterprets the communication signal
- 7 A weak or failing battery or charging system causing low system voltage and false communication faults



How to diagnose and fix it

- 1 Verify battery voltage and charging system output; a low battery can cause spurious communication codes
- 2 Inspect the TRCM and TCM connectors for corrosion, water intrusion, or loose pins, and clean or repair as needed
- 3 Check the communication circuit for continuity and short to ground using a digital multimeter (DMM) and wiring diagram
- 4 Disconnect the TRCM and measure voltage on the communication line to see if the low condition disappears, indicating an internal module fault
- 5 Perform a wiggle test on the harness while monitoring live data to identify intermittent wiring faults
- 6 If the circuit tests good, substitute a known-good TRCM or TCM to confirm the faulty module before replacement
- 7 Clear the code and perform a road test to verify the repair and ensure the code does not return

Don't overlook the simple electrical checks

- A low battery or poor ground connection can set this code even when the communication circuit itself is intact, so always load-test the battery and check ground straps first.
- The TRCM is often integrated into the transmission range sensor or valve body, and a faulty sensor can pull the communication line low without any visible damage.
- Water intrusion into the transmission connector or module is a common cause that is easily missed if only the wiring is inspected visually.
- This code can be set by a faulty TCM rather than the TRCM, so swapping modules without testing the circuit can lead to unnecessary parts replacement.
- In some vehicles, the communication circuit is shared with other modules, so a short in a different component can cause this code to appear alongside others.

Can I keep driving with P07F3?

You can usually drive the vehicle to a repair shop, but avoid long trips or heavy loads because the transmission may enter limp mode without warning. If the vehicle exhibits harsh shifting or refuses to start, stop driving and seek professional diagnosis immediately.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter (DMM)
- Wiring diagram for the specific vehicle
- Test light or jumper wires
- Terminal cleaning tools and dielectric grease



Reading P07F3

- P** Powertrain: engine, transmission and emissions.
- 0** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- 7** Transmission.
- F3** The exact fault within that area.

Often seen with

P0700 Transmission Control System Malfunction · **P07F4** Transmission Range Control Module Communication Circuit High · **P07F5** Transmission Range Control Module System Voltage Low · **P07F6** Gear 9 Incorrect Ratio · **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/p07f3/>

