

GENERIC · POWERTRAIN

P0710

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0710

Transmission Fluid Temperature Sensor Circuit Malfunction

P0710 indicates that the transmission control module (TCM) has detected an abnormal signal from the transmission fluid temperature (TFT) sensor circuit. The TCM expects a voltage within a specific range that corresponds to the fluid temperature, but the signal is out of range, intermittent, or implausible, which can affect shift scheduling and torque converter lockup.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Transmission

Symptoms you may notice

- Illumination of the check engine light or transmission warning light
- Harsh or delayed shifting, especially when the transmission is cold
- Torque converter clutch may fail to engage or may engage erratically
- Transmission may enter limp mode (stuck in a single gear)
- Often no symptoms besides the warning light, especially if the fault is intermittent

Common causes, most likely first

- 1 Faulty transmission fluid temperature sensor
- 2 Damaged or corroded wiring or connector at the sensor
- 3 Open or short circuit in the sensor wiring harness
- 4 Poor electrical connection at the TCM
- 5 Internal transmission fluid contamination or degraded fluid affecting sensor response
- 6 Failed TCM (rare but possible)

How to diagnose and fix it

- 1 Scan all modules for stored codes and freeze-frame data to confirm P0710 and check for related codes
- 2 Inspect the TFT sensor connector and wiring for damage, corrosion, or loose pins
- 3 Measure the sensor resistance with a multimeter and compare to the manufacturer's temperature-resistance chart
- 4 Check for continuity and shorts in the wiring between the sensor and TCM
- 5 If the sensor is faulty, replace it (often integrated with the valve body or solenoid pack)
- 6 Clear codes and perform a road test to verify the repair and ensure the TFT reading is accurate



TFT sensor faults often misdiagnosed

- A P0710 can be set by a simple loose connector that causes an intermittent signal, so always wiggle-test the harness while monitoring live data.
- On many vehicles, the TFT sensor is part of the transmission solenoid pack or valve body, making replacement more involved than a standalone sensor.
- The code does not always mean the sensor is bad; a poor ground or voltage supply to the TCM can skew the signal.
- Transmission fluid temperature affects shift quality, so a faulty sensor can cause drivability issues that mimic a failing transmission.
- Always check for technical service bulletins (TSBs) for the specific vehicle, as some models have known harness routing issues.

Can I keep driving with P0710?

You can usually drive with P0710, but avoid heavy loads or aggressive driving because the transmission may shift harshly or enter limp mode. Have the fault diagnosed soon to prevent potential transmission damage from incorrect temperature readings.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Wire probe set
- Manufacturer's service information for resistance specifications
- Basic hand tools for connector and sensor access

Reading P0710

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

Often seen with

P0700 Transmission Control System Malfunction · **P0711** Transmission Fluid Temperature Sensor 'A' Circuit Range/Perf · **P0712** Transmission Fluid Temperature Sensor 'A' Circuit Low · **P0713** Transmission Fluid Temperature Sensor 'A' Circuit High · **P0714** Transmission Fluid Temperature Sensor 'A' Circuit Intermittent



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/p0710/>

