

GENERIC · POWERTRAIN

P0870

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0870

Transmission Fluid Pressure Sensor/Switch 'C' Circuit

P0870 indicates that the powertrain control module has detected an abnormal voltage or signal on the circuit for transmission fluid pressure sensor or switch 'C', which is typically used to monitor hydraulic pressure in a specific clutch or gear circuit. The computer compares the sensor's return signal against expected values for the current operating conditions and sets the code when the signal falls outside the acceptable range for a calibrated time.

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, often with no other noticeable symptoms
- Harsh or delayed gear shifts, especially when the transmission is cold or under load
- The transmission may enter limp mode, sticking in a single gear or refusing to downshift
- Slipping or flaring during acceleration as the computer cannot accurately regulate line pressure
- A noticeable decrease in fuel economy due to improper shift scheduling
- In some cases, the vehicle may shudder or hesitate during light-throttle cruising

Common causes, most likely first

- 1 Low or contaminated transmission fluid, which affects hydraulic pressure and sensor readings
- 2 A faulty transmission fluid pressure sensor or switch 'C' itself, due to internal wear or electrical failure
- 3 Damaged, chafed, or corroded wiring in the sensor circuit, often near heat sources or connectors
- 4 A poor electrical connection at the sensor or transmission control module, including loose pins or water intrusion
- 5 A stuck or leaking valve body solenoid or hydraulic circuit that prevents correct pressure from reaching the sensor
- 6 Internal transmission mechanical wear, such as a failing pump or clutch pack, causing abnormal pressure
- 7 A software calibration issue in the transmission control module that misinterprets sensor signals



How to diagnose and fix it

- 1 Check the transmission fluid level and condition; top off or replace fluid if it is low or burnt-smelling
- 2 Inspect the sensor 'C' wiring harness and connector for damage, corrosion, or loose pins, and repair as needed
- 3 Test the transmission fluid pressure sensor 'C' with a multimeter for resistance and voltage output according to the manufacturer's specification
- 4 Use a scan tool to monitor live transmission pressure data and compare it with mechanical gauge readings to verify sensor accuracy
- 5 Check for related diagnostic trouble codes in the transmission control module and address any solenoid or circuit codes first
- 6 If the sensor tests out of specification, replace it and clear the code, then perform a relearn or adaptation procedure if required
- 7 If the sensor and wiring are good, diagnose the valve body and hydraulic circuits for sticking valves or internal leaks

What P0870 rarely tells you

- A P0870 code is often set by low transmission fluid level or a clogged filter rather than a failed sensor, so always verify fluid condition before condemning parts.
- The sensor 'C' circuit may share a reference voltage or ground with other sensors, so a fault in a neighbouring circuit can trigger this code without any problem in sensor 'C' itself.
- Some vehicles use a transmission fluid pressure switch rather than an analog sensor, and these switches can become sticky from varnish buildup, causing intermittent codes that do not reappear after a fluid change.
- A faulty transmission control module or a software calibration issue can misinterpret a normal sensor signal and set P0870 even when all hydraulic pressures are correct.
- Driving with P0870 for an extended period can lead to increased clutch wear because the computer may default to elevated line pressure, so repair should not be postponed indefinitely.

Can I keep driving with P0870?

You can usually drive the vehicle to a repair shop, but avoid heavy acceleration, towing, or long trips because the transmission may be operating with incorrect pressure and could suffer accelerated wear. If the transmission is in limp mode or shifting harshly, limit driving to a short distance at low speed.



Tools that help

- OBD-II scan tool with live transmission data capability
- Digital multimeter
- Transmission pressure gauge set
- Socket and wrench set
- Fluid pump or funnel for transmission fluid
- Wire repair kit with crimpers and heat shrink

Reading P0870

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

Often seen with

P0730 Incorrect Gear Ratio · **P0841** Transmission Fluid Pressure Sensor/Switch 'A' Circuit Range/ · **P0868** Transmission Fluid Pressure Low · **P0871** Transmission Fluid Pressure Sensor/Switch 'C' Circuit Range/ · **P0872** Transmission Fluid Pressure Sensor/Switch 'C' Circuit Low

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/p0870/>

