

GENERIC · POWERTRAIN

P0C20

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0C20

Electric/Auxiliary Transmission Fluid Pump Phase U-V-W Circuit/Open

P0C20 indicates that the transmission control module (TCM) has detected an open circuit or abnormal electrical condition in the phase U, V, or W wiring of the electric auxiliary transmission fluid pump. This pump maintains fluid pressure for shifts and cooling when the engine is not running or during auto start-stop events, and the code sets when the TCM sees voltage or current outside the expected range on one or more of these phases.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Generic (all makes)	Medium	Professional	Hybrid propulsion

Symptoms you may notice

- Illumination of the check engine light or transmission warning light, often with no other symptoms
- Harsh or delayed shifting, especially after an auto start-stop event
- The vehicle may enter limp mode or refuse to engage drive or reverse
- Overheating of the transmission fluid during prolonged idling or low-speed operation
- Inconsistent operation of the auto start-stop system, which may be disabled
- In rare cases, a no-start condition if the pump is integrated into the transmission control system

Common causes, most likely first

- 1 Damaged or corroded wiring harness at the pump connector or along the phase U, V, W circuits
- 2 Failed auxiliary transmission fluid pump motor (open winding or internal short)
- 3 Blown fuse or failed relay supplying power to the auxiliary pump
- 4 Loose or backed-out terminal pins in the pump or TCM connectors
- 5 Faulty transmission control module (TCM) driver circuit for the pump phases
- 6 Fluid contamination or debris causing pump seizure and subsequent circuit damage
- 7 Aftermarket electrical accessories improperly tapped into the pump circuit



How to diagnose and fix it

- 1 Scan all modules for stored and pending codes, and record freeze-frame data to understand when the fault occurs
- 2 Visually inspect the auxiliary pump connector and harness for corrosion, chafing, or loose pins, and repair as needed
- 3 Check the pump fuse and relay, and verify power and ground at the pump connector with a multimeter
- 4 Measure resistance across the phase U, V, and W windings at the pump connector and compare to factory specifications
- 5 Perform a voltage drop test on the phase circuits while commanding the pump on with a scan tool to identify high resistance
- 6 If wiring and power supply are good, replace the auxiliary transmission fluid pump and clear codes
- 7 After repair, verify proper pump operation with a bidirectional scan tool and test-drive under start-stop conditions

What the phase U-V-W code really means

- A common misdiagnosis is replacing the transmission control module when the actual fault is a chafed wire in the harness near the pump, so always perform a thorough visual and resistance check first.
- The auxiliary pump often runs only during auto start-stop events, so the code may not set during a short test drive; a scan tool bidirectional test is needed to command the pump on.
- Fluid level and condition are critical: low fluid can cause the pump to overheat and damage the windings, setting this code without any wiring fault.
- Some vehicles use a three-phase brushless pump, and a failed pump driver inside the TCM can mimic a pump failure; swapping the pump without testing the driver circuit can lead to a repeat repair.
- This code can be stored alongside transmission slip codes if the pump fails to maintain pressure, so always address P0C20 before diagnosing secondary shift complaints.

Can I keep driving with P0C20?

You can usually drive the vehicle short distances to a repair shop, but avoid prolonged idling, heavy traffic, and towing because the auxiliary pump may not maintain fluid pressure or cooling. If the transmission enters limp mode or shifting becomes harsh, stop driving and seek professional diagnosis.

Tools that help

- OBD-II scan tool with bidirectional control and live data
- Digital multimeter with resistance and voltage drop capability
- Wiring diagram and factory service information for the specific vehicle
- Terminal pick and connector repair kit
- Fluid level dipstick or scan tool fluid temperature reading



Reading P0C20

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

Often seen with

P0700 Transmission Control System Malfunction · **P0868** Transmission Fluid Pressure Low · **P0C1F** Electric/Auxiliary Transmission Fluid Pump Control Module In · **P0C21** Electric/Auxiliary Transmission Fluid Pump Phase U-V-W Circu · **P0C22** Electric/Auxiliary Transmission Fluid Pump Phase U-V-W Circu

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/p0c20/>

