

GENERIC · POWERTRAIN

P0C22

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0C22

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

P0C22 indicates that the transmission control module (TCM) has detected a high-voltage condition on the electrical circuit for phase U, V, or W of the auxiliary transmission fluid pump. This pump, often electric, maintains fluid pressure for functions like stop-start or hybrid operation, and the high voltage suggests a short to power, an open circuit, or a faulty pump motor winding.

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

Symptoms you may notice

- Illumination of the malfunction indicator lamp (MIL) on the dashboard.
- Transmission may enter limp mode or fail to engage drive or reverse.
- Harsh or delayed shifting, or inability to shift gears.
- Overheating of the transmission due to inadequate fluid circulation.
- Often no symptoms besides the warning light, especially if the pump is only used under specific conditions.

Common causes, most likely first

- 1 Damaged or shorted wiring in the pump phase circuit (U, V, or W) contacting a power source.
- 2 Faulty auxiliary transmission fluid pump motor with internal winding short.
- 3 Corroded, loose, or disconnected electrical connectors at the pump or TCM.
- 4 Failed transmission control module (TCM) driver circuit for the pump.
- 5 Poor ground connection for the pump or TCM, causing voltage spikes.
- 6 Aftermarket accessories or improper wiring repairs interfering with the circuit.



How to diagnose and fix it

- 1 Perform a visual inspection of the pump wiring harness and connectors for chafing, corrosion, or loose pins.
- 2 Use a digital multimeter to check for battery voltage on the phase circuits with the pump commanded off; any voltage indicates a short to power.
- 3 Measure resistance across the pump motor phases (U-V, V-W, W-U) and compare to specifications; an open or short indicates a faulty pump.
- 4 Check the pump ground circuit for excessive resistance and repair as needed.
- 5 Inspect the TCM connectors for signs of damage or water intrusion and verify TCM software is up to date.
- 6 If wiring and connectors are good, substitute a known-good pump or TCM to isolate the fault.
- 7 Clear the code and perform a road test to verify the repair, ensuring the pump activates under the conditions that originally set the code.

Before condemning the auxiliary pump

- A high voltage code on a pump phase circuit is often caused by a short to power in the harness, not by the pump itself, so always check for voltage on the phase wires with the pump disconnected.
- The auxiliary pump may only run during auto start-stop events or when the engine is off in a hybrid, so the code may not set during a normal test drive; use a scan tool to command the pump on.
- Corrosion inside the pump connector can create a high-resistance path that mimics a phase fault, so inspect the terminals closely even if they look clean from the outside.
- A failing TCM power supply or ground can cause erratic pump operation and set this code without any fault in the pump circuit, so verify powers and grounds at the TCM first.
- This code can be stored alongside other phase codes (P0C23, P0C24) if multiple phases are affected, often pointing to a shared connector or harness issue rather than multiple pump failures.

Can I keep driving with P0C22?

If the vehicle drives normally, you may cautiously drive to a repair shop, but avoid heavy loads or long distances because the transmission may overheat if the pump is not working. If the transmission is in limp mode or slipping, stop driving and have the vehicle towed to prevent further damage.

Tools that help

- OBD-II scan tool with bidirectional control and live data
- Digital multimeter (DMM) with resistance and voltage measurement
- Wiring diagram for the specific vehicle
- Terminal test kit and backprobe pins
- Insulation resistance tester (megohmmeter) for motor windings



Reading P0C22

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

Often seen with

P0A0A High Voltage System Interlock Circuit A · **P0C1F** Electric/Auxiliary Transmission Fluid Pump Control Module In · **P0C20** Electric/Auxiliary Transmission Fluid Pump Phase U-V-W Circu · **P0C23** Electric/Auxiliary Transmission Fluid Pump Control Module Ci · **P0C24** Electric/Auxiliary Transmission Fluid Pump Control Module Ci

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/p0c22/>

