

# Sewage Pump Controllers

## Simplex - Duplex - Triplex

Sewage pump controllers are installed to automatically start and stop pump motor(s) in order to remove liquid accumulated in a sump pit or sewage lift station. Automatic level control is provided by start and stop float switches. Automatic alternation is provided on duplex and triplex sewage pump controllers.

The completely assembled and wired controllers are factory tested before shipping. All components used in Tornatech sewage pump controllers are UL approved.

Tornatech favors fuseless motor protection for easy field maintenance.

### Standard Features included in **Simplex**, **Duplex** and **Triplex** sewage Pump Controllers:

Standard Features	Simplex	Duplex	Triplex
NEMA 1 enclosure ASA 61 grey	1	1	1
Main disconnect switch (HP rated) c/w door interlocked handle	1	1	1
Thermomagnetic motor protector(s) (Overload & Short circuit protection)*	1	2	3
Across-the-line contactor(s)(HP rated)	1	2	3
Control transformer 120V. secondary c/w secondary fuse	1	1	1
"Power On" white pilot light	1	1	1
"Run" green pilot light(s)	1	2	3
"Hand-Off-Auto" selector switch(es)	1	2	3
Provision to connect float switches (float switches not included)	2	3	4
Automatic transfer to non operating pump in case of motor overload or short circuit	N/A	1	1
Automatic pump alternation	N/A	2 pumps	3 pumps



\*Replaced by single pole circuit breaker(s) and overload relay(s) in single phase controllers.

## Optional features available (Contact factory for details):

- High level indication
- Various types of enclosure: NEMA/CSA 3R, NEMA/CSA 4...
- Pilot lights, buzzer and alarm contacts for different conditions such as overload, high level...
- Push-to-test pilot loght(s)
- Elapsed time meter(s)
- Ammeter(s) single phase or three phase
- Voltmeter
- "Klison" provision
- Moisture detection
- Surge arrester
- Line monitor
- Installation of capacitor pack & start relay
- Anticondensation heater and thermostat

## Start-up instructions

- Check name plate rating of sewer pump controller and compare with incoming voltage and motor(s) rating(s).
- Adjust overload relay setting to full motor current rating.
- Check that motor protector push actuator(s) is(are) in start position.
- Check that float switches are adjusted to the desired levels.
- Check that controller is properly connected to pump motor(s)
- Turn Hand-Off-Auto selector switch(es) to Off position. Switch main disconnect switch to On position.
- Turn Hand-Off-Auto selector switch(es) to Hand position. Pump motor(s) should start. Check motor(s) for proper rotation.
- If all above checks out correctly, turn Hand-Off-Auto selector switch(es) to Auto position. Activate float switches manually and test if pump(s) start and stop are the desired level.

**HOW TO ORDER:** AB- V/ C x HP/ Ph/ Hz  
Ex: DS3- 480/ 2 x 7.5/ 3/ 60

A = SS simplex	B = 1 single phase (120V)	V = 120	C = 1 one pump	HP = anything	Ph = 1 single phase (120V)	Hz = 50
DS duplex	2 single phase (240V)	208	2 two pumps	between	2 single phase (240V)	60
TS triplex	3 three phase	240	3 three pumps	.25 and 30	3 three phase	
		380				
		415				
		416				
		480				
		600				

## Sequence of Operation

### SIMPLEX Sewage pump controller

- Once the level falls below the start pump level float switch, the pump motor is energized and the pump starts pumping fuel into the tank.
- Once the level reaches the high level float switch, the pump motor is de-energized and the pump stops.

### DUPLEX Sewage pump controller

- Once the level reaches the lead pump start float switch, the lead pump motor is energized and the lead pump starts pumping down.
- Once the level falls below the stop level float switch, the lead pump motor is de-energized and the lead pump stops.
- If the level keeps raising once the lead pump is on and it reaches the lag pump start float switch, the lag pump motor is energized and the lag pump starts pumping down.
- Once the level falls below the stop level float switch, both the lead and the lag pump motors are de-energized and both pumps stop.
- The stop float switch triggers the alternator and reverse the order of lead and lag pumps.

### TRIPLEX Sewage pump controller

- Once the level reaches the lead pump start float switch, the lead pump motor is energized and the lead pump starts pumping down.
- Once the level falls below the stop level float switch, the lead pump motor is de-energized and the lead pump stops.
- If the level keeps raising once the lead pump is on and it reaches the first lag pump start float switch, the first lag pump motor is energized and the first lag pump starts pumping down.
- If the level falls below the stop level float switch, both the lead and the first lag pump motors are de-energized and both pumps stop.
- If the level keeps raising once the lead pump and the first lag pump are on and it reaches the second lag pump start float switch, the second lag pump motor is energized and the second lag pump starts pumping down.
- If the level falls below the stop level float switch, all three pump motors are de-energized and all pumps stop.
- The stop float switch triggers the alternator and the order of lead, first lag and second lag pumps.

## AMERICAS

Tornatech Inc.

Head Office

Laval, Québec, Canada

Tel: + 1 514 334 0523

Toll free: + 1 800 363 8448