

Booster Pump Controllers

Simplex - Duplex - Triplex

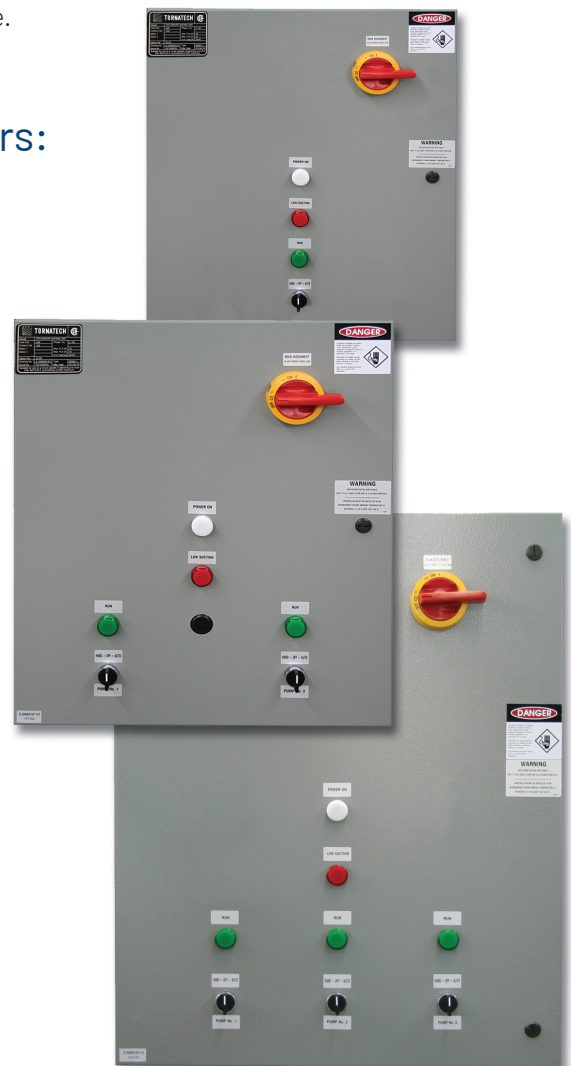
Booster pump controllers are installed to automatically start and stop pump motor(s) on system demand in order to maintain a constant pressure in a pressurized water supply system. System demand can be detected by pressure (standard) or current sensing (option).

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

Tornatech favors fuseless motor protection for easy field maintenance.

Standard Features included in **Simplex**, **Duplex** and **Triplex** Booster 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
"Low suction" red pilot light	Opt.	1	1
"Hand-Off-Auto" selector switch(es)	1	2	3
Pressure switch(es) adjustable for start-stop pump **	1	1	2
Pressure switch adjustable for low suction pressure shut-off **	Opt.	1	1
Run period adjustable timer(s)	1	1	2
Provision for aquastat/solenoid circuit	1	1	1
Automatic transfer to non-operating pump in case of motor overload or short circuit	N/A	1	1



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

**For clear water condition only.

Optional features available (Contact factory for details):

- Current sensing relays instead of pressure switch(es)
- Various types of pressure switch(es)
- Time delays for various applications
- Pilot lights and alarm contacts for different conditions such as overload, high pressure...
- Elapsed time meter(s)
- Various types of enclosure: NEMA – CSA 12, NEMA – CSA 4, ...
- Circuit breaker(s) instead of horsepower rated disconnect switch(es)
- Ammeter(s) single phase or three phase
- Various manual alternations (duplex or triplex controllers only)
- Various automatic alternations (duplex or triplex controllers only)
- No flow shut down (duplex or triplex controllers only)
- Low level shut down (duplex or triplex controllers only)
- High and low safety pressure shutdowns

Start-up instructions

- Check name plate rating of booster pump controller and compare with incoming voltage and motor(s) rating(s).
- Adjust overload setting to full motor current rating.
- Check that motor protector push actuators are in start position.
- Check that water pressure switches are adjusted to proper system pressure. Make sure water supply is available.
- 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 rotation.
- If all above checks out correctly, turn Hand-Off-Auto selector switches to Auto position.

HOW TO ORDER: AB- V/ C x HP/ Ph/ Hz
Ex: DB3- 480/ 2 x 7.5/ 3/ 60

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

Sequence of Operation

SIMPLEX Sewage pump controller

- Upon pressure drop as detected by discharge pressure switch, the pump starter is energized and the pump starts.
- Upon re-establishment of system pressure, the run period timer is activated.
- Upon expiration of the run period timer delay, the pump motor stops.
- If during the run period timer the pressure drops, the timer is reset.

DUPLEX Sewage pump controller

- Lead pump runs continuously
- Upon pressure drop as detected by discharge pressure switch, the lag pump motor is energized and the lag pump starts.
- Upon re-establishment of system pressure, the run period timer starts counting.
- Upon expiration of the run period timer delay, the lag pump motor is de-energized and the lag pump stops.
- If during the run period timer countdown the pressure drops, the timer is reset and the pump keeps running until pressure is restored.

TRIPLEX Sewage pump controller

- Lead pump runs continuously.
- Upon pressure drop as detected by discharge pressure switch, the first lag pump motor is energized and the first lag pump starts.
- If pressure cannot be re-established, the second lag pump motor is energized and the second lag pump starts.
- Upon re-establishment of system pressure, the second run period timer starts counting.
- Upon expiration of the second run period timer delay, the lag pump motor is de-energized and the second lag pump stops.
- Upon re-establishment of system pressure, the first run period timer starts counting.
- Upon expiration of the first run period timer delay, the first lag pump motor is de-energized and the first lag pump stops.
- If during the run period timer countdown the pressure drops, the timer is reset and the pump keeps running until pressure is restored.

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