



# BOILER FEED PUMP CONTROLLERS

## BOILER FEED PUMP CONTROLLERS SIMPLEX - DUPLEX

Boiler feed pump controllers are installed to automatically start and stop pump motor(s) in order to provide water to a boiler. Automatic level control is provided by a start and stop float switch. Provisions for a low water cut off float switch, make up control float switch and solenoid valve are standard on both simplex and duplex units.

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

Tornatech favors fuseless motor protection for easy field maintenance.



### STANDARD FEATURES included in SIMPLEX and DUPLEX BOILER FEED PUMP CONTROLLERS:

STANDARD FEATURES	SIMPLEX	DUPLEX
NEMA/CSA 1 enclosure ASA 61 grey	1	1
Main disconnect switch (HP rated) c/w door interlocked handle	1	1
Thermomagnetic motor protector(s) (Overload & Short circuit protection)*	1	2
Across-the-line contactor(s) (HP rated)	1	2
Control transformer 120V. secondary c/w secondary fuse	1	1
"Power On" white pilot light	1	1
"Run" green pilot light(s)	1	2
"Hand-Off-Auto" selector switch(es)	1	2
Provision to connect boiler level controller	1	1
Provision to connect low water cut off float switch	3	3
120 V.AC circuit for water make up solenoid & float switch	1	1
Provision for make up solenoid	1	1

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



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#### SIMPLEX - DUPLEX

#### OPTIONAL FEATURES AVAILABLE

(Contact factory for details.):

- High level indication
- Manual or automatic alternation for duplex units only
- 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 light(s)
- Elapsed time meter(s)
- Anticondensation heater and thermostat
- Ammeter(s) single phase or three phase
- Voltmeter

#### Start-up instructions:

- Check name plate rating of boiler feed 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 at the desired level.

#### SEQUENCE OF OPERATION

##### SIMPLEX BOILER FEED pump controller

- Once the level reaches the pump start float switch level, the pump motor is energized and the pump starts pumping into the boiler.
- Once the level reaches the pump stop float switch level, the pump motor is de-energized and the pump stops.
- If a low water cut off float switch is installed, the pump motor is de-energized when a low water level is reached.

##### DUPLEX BOILER FEED pump controller

- Once the level reaches the pump start float switch level, the pump motor is energized and the pump starts pumping into the boiler.
- If the pump motor overloads or short circuits the next pump will start.
- Once the level reaches the pump stop float switch level, the pump motor is de-energized and the pump stops.
- If a low water cut off float switch is installed, the pump motor is de-energized when a low water level is reached.

#### HOW TO ORDER: AB - V / C x HP / Ph / Hz

Ex.: **DBF3** - 480 / 2 x 7.5 / 3 / 60

A = SBF simplex DBF duplex	B = 1 single phase(120V) 2 single phase(240V) 3 three phase	V = 120 208 240 380 415 416 480 600	C = 1 one pump 2 two pumps	HP = anything between .25 and 20	Ph = 1 single phase(120V) 2 single phase(240V) 3 three phase	Hz = 50 60
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For dimensions or other voltages and HP, please contact factory.

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