



Firetrol

INSTALLATION AND OPERATION INSTRUCTIONS

***Jockey Pump Controllers - Models FTA560F,
FTA560E, FTA566E***

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	 DANGER
	RISK OF ELECTROCUTION Personal injury or death could occur. Ensure all power is disconnected before installing or servicing this equipment.



DANGER

DO NOT ATTEMPT TO INSTALL OR PERFORM MAINTENANCE ON EQUIPMENT WHILE IT IS ENERGIZED! DEATH, PERSONAL INJURY OR SUBSTANTIAL PROPERTY DAMAGE MAY RESULT FROM CONTACT WITH ENERGIZED EQUIPMENT. ALWAYS VERIFY THAT NO VOLTAGE IS PRESENT BEFORE PROCEEDING AND ALWAYS FOLLOW GENERALLY ACCEPTED SAFETY PROCEDURES. CONTROLLER DISCONNECT SWITCH MUST BE IN THE "OFF" POSITION IN ORDER TO OPEN THE ENCLOSURE DOOR. FIRETROL, INC. CANNOT BE LIABLE FOR ANY MISAPPLICATION OR INCORRECT INSTALLATION OF ITS PRODUCTS.

California Proposition 65 Warning



WARNING: This product can expose you to chemicals including DINP, which is known to the State of California to cause cancer, and DIDP which is known to the State of California to cause birth defects or other reproductive harm.



WARNING: This product can expose you to chemicals including lead and lead compounds, which are know to the State of California to cause cancer and birth defects or other reproductive harm.

For more information go to: www.P65Warnings.ca.gov

Introduction

Firetrol FTA560 Jockey Pump Controllers are intended for use with fire pump systems. They are used for pressure maintenance in fire pump installations to prevent unnecessary cycling of the main fire pump.

Firetrol Jockey Pump Controllers are listed by Underwriters' Laboratories, Inc., in accordance with UL508, Standard for Industrial Controllers, and CAS, Standard for Industrial Control Equipment. They are built to meet or exceed the requirements of the approving authorities as well as NEMA and the latest edition NFPA, National Electrical Code.

These instructions are intended to assist in the understanding of the installation and operation of these controllers. Read the instructions thoroughly prior to connecting or operating the controller. If there are any unanswered questions, please contact the local Firetrol representative or the factory service department.

Mounting Controller

NOTE- Consult the appropriate job plans to determine the controller mounting location. Tools and materials (all mounting) required:

1. Assortment of common hand tools of the type used to service electromechanical equipment.
2. Drill for drilling wall anchor holes.
3. Hole (conduit) punch.
4. Hand level.
5. Tape measure.
6. Four anchors with bolts and washers, per enclosure.

Procedure-

Note- Refer to the controller dimension drawing for necessary mounting dimensions. The controller is wall mounted by using at least four (4) wall anchors, 2 anchors for the top mounting brackets and 2 anchors for the bottom mounting brackets. The brackets are dimensionally on the same centerline for ease in mounting.

1. Using either the dimension print or by measuring the distance between the center lines of the lower bracket slots, transcribe this dimension on to the wall. Note: The bottom edge of the enclosure should be a minimum of 12" (305mm.) from the floor in case flooding of the pump room occurs.
2. Drill and put anchors into the wall for the lower mounting brackets.
3. Mark on the wall, the location of the holes in the upper mounting brackets.
4. Drill and put anchors into wall for the upper mounting brackets.
5. Install bolts and washers in lower anchors.
6. Align holes in upper mounting brackets and install bolts and washers in anchors.
7. Shim anchors as necessary to ensure rear of enclosure is vertical level and enclosure is not stressed. Tighten all anchor bolts.
8. Check to be sure enclosure door open and closes freely and that enclosure is level.

Making System Pressure Connections

The controller requires one (1) "System Pressure" connection from the system piping to the enclosure. The connection fitting, 1/2" FNPT, is provided on the bottom, external side of the enclosure for this purpose. Refer to NFPA 20 (or Publication GF100-30) for correct field piping procedure of the sensing line between the pumping system and the controller.

Making Electrical Connections

Important Precautions-

Prior to making any field connections:

1. Open door of enclosure and inspect internal components and wiring for any signs of frayed or loose wires or other visible damage.
2. Verify that the controller information is what is required on the project:
 - Firetrol catalog number
 - Motor voltage matches incoming line voltage and frequency
 - Confirm incoming voltage matches nameplate before energizing controller
 - Pump motor horsepower size matches controller
3. Project electrical contractor must supply all necessary wiring for field connections in accordance with the National Electrical Code, local electrical code and any other authority having jurisdiction.
4. Refer to the appropriate field connection drawing for wiring information.

Procedure-

All field connections, remote alarm functions and AC wiring are brought into the enclosure through the top or bottom conduit entrances as indicated on the dimensional drawing. Do not place conduit entrances in the sides of the enclosure.

1. Using a hole (conduit) punch, create a hole in the enclosure for the size conduit being used.
2. Install necessary conduit.
3. Pull all wires necessary for field connections, remote alarm functions, AC power and all other optional features. Bring enough wire inside the enclosure to make up connections to the appropriate line, load and control terminal block points. Be sure to consult the appropriate field connection diagram included with the manual. For proper wire sizing, refer to the National Electrical Code, NFPA 70.
4. Make all field connections to the remote alarm functions and any other optional features. Connect motor to controller load terminals.
5. Find nameplate on jockey pump motor and make note of its full load amp rating. Verify the overload within the controller is set for that number of amps.
6. Verify AC line voltage, phase and frequency with the controller data plate on the enclosure door prior to connecting. Connect AC power.
7. Check to see that all connections are both correctly wired (in accordance with the field connection diagram) and tight.
8. Close the enclosure door.

Methods of Starting/Stopping

- Automatic Start

The controller will start automatically on low pressure detection by the pressure transducer when pressure drops below the programmed Start Pressure point.

- Manual Start

The motor can be started by pressing the START push button, regardless of the system pressure.

- Manual Stop

Manual stop is done by pressing the STOP push button. If system pressure is above the Stop Pressure Point, pressing the STOP pushbutton will stop the motor. If the system pressure is below the Start Pressure Point, pressing the STOP button will stop the motor for as long as the button is held pressed. The motor will restart once button is released.

- Bump For Rotation

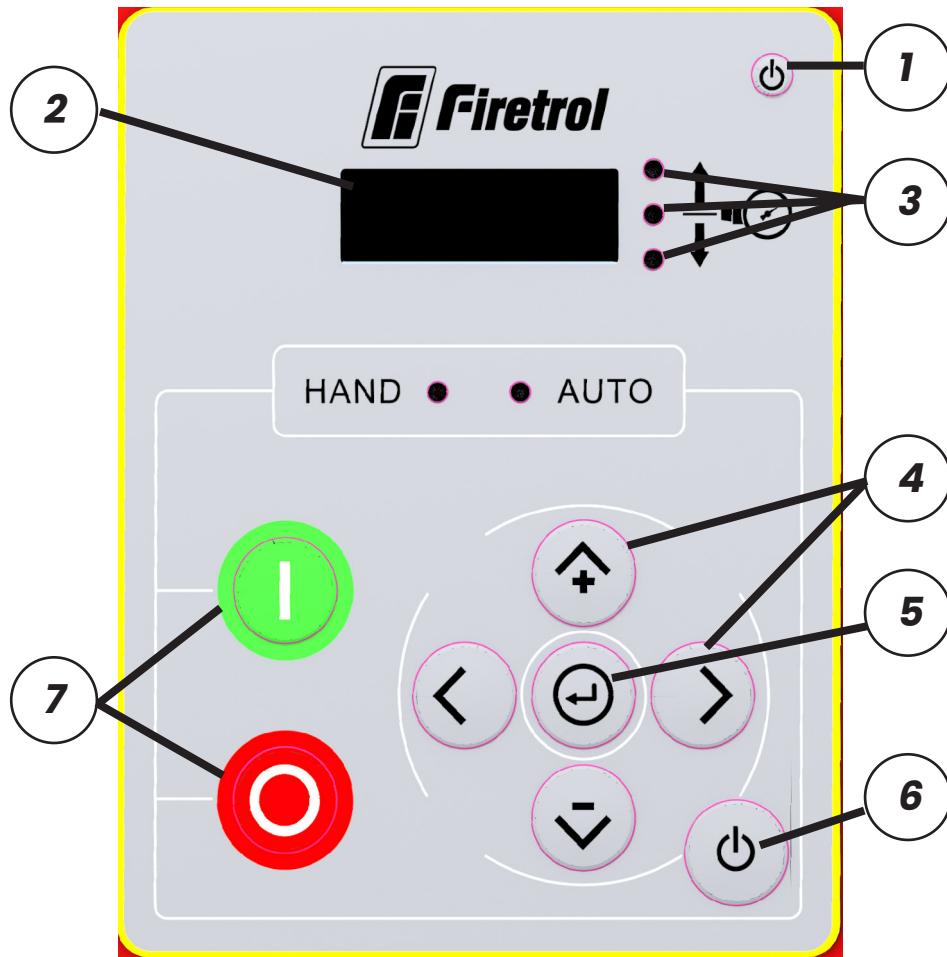
The combination of the Manual Start and the Manual Stop can be used to bump for rotation. If the rotation is incorrect, turn OFF power with the door mounted disconnect. Swap any two existing motor lead wires that are on the motor contactor in the controller.

- Automatic Stop

The motor is automatically stopped after the restoration of the pressure (if the Stop Pressure point has been reached or exceeded), after a programmable run period timer, if a timer has been set.

- Emergency Stop

The emergency stop is always possible in any starting condition by turning the door-mounted disconnect to the OFF position.



Control Buttons and Items on Keypad

1. ON/OFF LED. It is located on the upper right-hand corner of the keypad. When this LED is lit in green, the controller is ready for automatic operation. When it is lit in red, the controller can be started in manual only (display screen will show "OFF").
2. Display Screen. A four-character display that shows programming values and the pressure reading.
3. Three vertical LEDs. To the right of the display screen, these represent the incoming sensing line pressure status. The upper green LED is lit when the pressure the controller measures is above the Stop Pressure point, the middle amber LED is lit when the pressure is in between the Start Pressure and Stop pressure points and the bottom red LED is lit when the pressure is below the Start Pressure point.
4. Arrow Pushbuttons. The Up/Down (+/-) arrow buttons are used for increasing or decreasing a parameter value shown on the screen. The Left/Right buttons are used to scroll through the five available programming settings.
5. Enter Pushbutton. Looks like a check-mark inside of a gear. This is used to access the parameters to program and to confirm programming changes. The programming procedure is described below.
6. ON/OFF Pushbutton. This is located on the lower right-hand corner of the keypad. This is used to place the controller in manual/non-automatic mode (display screen will show "OFF") or place the controller in automatic mode.
7. Start and Stop Pushbuttons. These are on the left-hand side of the keypad. Pressing the green Start pushbutton starts the pump in manual mode. If the pump is started in manual mode, it must be stopped manually by pressing the Stop Pushbutton. If the controller starts the pump in automatic mode by the system pressure dropping to or below the Start Pressure point, pressing the STOP button will stop the motor for as long as the button is held pressed. The motor will restart once button is released.

Programmable Settings

There are five available parameters to set:

1. Pump Stop Pressure (shown on screen as "Cu.Ou" for "Cut-Out")
2. Pump Start Pressure (shown on screen as "Cu.In" for "Cut-In")
3. Pressure Display Units (shown on screen as "Unit")
4. Pump Stop Delay Timer (shown on screen as "t.OFF")
5. Pump Start Delay Timer (shown on screen as "t.On")

1 & 2. Pressure set-points are adjustable from 0 to 600 PSI equivalent. Program the Stop Pressure point first. The keypad will not allow the Stop Pressure point to be lower than the Start Pressure point nor the Start Pressure point to be above the Stop Pressure point. NOTE: If the intent is for the connected pressure to be above 300 PSI, confirm that the controller has been rated for this pressure level.

3. Selectable units are: PSI, BAR, Kpa, Feet H2O and Meter H2O. The keypad display will show the pressure measured by the controller from the connected sensing line using that selected unit of pressure.

4. Once the pump is running in automatic mode from the controller, it will run for the programmed number of seconds after the Stop Pressure point has been reached. This setting is adjustable from 0 to 9999 seconds. A small red dot will flash On and Off if the timer is counting down. If the pressure drops below the Stop Pressure point before the timer has expired, the timer is reset.

5. Once the pressure level measured by the controller drops to or below the Start Pressure point, the controller will delay starting the pump for the programmed number of seconds. This setting is adjustable from 0 to 9999 seconds. A small red dot will flash On and Off if the timer is counting down. If the pressure rises above the Start Pressure point before the timer has expired, the timer is reset.

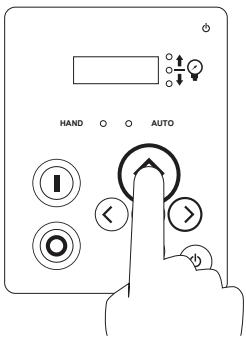
Keypad Programming Procedure

- A. Apply power to the controller and turn ON the door mounted disconnect. If the controller is in OFF mode, the display screen will alternate between showing "OFF" and the incoming pressure along with a red ON/OFF LED on the upper right-hand corner of the keypad. (If "0000" is shown, then the controller does not see any incoming pressure.) If the controller is in automatic mode, the ON/OFF LED on the upper right-hand corner of the keypad will be green and a constant pressure reading shown on the display screen.
- B. Press and hold the Enter Pushbutton for about five seconds (the 3 LED's to the right of the display should be flashing). This accesses the programmable settings. First shown will be "Cu.Ou". Press the Enter Pushbutton again and a number will be shown. This is the Stop Pressure point. Use the up or down (+ or -) buttons to select the desired Stop Pressure point. The longer a button is kept pressed, the faster the displayed number will change. Once completed, press Enter again. "Cu.Ou" will be shown.
- C. Press the right arrow pushbutton once. Now, "Cu.In" will be shown. Press the Enter Pushbutton and a number will be shown. This is the Start Pressure point. Use the up or down (+ or -) buttons to select the desired Start Pressure point. The longer a button is kept pressed, the faster the displayed number will change. Once completed, press Enter again. "Cu.In" will be shown.
- D. Press the right arrow pushbutton once. Now, "Unit" will be shown. The default setting for the unit of pressure measurement is PSI. If another unit of measurement is desired (available choices listed above), press the Enter button. Then, use the up or down (+ or -) buttons to select the desired unit of pressure measurement and then press the Enter button. "Unit" will be shown.
- E. Press the right arrow pushbutton once. Now, "t.OFF" will be shown. As described above, this is the Stop Delay timer. Default setting is 0 seconds. If a Stop Delay is desired, press the Enter button. Then, use the up or down (+ or -) buttons to select the desired number of seconds and press the Enter button. "t.OFF" will be shown.
- F. Press the right arrow pushbutton once. Now, "t.On" will be shown. As described above, this is the Start Delay timer. Default setting is 0 seconds. If a Start Delay is desired, press the Enter button. Then, use the up or down (+ or -) buttons to select the desired number of seconds and press the Enter button. "t.On" will be shown.
- G. Press the right arrow pushbutton once. Now, "Cu.Ou" will be shown and programming is complete then press and hold the ON/OFF Pushbutton for about two seconds. The ON/OFF LED on the upper right-hand corner of the keypad should be green and a constant pressure reading should be shown on the display screen.
- H. The controller is now ready for automatic operation.

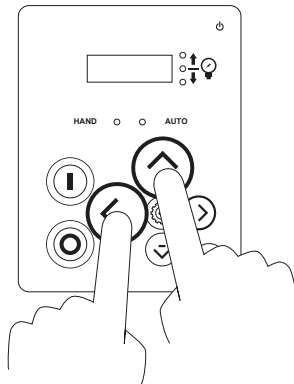
Keypad Shortcuts to See Parameter Settings and Recorded Values

Place controller into Auto mode by pressing ON/OFF pushbutton (for about 2 seconds) so the ON/OFF LED on the upper right-hand corner of the keypad will be lit in green.

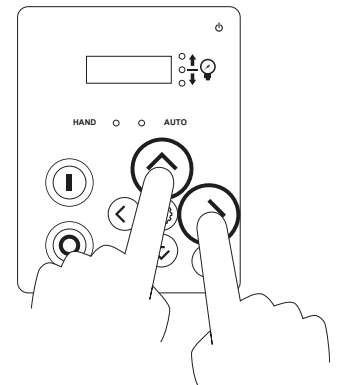
- Stop Pressure: press Up arrow button
- Start Pressure: press Down arrow button
- ON Delay Timer: simultaneously press the Down arrow button and left arrow button
- OFF Delay Timer: simultaneously press the Up-arrow button and left arrow button
- Number of times pump has started: simultaneously press the Up-arrow button and right arrow button
- Pump Running Elapsed Time: simultaneously press the down arrow button and right arrow button



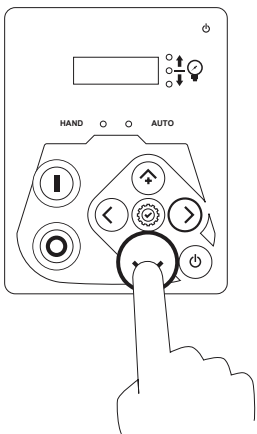
Stop Pressure



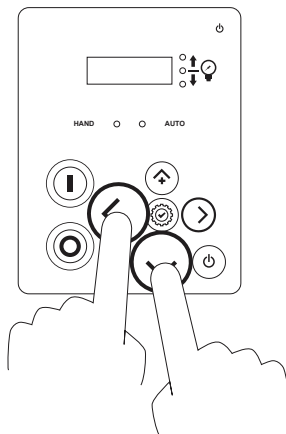
Off Delay Timer



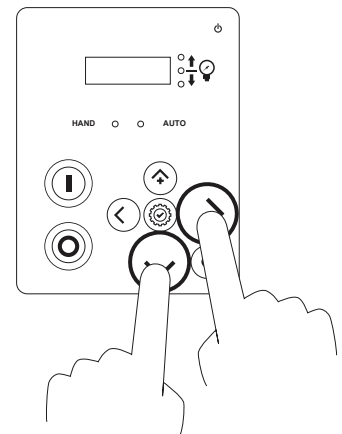
of Starts



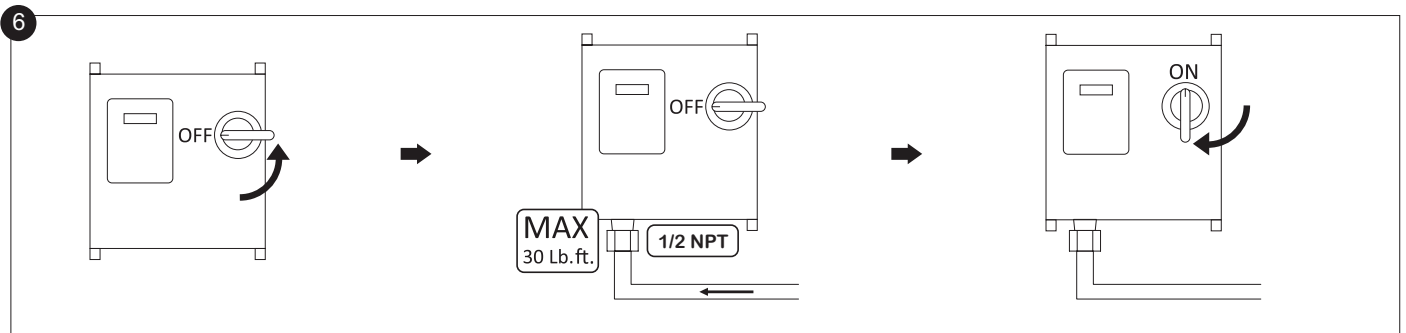
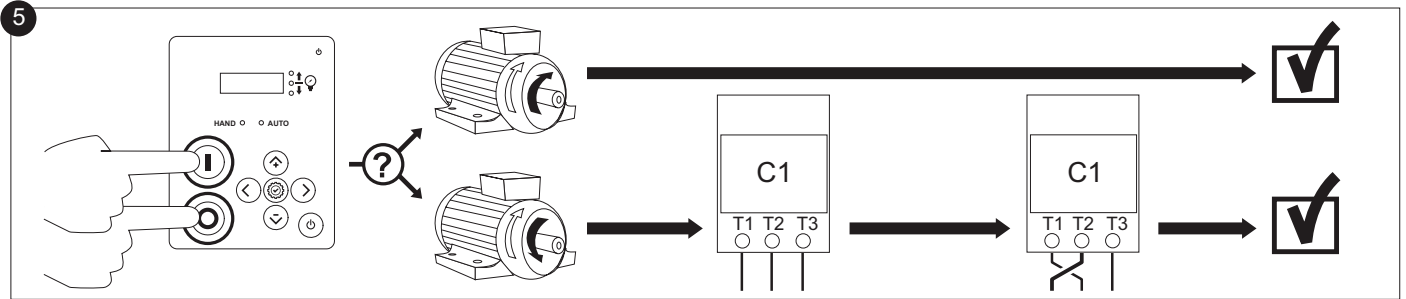
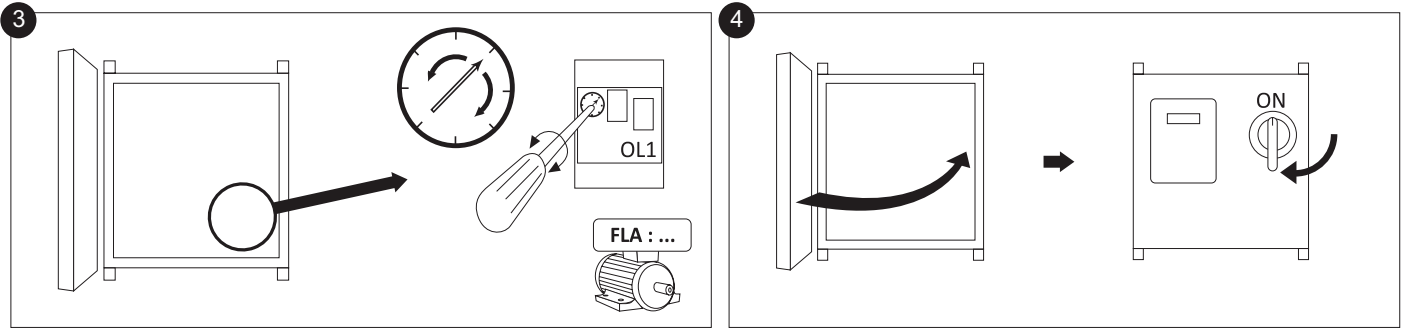
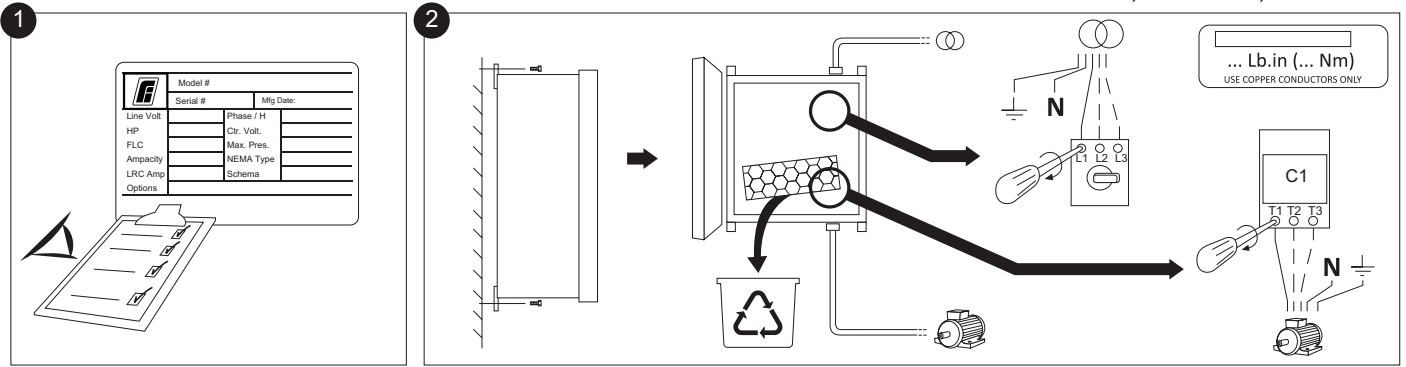
Start Pressure

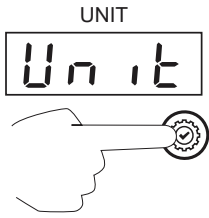


On Delay Timer

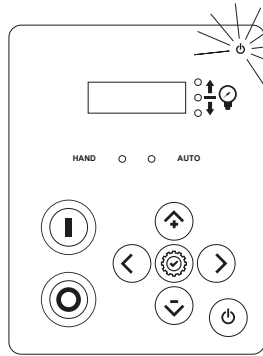
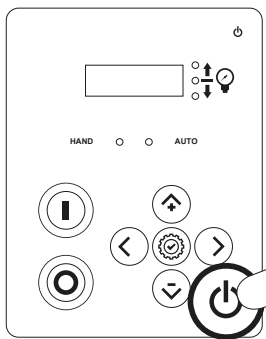
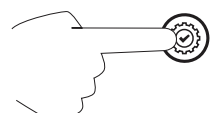
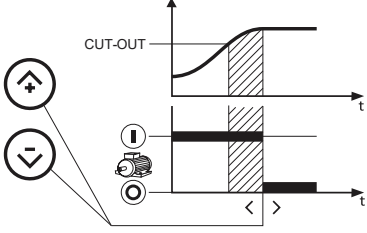
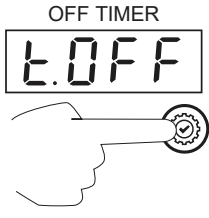
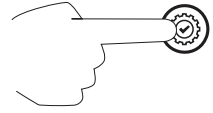
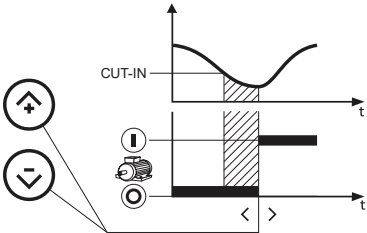
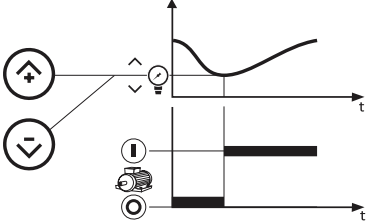
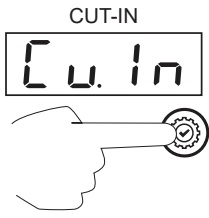
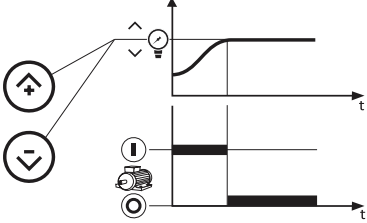
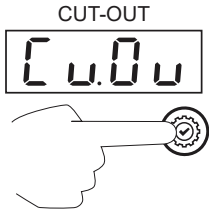
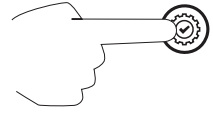
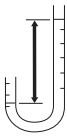


Elapsed Run Time
(Hours)





PSI = PSI
 BAR = BAR
 HPA = KPa
 FEET = Feet H₂O
 METER = Meter H₂O



VISUAL INSPECTION	YES	NO
Inspect cleanliness of controller.		
Remove any objects from the top of the controller.		
Dust and clean the controller.		
Inspect controller for any evidence of external corrosion.		
Inspect controller for any evidence of internal corrosion.		
Check for water leaks on pressure transducer and piping.		
Inspect door for proper alignment and function of door locks.		
Check tightness of all wiring connections.		
Inspect the controller for proper grounding		
Inspect internal and external components for any damage.		
Inspect motor starter power contacts.		
Check tightness of all component mounting hardware.		
OPERATIONAL INSPECTION	YES	NO
Verify proper motor rotation.		
Confirm automatic start from water pressure control.		

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