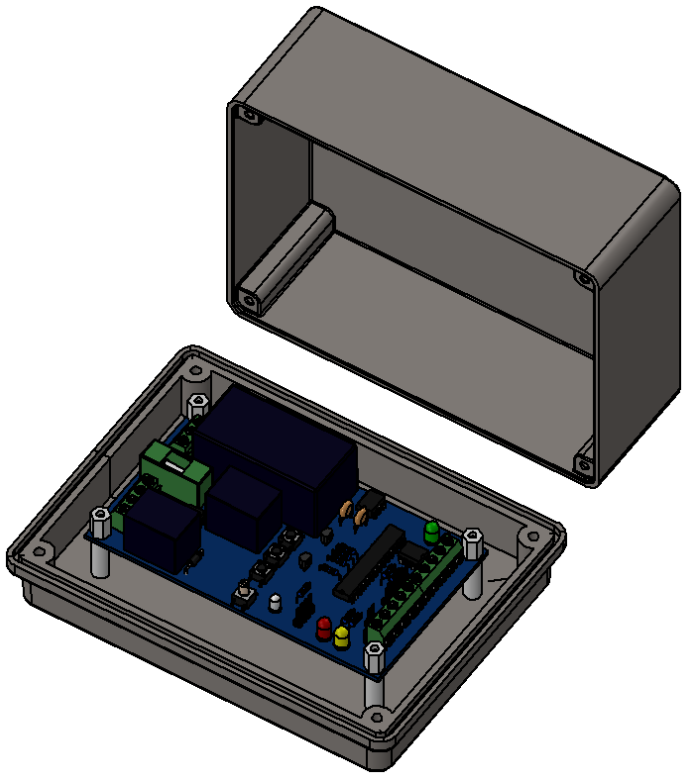
READ THIS MANUAL CAREFULLY. OBSERVE WARNINGS AND PRACTICE CAUTION WHEN INSTALLING, OPERATING, OR MAINTAINING YOUR GOFF'S PRODUCT.

TFT Motor Controller

ELECTRICAL CONNECTIONS AND MOTOR ADJUSTMENTS

USED WITH 600, 1200, 1800, and BASIC SERIES IN-TUBE MOTORS WITH A 3-BUTTON STATION



FEATURES:

- Mounted in an IP66 polycarbonate enclosure
- 1 Amp, 12 Volt DC power supply for accessories
- Diagnostic LEDs for quick, easy troubleshooting
- Supports Normally Open (N/O) and Normally Closed (N/C) inputs for safety devices
- Selectable stop button type: N/O or N/C via on-board jumpers
- Timed Run vs Continuous Pressure is selectable via on-board jumpers
- Sequence input supports single contact devices: Wireless Remotes, Key Switches, Card and Fingerprint readers with N/O output relay, etc.

MOTOR AND LINE-IN WIRING:

- In Figure 1, you will see the AC Input, and the Motor wiring
  - See top right and left corners respectively
- Colors for Motor Input:
  - Green = Ground
  - White = Neutral
  - Black = Up
  - Red = Down

  } Reverse for Left-Handed Doors
- When using a TFT Controller, a Push-Button Station (PBS) is used to operate the door
- If using a Goff's supplied PBS, the stop button will be N/O
  - See Figure 2 for wiring of PBS

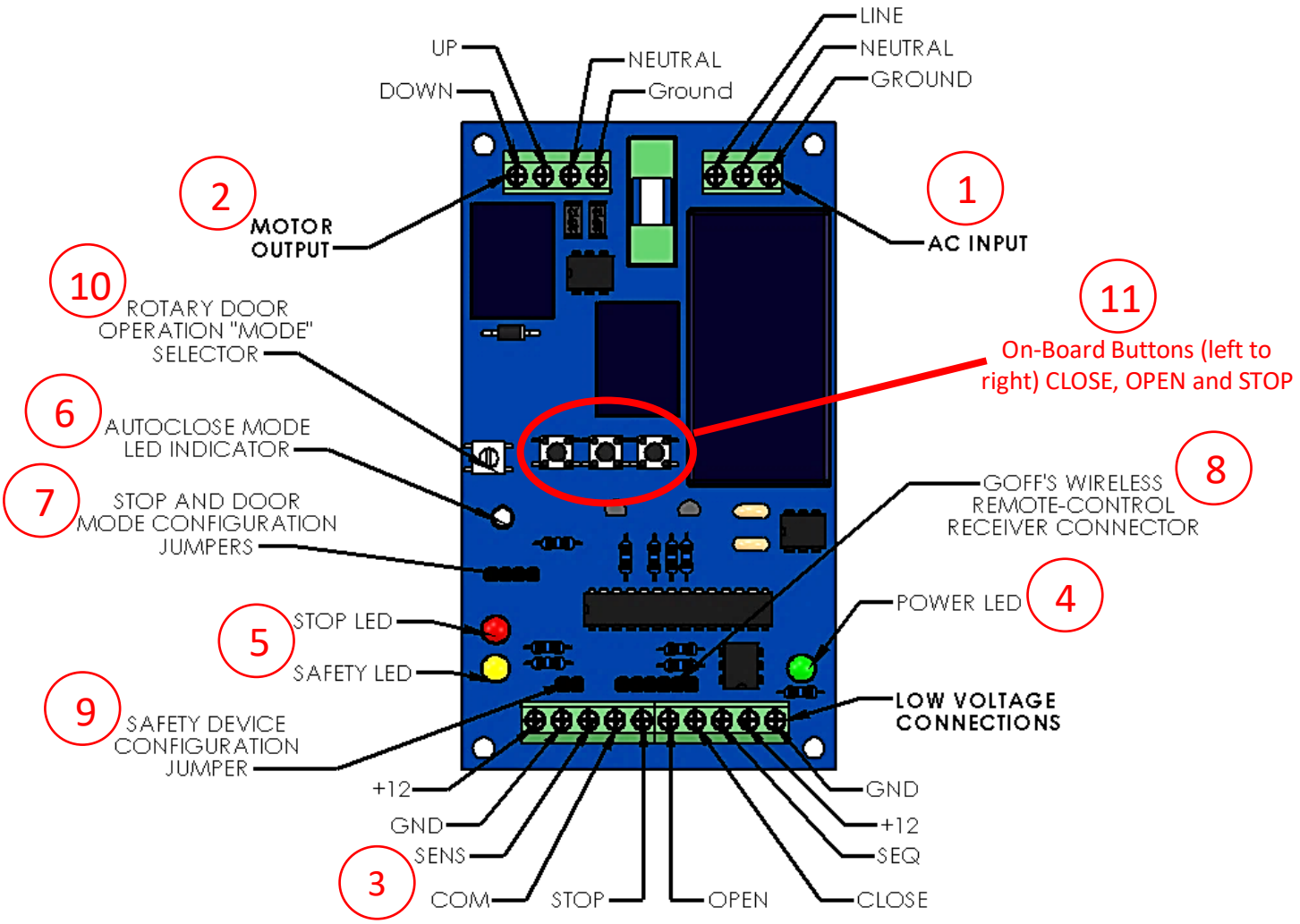


Figure 1: TFT Controller Schematic

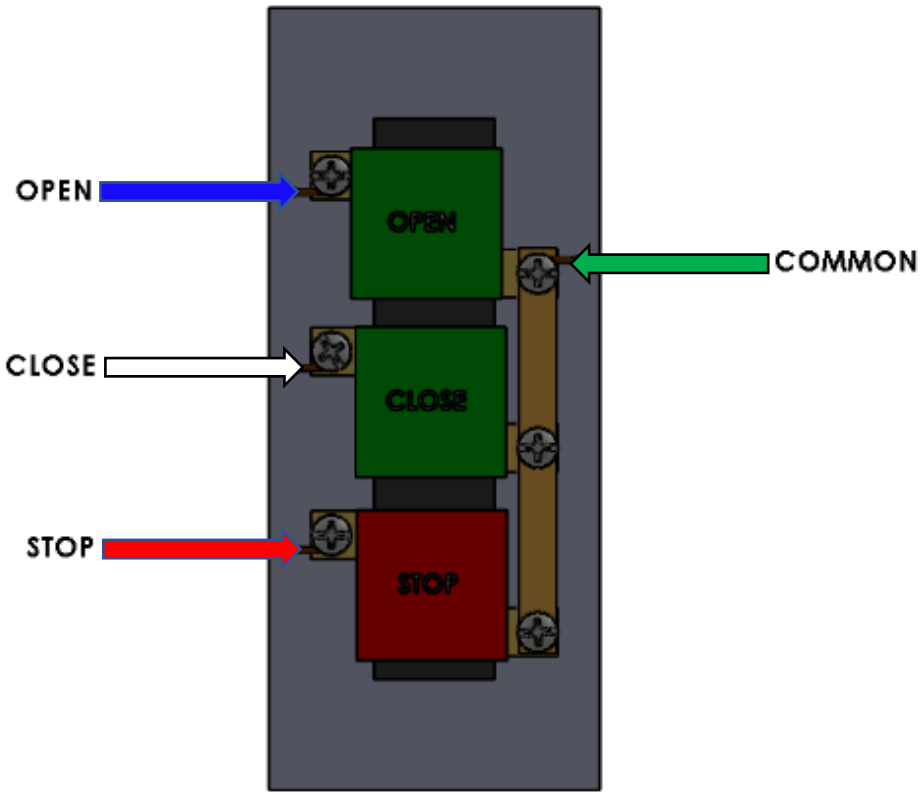
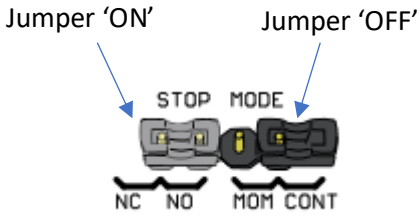


Figure 2: NEMA-1 Push-Button Wiring with a TFT Controller

PUSH-BUTTON STATION WIRING:

- Reference Figure 1
- The blue 'OPEN' wire goes to terminal labeled 'UP' on the TFT
- The white 'CLOSE' wire goes to terminal labeled 'DOWN' on the TFT
- The red 'STOP' wire goes to terminal labeled 'STOP' on the TFT
- The green 'COMMON' wire goes to the terminal labeled 'GND' on the TFT

MODE SETINGS / JUMPERS: (*Reference Figure 1)*



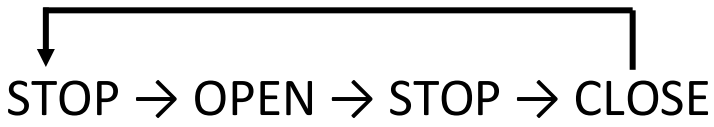
- ***Jumper 'ON' = connecting/shorting two pins***
- ***Jumper 'OFF' = covering one or no pins***

<u>Run-Time → MOM / CONT</u>

- Location 10 on board (see Figure 1)
- Rotary knob selects the two modes: MOM and CONT
  1. The mode is then selected by the position of the MODE jumper at location 7 (See Figure 1)

MOM/CONT jumper selector (Location 7, Right Jumper)

- In the **MOM or "ON"** position, the door will only move if the buttons are pressed/held continuously
  1. This mode can be used temporarily to close the door if there is a malfunction in the safety device when using the CONT mode described below
  2. ***NOTE: MOM mode disables safety devices***
- In the **CONT or "OFF"** position, a motor run-timer is started that will run for 40 seconds, or until the limit is reached, with one brief press of the up or down button.
  1. This mode allows for the use of external activation and safety devices.
  2. ***NOTE: Pressing the opposite direction button briefly, while the door is moving, will cause the motor to stop for ¼ second and then resume running in the opposite direction.***
  3. This mode can also be used to enable an optional "Sequential Mode" and permit the use of safety devices, wireless remotes, pull-cords, etc.
  4. When the control is wired for sequential mode, every time a momentary contact switch is activated, the controller will change the movement of the door in the sequential order shown:

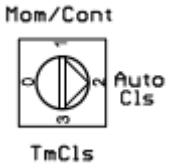


STOP jumper selector (Location 7, Left Jumper)

- The stop jumper is used to configure the controller to work with either a Normally Open (N/O) or a Normally Closed (N/C) STOP button
- Place the STOP jumper in the N/O or "ON" position when using a N/O STOP control button.
  1. In this configuration, the STOP LED will illuminate, and the door will stop when the "STOP" button is pressed.
     a. ***NOTE: STOP jumper must be in N/O position if a STOP control button is not used.***
- Place the STOP jumper in the N/C or "OFF" position when using a N/C STOP control button
  1. In this configuration, the STOP LED will illuminate, and the door will stop when the "STOP" button is pressed.

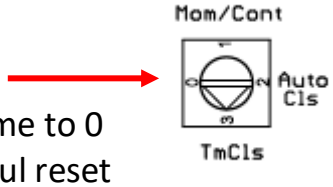
SENS Jumper Selector (Location 9 on board)

- With the SENS jumper in the N/O position, a N/O safety device (Photo Eye) connected to SENS and COM terminals, will activate the safety functions of the motor controller
- With the SENS jumper in the N/C position, a N/C safety device (Photo Eye) connected to SENS and COM terminals, will activate the safety functions of the motor controller
  1. The safety function of the motor controller will activate when a person or vehicle blocks the photo-eye's beam. This will cause the door to reverse direction and open.
  2. ***NOTE: safety function will only be activated by the photo-eye when the door is closing***

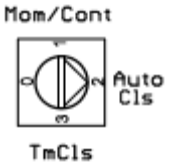


<u>Auto-Close Timer → TmCls</u>

- Location 10 on board (See Figure 1)
- Rotary knob in this position (AutoCls) will enable this mode
- This mode will automatically close the door from the fully open position (only) after a preset amount of time has expired.
  1. ***NOTE: The controller must be configured for CONT mode for Auto-Close function to work***
- To program the delay time, perform the following operations:
- ***NOTE: All programming changes to the operator must be made with door in the fully close position***
  1. Set the rotary knob to "TmCls" (arrow pointing down)

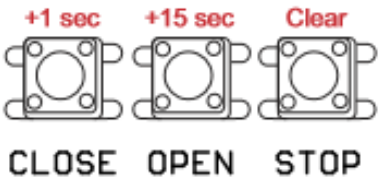


  2. Press the STOP button on the controller to reset delay time to 0
     a. Safety LED will start flashing, indicating successful reset
  3. To program you delay time, press the corresponding on-board buttons (location 11) to get to the desired time.
  4. Each press of a button adds its specified time
     a. For example, Pressing the "OPEN" button 3 times, will result in a 45 second delay before closing the door.
     b. the Safety LED will turn on for ½ second indicating the addition was saved**.**
  5. When the time delay has been set, rotate the rotary switch to "AutoCls"



  6. To suspend the Auto Close delay for 1 cycle, press and hold the "STOP" button for 3 seconds when the door is fully open. Press the

"CLOSE" button to close the door and cancel the suspension of the Auto Close delay.



SETTING THE LIMITS:

- With everything complete, take a moment to check all your hardware, and all the components for horizontal and vertical alignments.

- ***Goff's Enterprises ALWAYS recommends having a qualified Electrician mount the Switch Control Box, route, and connect all wiring before applying power to the Door Assembly. Goff's is not responsible for issues that are a result of poor and/or improper installation or electrical work.***

- Observe which type of limit adjustment mechanisms you have:
    1. 600 Series Doors have button limits
        a. Top Button = Close Limit
        b. Bottom Button = Open Limit

        c. Buttons 'IN' = Limit Disengaged (no limit)
        d. Button 'OUT' = Limit Enabled (limit on)

    2. 1200/1800/BASIC Series Doors have dial limits
        a. Top Dial = Close Limit
        b. Bottom Dial = Open Limit

        c. Clockwise Turn = Adding Door Travel
        d. Counter-Clockwise Turn = Removing Door Travel

For 600 Series Doors:

- Always, FIRST JOG THE DOOR DOWN toward the closed position. Observe where the lower limit stops the door and adjust accordingly by depressing the upper button at the end of the motor. (See Figure 3) Run the door partially upward, stop, and then close again a few times up and down to make finer adjustments for the closed position as desired.

- Now open the door and note the upper stop point. Adjust in the same way using the lower button at the end of the motor. (See Figure 3) Repeat a few times until the desired upper stop position is finally achieved.

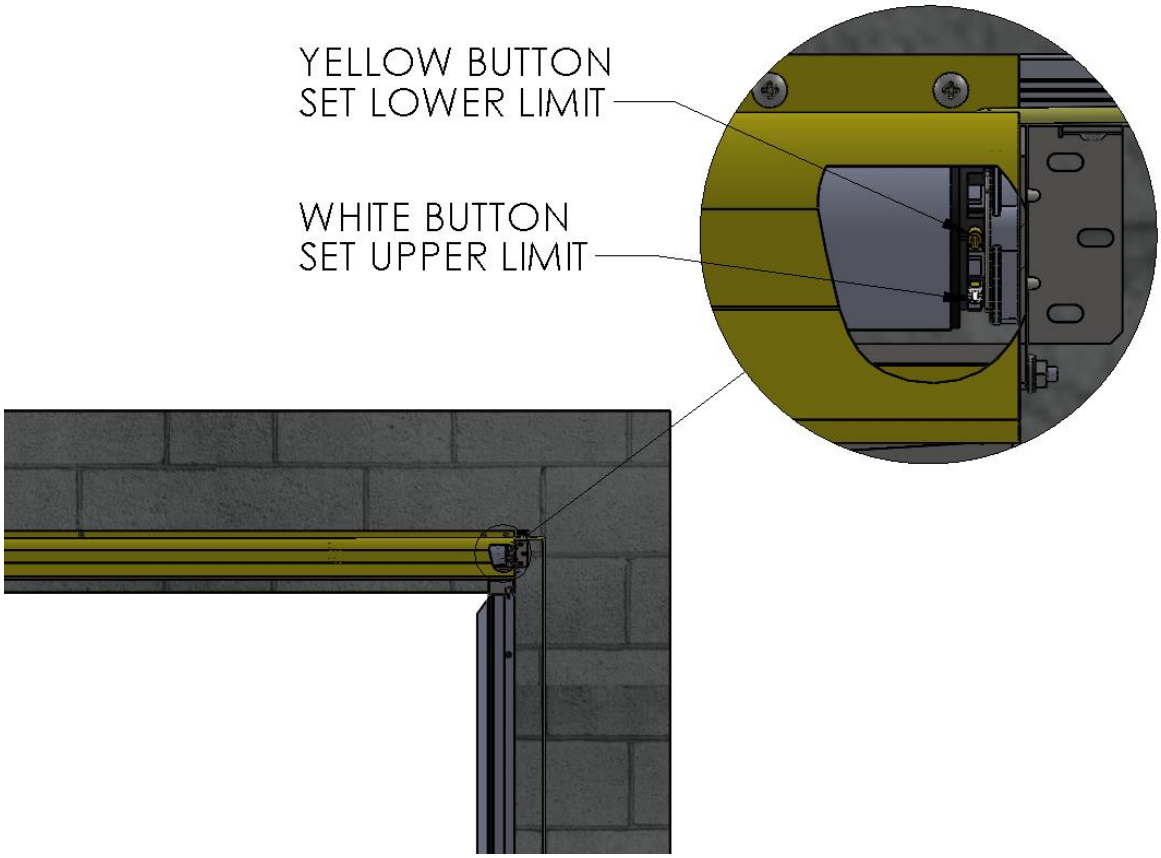


Figure 3: 600 SERIES DOOR RAISE/LOWER DOOR ADJUSTMENT

For 1200/1800/BASIC Series Doors:

Begin by placing your door in Momentary Run time by placing the 'MODE' jumper in the 'ON' position (see 'MODE SETTINGS / JUMPERS' on page 3). Always JOG THE DOOR DOWN FIRST, toward the closed position. If the door stops somewhere on its own on the way down, we can begin the limit setting process from that point. If the door does not stop on its own, manually stop the door about 1 to 2 feet above the desired closed position. Now, turn the top dial on the end of the motor counter-clockwise (ccw) to remove travel from the close limit (See Figure 4 on page 9). Keep turning ccw until you feel or hear a slight bump/click in the dial as you turn. Once you reach this point, whether your door stopped on its own, or you stopped it yourself and removed travel manually from the dial, we are ready to set the limit at our desired closed position.

Press and hold the close button. The door SHOULD NOT MOVE. If it does, add more ccw turns to the top dial. Once there is no movement, we can now move the 'MODE' jumper to the 'OFF' position. Once you do this, press the close button, and immediately add clockwise turns to the top dial. As you turn the dial clockwise, the door will inch itself down. Continue to add clockwise turns to the top dial until the door inches itself into your desired closed position.

To set the Open limit, place the 'MODE' jumper back in the 'ON' position. Jog the door up and stop it 1-2 feet shy of the desired open position. Adjust this limit in the same fashion as you did the close limit, using the lower dial on the motor (See Figure 4 on page 9).

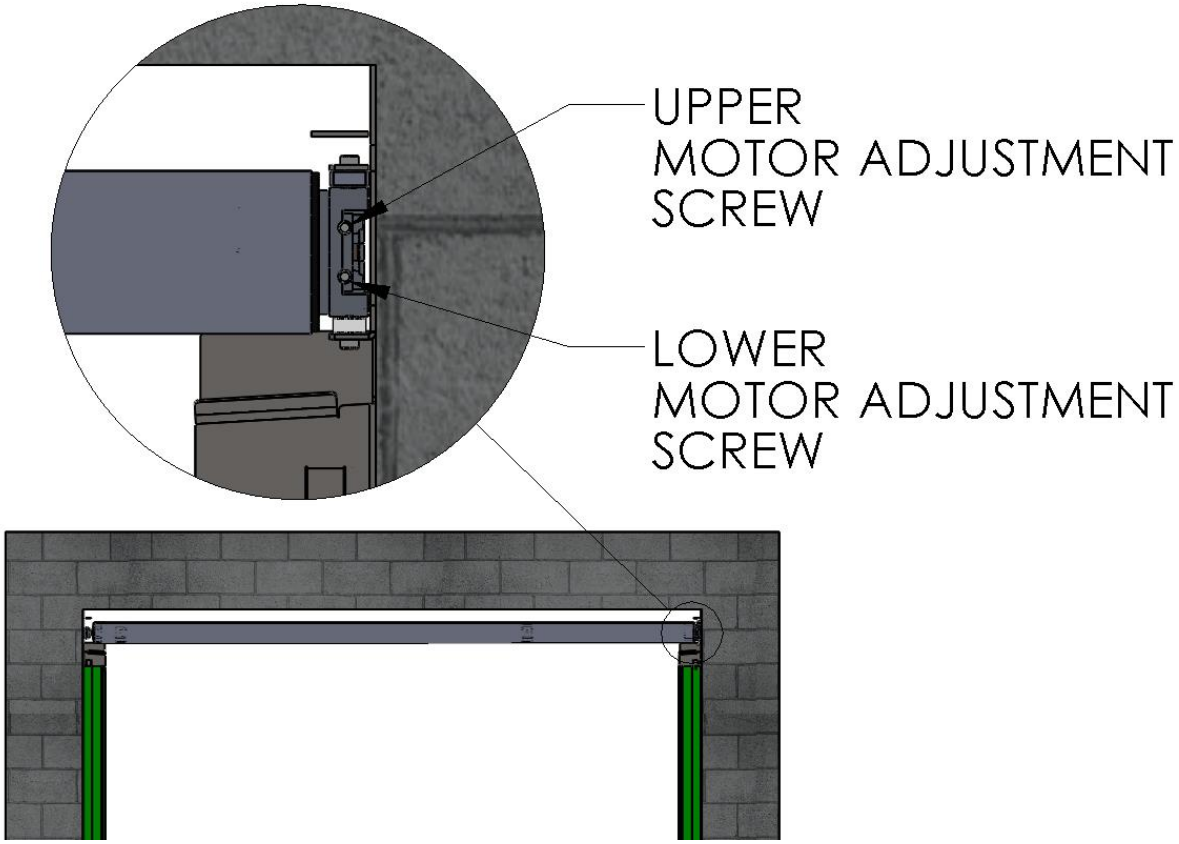


Figure 4: 1200/1800/BASIC SERIES DOOR RAISE/LOWER DOOR ADJUSTMENT

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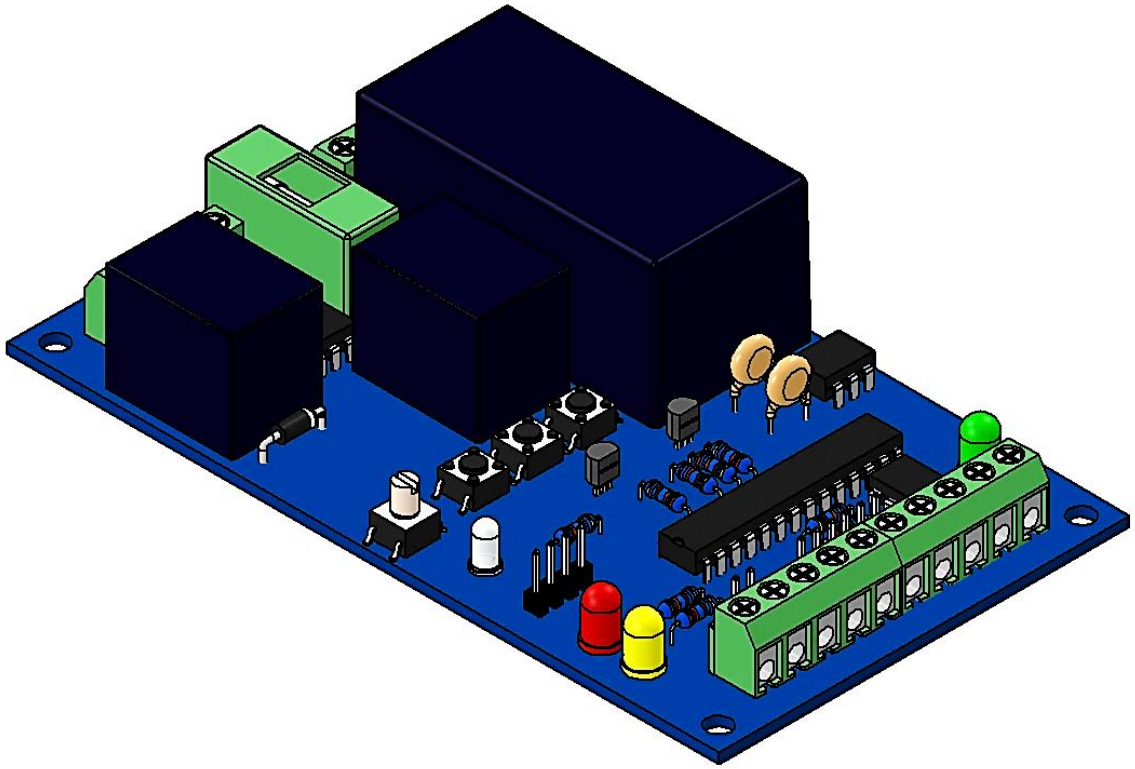
TFT Motor Controller

WIRING INSTRUCTIONS - ACCESSORIES

USED WITH 600, 1200, 1800, and BASIC SERIES IN-TUBE MOTORS WITH A 3-BUTTON STATION



OPTIONAL ACCESSORIES:

NEMA-1 (3) Button Station(s).....Page 11
Retro-Reflective Photo Eye.....Page 11
Ceiling Pull Cord.....Page 12
Falcon XL Motion Detector.....Page 13
Plug-In RF Receiver.....Page 13
RF Remote Programming.....Page 14

NEMA-1 (3) Button Station (Primary/Secondary PBS)

- Refer to Figure 1 on page 2 for TFT terminal locations
- The blue 'OPEN' wire goes to terminal labeled 'UP' on the TFT
- The white 'CLOSE' wire goes to terminal labeled 'DOWN' on the TFT
- The red 'STOP' wire goes to terminal labeled 'STOP' on the TFT
- The green 'COMMON' wire goes to the terminal labeled 'COM' on the TFT

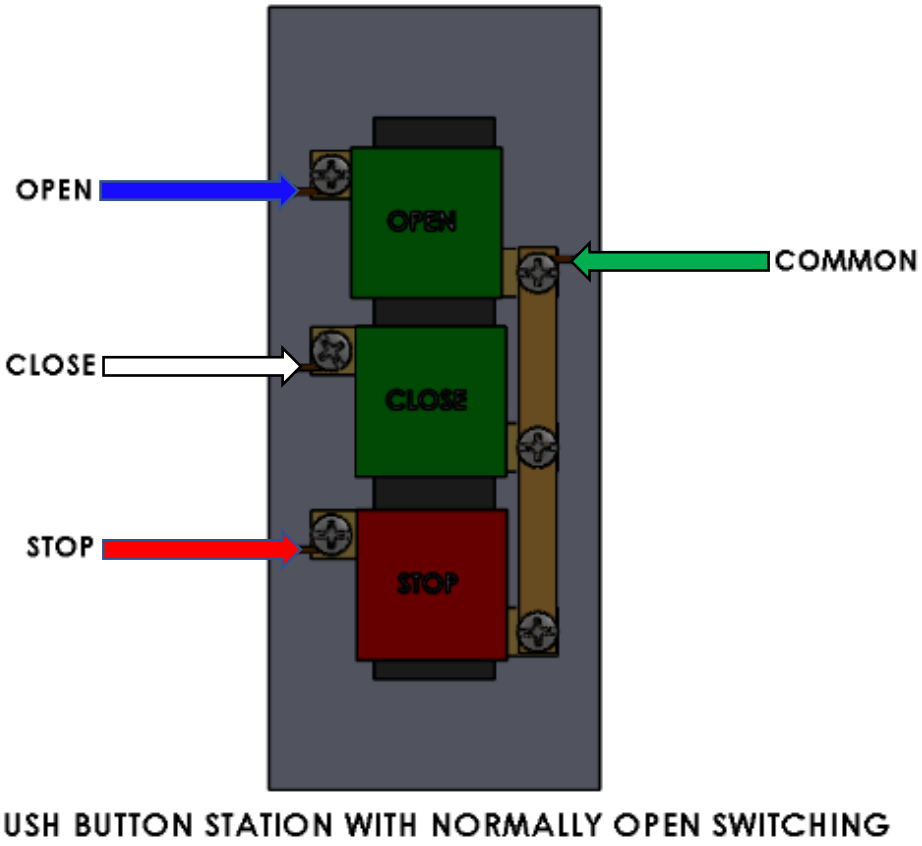


Figure 5: NEMA-1 Push-Button Wiring with a TFT Controller

Retro-Reflective Photo Eye

- See Below if wiring direct to terminal block
- Otherwise, see page 15 for 8-conductor wiring
- The Black Photo-Eye wire goes to terminal labeled 'SENS' on the TFT
- The Orange Photo-Eye wire goes to terminal labeled 'COM' on the TFT
- The Brown Photo-Eye wire goes to terminal labeled '+12' on the TFT
- The Blue Photo-Eye wire goes to terminal labeled 'GND' on the TFT
- ***ON THE EMITTER UNIT, REMOVE THE RUBBER CAP, OPEN THE CLEAR PLASTIC DOOR, AND SET THE SLIDE TO 'DARK OPERATION' (DK)***

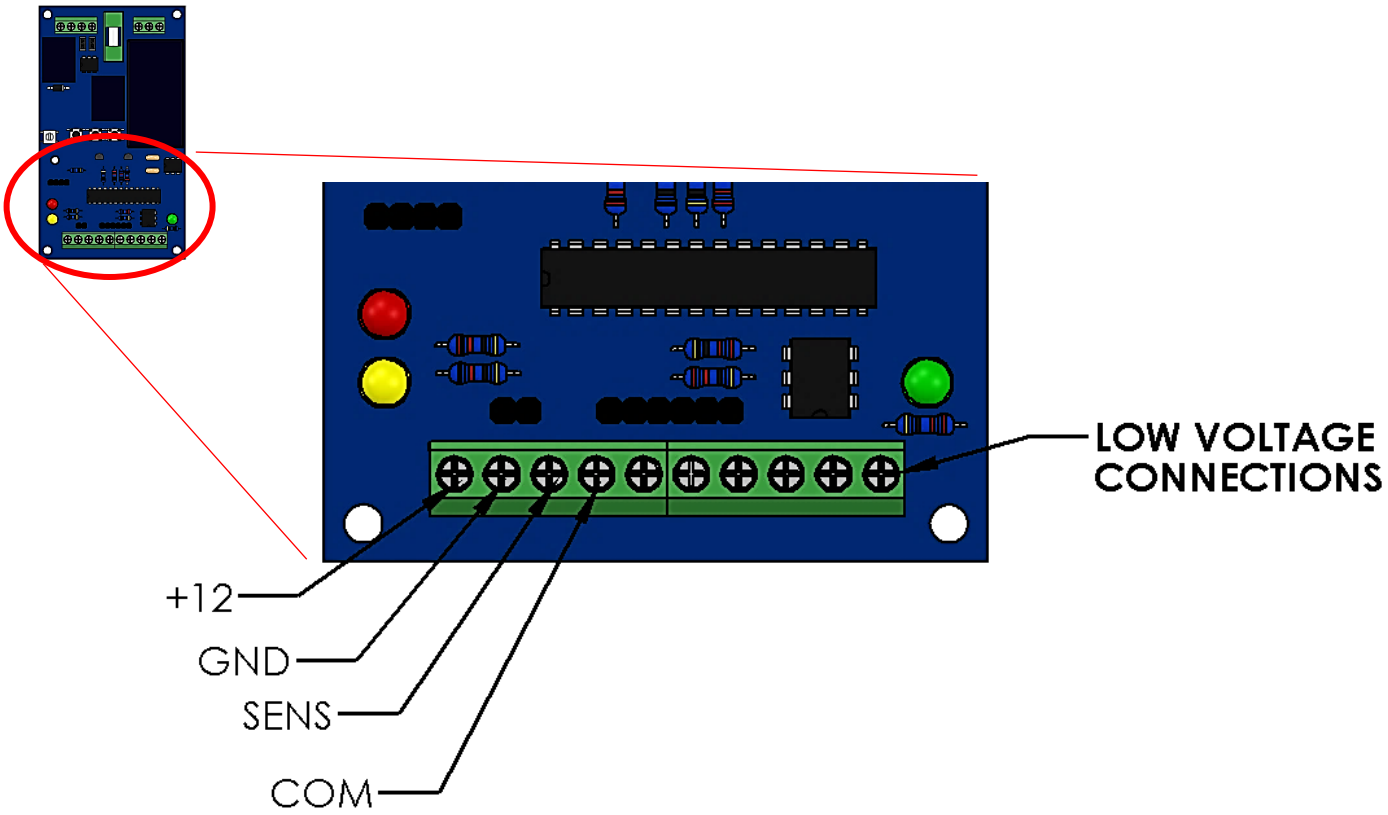


Figure 6: Retro-Reflective Photo Eye Wiring with a TFT Controller

Ceiling Pull Cord

- See Figure 7
- The White Pull-Cord wire goes to terminal labeled ‘SEQ’ on the TFT
- The Red Pull-cord wire goes to terminal labeled ‘COM’ on the TFT

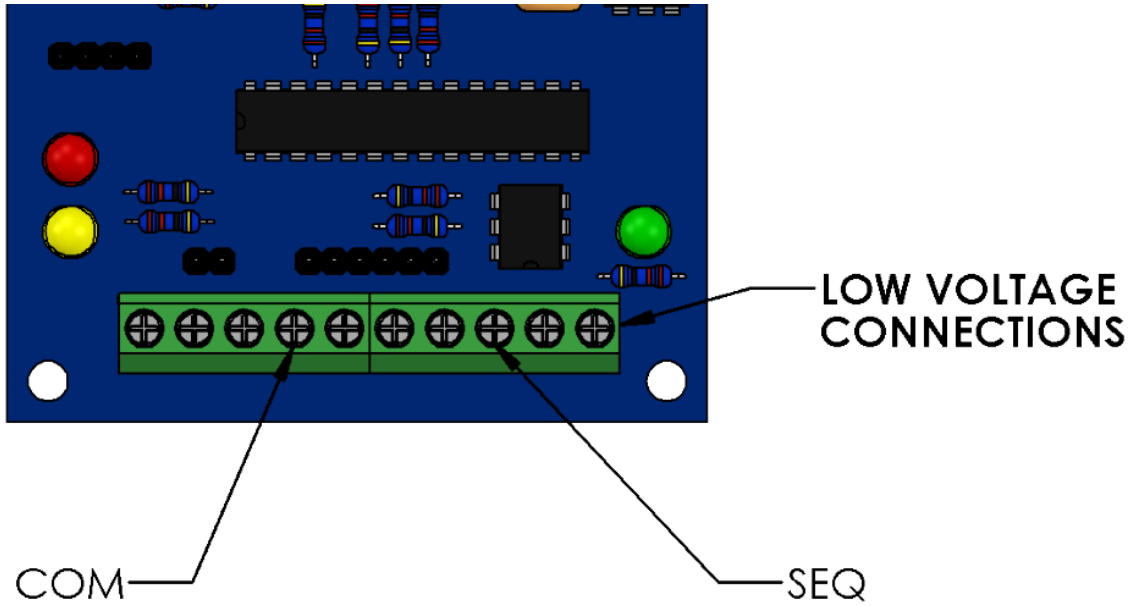


Figure 7: Ceiling Pull Cord Wiring with a TFT Controller

Falcon XL Motion Detector

- See Figure 8
- The Green Device wire goes to terminal labeled 'OPEN' on the TFT
- The Red Device wire goes to terminal labeled '+12' on the TFT
- The Black Device wire goes to terminal labeled 'GND' on the TFT
- White Device wire goes to terminal labeled 'COM' on the TFT

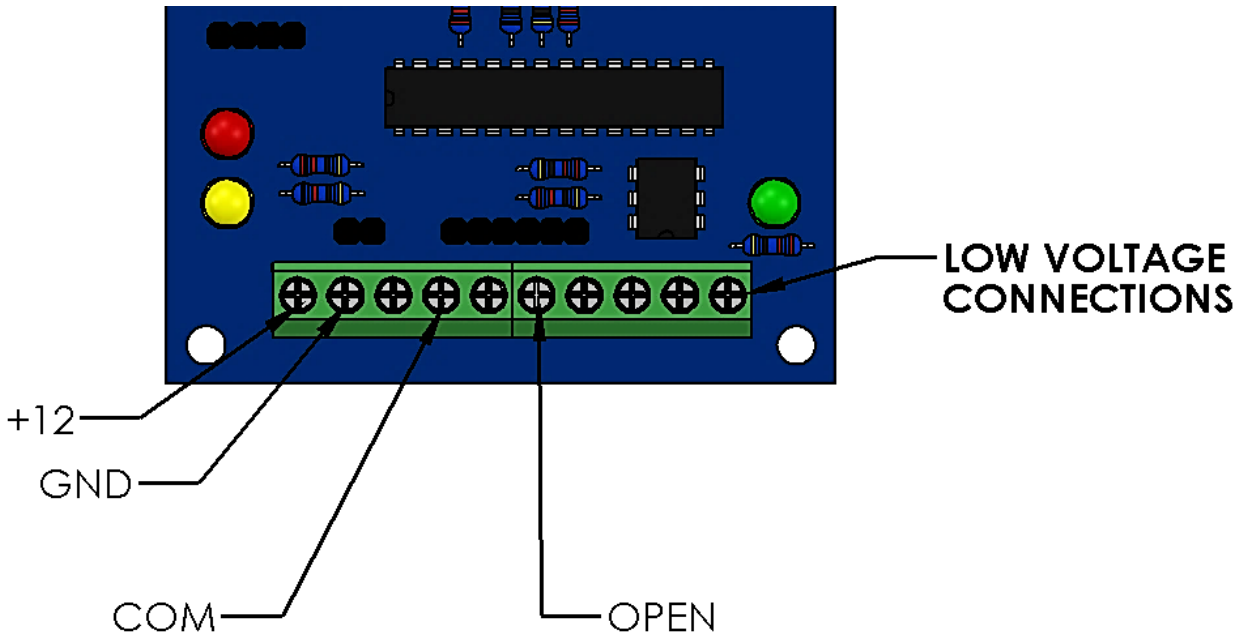


Figure 8: Falcon XL Motion Detector Wiring with a TFT Controller

Plug-in RF Receiver

*****ALL OTHER ACCESSORIES SHOULD BE WIRED COMPLETELY BEFORE INSTALLING AN RF RECEIVER*****

- Align the support posts on the RF Receiver with the corresponding mount posts on the TFT
- Ensure the Header Connector on the Receiver is in alignment with the pins on the TFT controller (Location 8 in Figure 1)
- Firmly press the Receiver onto the TFT controller
- It may be necessary to slightly tilt or "wiggle" the Receiver for the Header Connector to properly mate with the pins on the TFT controller
- Ensure the Header Connector is fully seated onto the pins on the TFT controller
- Enable the 115VAC power to the TFT controller: Receiver LED should illuminate

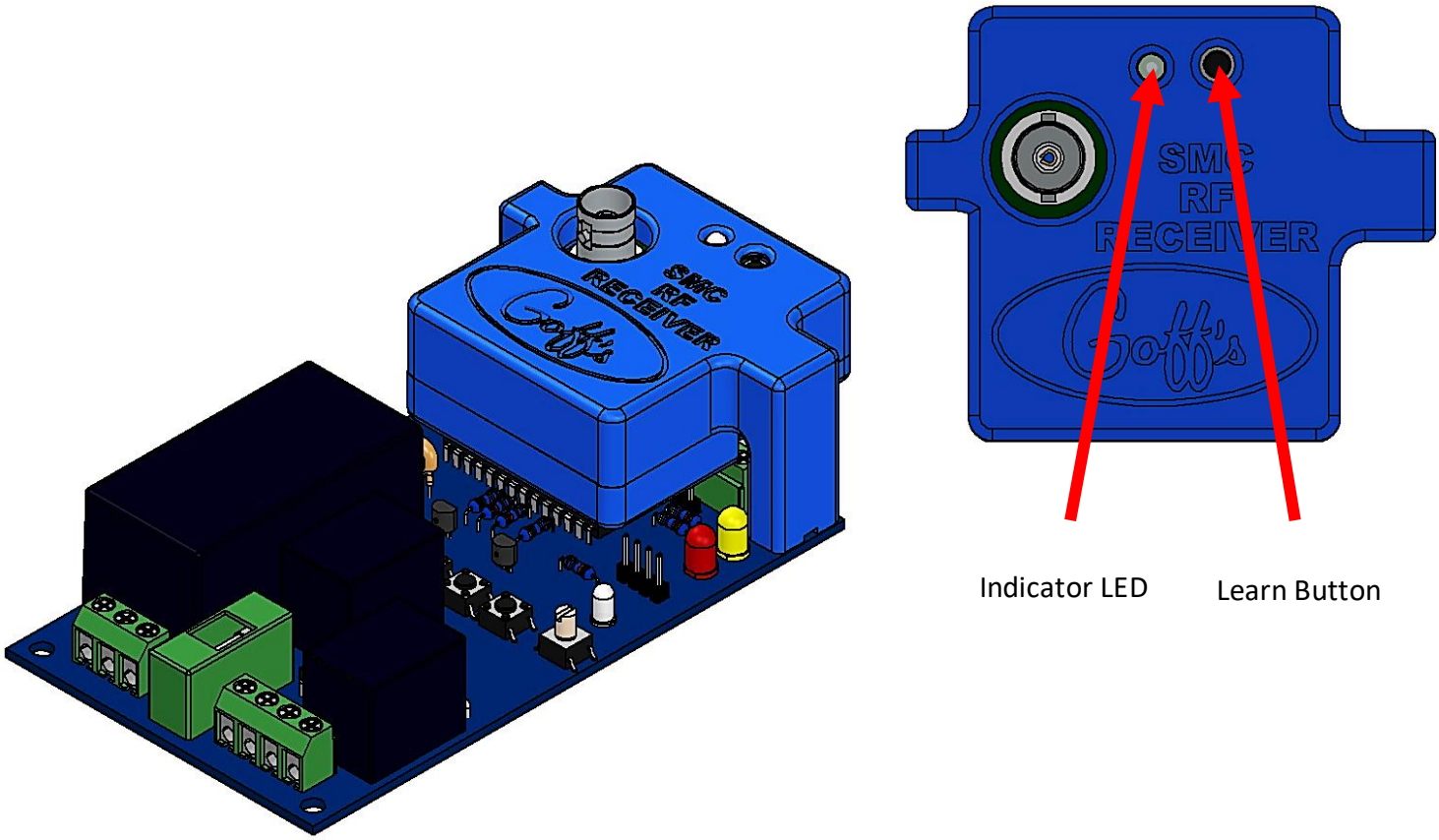


Figure 9: RF Receiver Mounted on TFT Controller

RF Remotes: Programming

- ***SEE TABLE 1 ON NEXT PAGE***
- ***NOTE: you can match 3-Button Remotes and 1-Button Transmitters with the same Receiver. One Receiver will accept up to 50 Remotes***
- Goff's offers single-button and three-button RF remotes
- Three-button remotes are single- and multi-door compatible
    1. Jumper on inside of remote sets mode - SD vs. MD
- To sync remote(s) to an RF receiver:
    1. HOLD the Receiver's **LEARN** button until the LED flashes
    2. HOLD any button on the Remote until the Receiver's LED stops flashing

Remote	Modes	Functions	Programming
 1-Button Remote	Single Button Control (SBC) Alternating Sequence	OPEN / STOP / CLOSE → Button **Door is CLOSED:** - Click Button → Door OPENS **During UPWARD Travel:** - Click Button → Door STOPS **Door is STOPPED:** - Click Button → Door CLOSES **During DOWNWARD Travel:** - Click Button → Door STOPS **Door is STOPPED:** - Click Button → Door OPENS **Note**: If the door has been in the OPEN position for less than one minute it will be necessary to click the button twice in order to start downward travel.	1. None Required

Remote	Modes	Functions	Programming
 3-Button Remote	Three Button Remote	1. OPEN → Small Button 2. CLOSE → Medium Button 3. STOP → Large Button	1. Unscrew the screw on the back of the Remote. 2. Insert a flat screwdriver in the rounded corner of the Remote. 3. Pry open the Remote's cover. 4. Position jumper on **SD** (Single Door). 5. Put the Remote's cover back-on and fasten the screw.
	3 x 1-Button	1. DOOR #1 → Small Button 2. DOOR #2 → Medium Button 3. DOOR #3 → Large Button Each button acts separately as a 1-Button Remote	1. Unscrew the screw on the back of the Remote. 2. Insert a flat screwdriver in the rounded corner of the Remote. 3. Pry open the Remote's cover. 4. Position jumper on **MD** (Multiple Doors). 5. Put the Remote's cover back-on and fasten the screw.

Table 1: RF Remote Programming

Final Assembly:

Install the TFT controller on its enclosure. If using the supplied box, the radio range can be substantially improved by routing the free end antenna wire outside of the enclosure.

Supplemental Instructions:

If you received a Retro-Reflective Photo Eye with your SMC controller, and would like to use 8 conductor thermal wire for a cleaner install, please see below:

Using 8-conductor wire allows a cleaner wiring setup in which only 1 bundle runs between the push button station and the operator. You now can use 4 of the wires from your 8-conductor, and run them to the push buttons (open, stop and close), and use the other 4 to connect to your photo-eye wires (inside of the push button station), leaving only 1 wire bundle running up to your controller.

To do so, connect the blue, white, green and red wires to the push button station as outlined (see push button station wiring diagram on page 11).
Using wire nuts, connect your 4 remaining wires (from 8 conductor bundle) to the wires of your photo eye transmitter as follows:

- Black from 8 conductor to Blue from Photo-Eye
- Brown from 8 conductor to White from Photo-Eye
- Yellow from 8 conductor to Brown from Photo-Eye
- Orange from 8 conductor to Orange from Photo-Eye
- The Black wire from the Photo-Eye is not used

Tuck all the wires and wire nuts neatly away inside of the push button station and close the lid carefully, ensuring that there are no pinched or interfering wires.

On the TFT controllers' terminal block, make the following connections with the opposite end of the 8-conductor bundle:

- The Red wire goes to terminal labeled 'STOP' on the TFT
- The Green wire goes to terminal labeled 'GND' on the TFT
- The White wire goes to terminal labeled 'CLOSE' on the TFT
- The Blue wire goes to terminal labeled 'OPEN' on the TFT
- The Brown wire goes to terminal labeled '+12' on the TFT
- The Orange wire goes to terminal labeled 'SENS' on the TFT
- The Yellow wire goes to terminal labeled 'GND' on the TFT
- The Black wire goes to terminal labeled 'COM' on the TFT

If you did not receive 8 conductor wire, or you would rather run your Photo-Eye directly to the terminal block, follow the wiring instructions on pages 11 and 12.

TROUBLESHOOTING:

- No response from controller/motor
    1. If the power LED is off, confirm that there is 115VAC at the power input terminals of the circuit board
    2. Check the 5Amp fuse on the circuit board. Replace if damaged
    3. If the Power and Stop LEDs are ON:
        a. check that the Stop jumper is configured correctly for the switch type, N/O or N/C
        b. Check connections to the stop button
    4. If the Power LED is ON and the Stop and Safety LEDs are OFF:
        a. check the connections to the motor
        b. Check the motor limits. Turn the open or close limit adjustment screw 5 revolutions and retry, if the motor runs please adjust the motor limits
        c. Check the control button wiring.
- Door stuck in open position
    1. If it is an emergency and/or door needs to be closed immediately, place the MODE jumper in 'ON' or MOM position (momentary run time), then press and hold the close button until the door closes completely
    2. If the Safety LED is ON:
        a. Check the wiring and connections to the Safety device (Photo eye)
        b. Confirm that the SENS jumper is configured correctly for the type of safety device used, N/O or N/C
        c. Check the safety device (Photo eye) alignment.
    3. If the Safety LED is OFF: Check the connections to the motor. Check the motor limit (turn the close + limit adjustment screw 5 revolutions and retry).
- Door only runs if the up or down buttons are pressed and held
    1. This is correct operation if a safety device (Photo eye) is not installed. If a safety device is installed, the MODE jumper must be configured to CONT

WARNING

ALL INSTALLATION INSTRUCTIONS MUST BE FOLLOWED, AND REQUIREMENTS MET. FAILURE TO DO SO WILL ALTER THE PERFORMANCE AND/OR CONSISTENCY OF YOUR DOOR'S OPERATION.