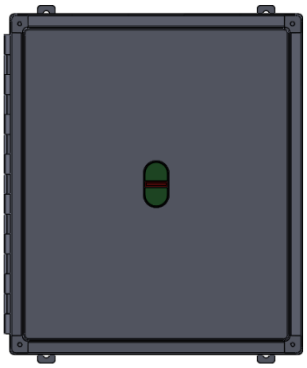
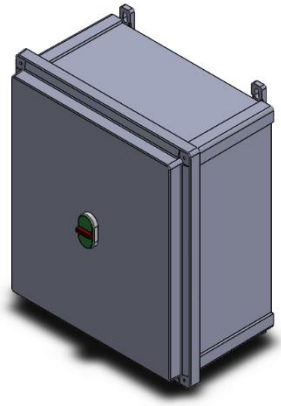
READ THIS MANUAL CAREFULLY. OBSERVE WARNINGS AND PRACTICE CAUTION WHEN INSTALLING, OPERATING, OR MAINTAINING YOUR GOFF'S PRODUCT.

PLC CONTROL PANEL

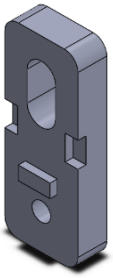
INSTALLATION, ELECTRICAL CONNECTIONS, AND MOTOR ADJUSTMENTS

(Programmable Logic Controller)



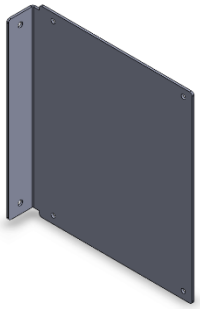


***Before you call us**: Please note that regardless of your available input power, you will receive a 3-phase motor. The control panel you receive will 'transform' your specified input power from your order to 3-phase (230V or 460V) to power the motor.*



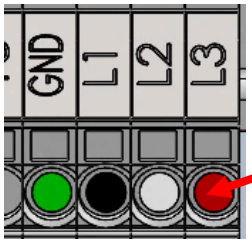
MOUNTING THE UNIT:

- If mounting to the face of the opening, use the supplied fasteners and securely mount the feet to the back side of the control box.
- If mounting to a free-standing frame, use the supplied Control Panel Side Mount
- Use best practices to securely mount the control box in an approporiate location.
- Please follow all local and state codes for your area.



VOLTAGE SUPPLY LINES:

- Insert the power supply line wires into the control panel via strain relief nut and to the input terminal strip in the appropriate locations on the right side of the terminal block.
- This should be done by a certified electrician to ensure safety of the user and the equipment



ONLY USED FOR 3-PHASE

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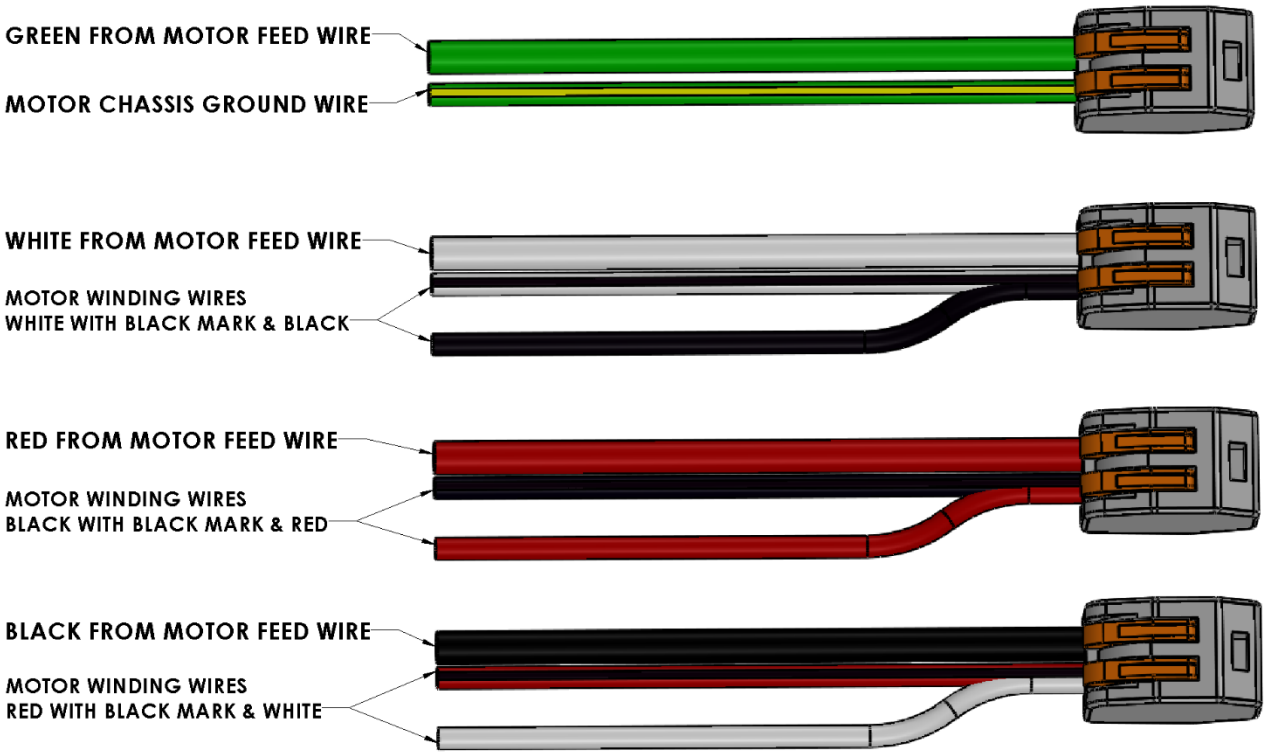
115V & 230V UNITS:

- Locate the 4 conductor wire marked ‘motor’ and remove the insulative material, preparing each wire to make the following connections;
    - Green from ‘motor’ bundle to green/yellow from chassis ground
    - White from ‘motor’ bundle to black/white pair from motor windings.
    - Red from ‘motor’ bundle to red/black pair from motor windings
    - Black from ‘motor’ bundle to red/white pair from motor windings

MOTOR WIRE CONNECTIONS FOR 115VAC AND 230VAC VERSIONS

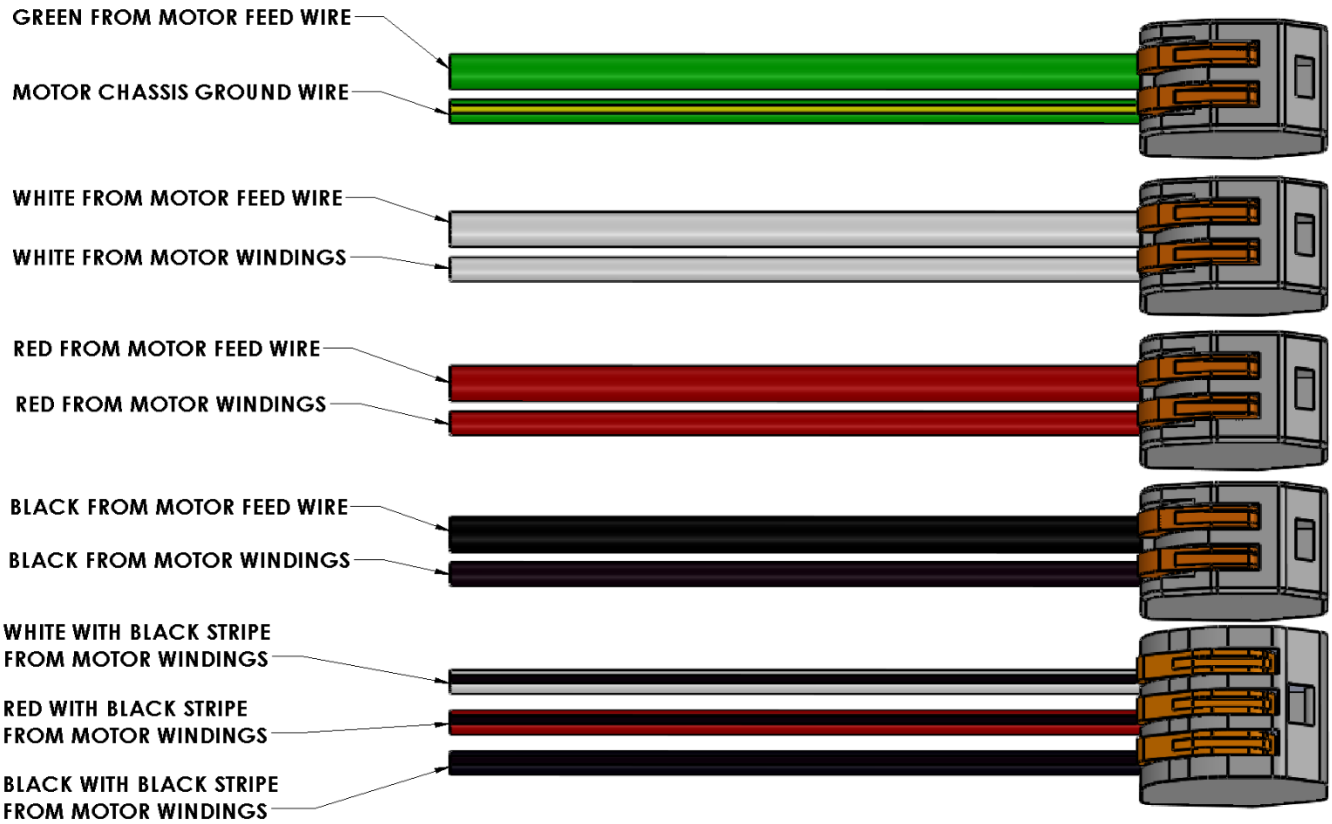


NOTE: TO REVERSE MOTOR ROTATION, SWITCH RED AND WHITE 4 CONDUCTOR WIRES

460V UNITS:

- Locate the 4 conductor wire marked ‘motor’ and remove the insulative material, preparing each wire to make the following connections;
    - Green from ‘motor’ bundle to green/yellow chassis ground
    - White from ‘motor’ bundle to white wire from motor windings
    - Red from ‘motor’ bundle to red wire from motor windings
    - Black from ‘motor’ bundle to black wire from motor windings
    - Locate the 3 motor winding wires with a black mark (white, red, black)
    - Place these 3 wires in the provided 3 terminal WAGO connector

MOTOR WIRE CONNECTIONS FOR 460V VERSION

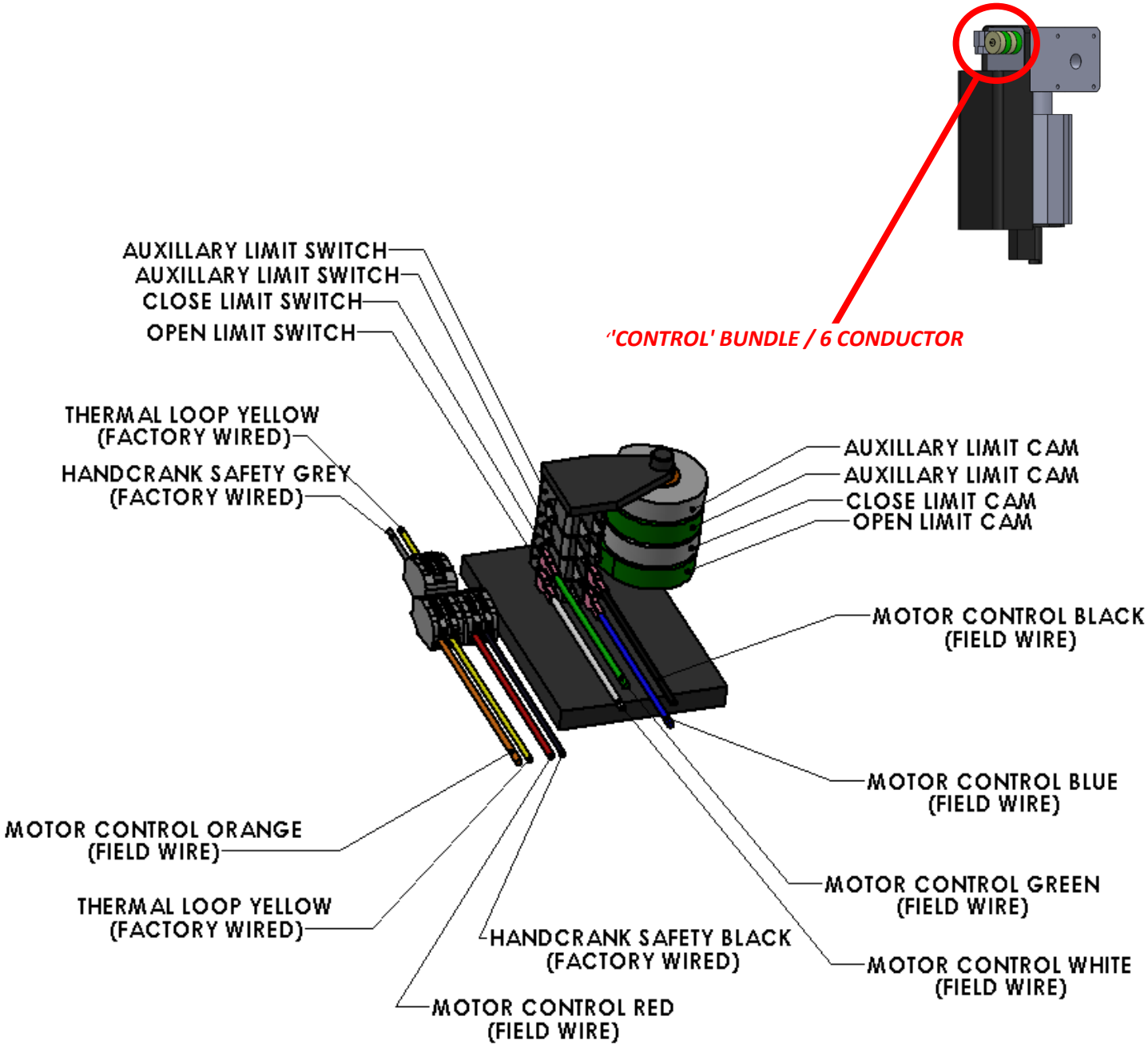


NOTE: TO REVERSE MOTOR ROTATION, SWITCH RED AND WHITE 4 CONDUCTOR WIRES

LIMIT & INTERNAL SAFETY SWITCH:

- Locate the 6 conductor wire marked 'control' and remove the insulative material, preparing each conductor to make the following connections; (SEE NEXT PAGE FOR DIAGRAM)
    - Blue from 6 conductor to N/C side (right) of open limit switch
    - Black from 6 conductor to N/C side (right) of close limit switch
    - White from 6 conductor to COM side (left) of open limit switch
    - Green from 6 conductor to COM side (left) of close limit switch
    - Orange from 6 conductor to yellow thermal protection wire
    - Red from 6 conductor to black from hand crank safety switch
    - Gray from hand crank safety switch to its own connector

Middle column on limits not used



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SETTING THE LIMITS: (ALWAYS SET LIMITS BEFORE OPERATING DOOR)

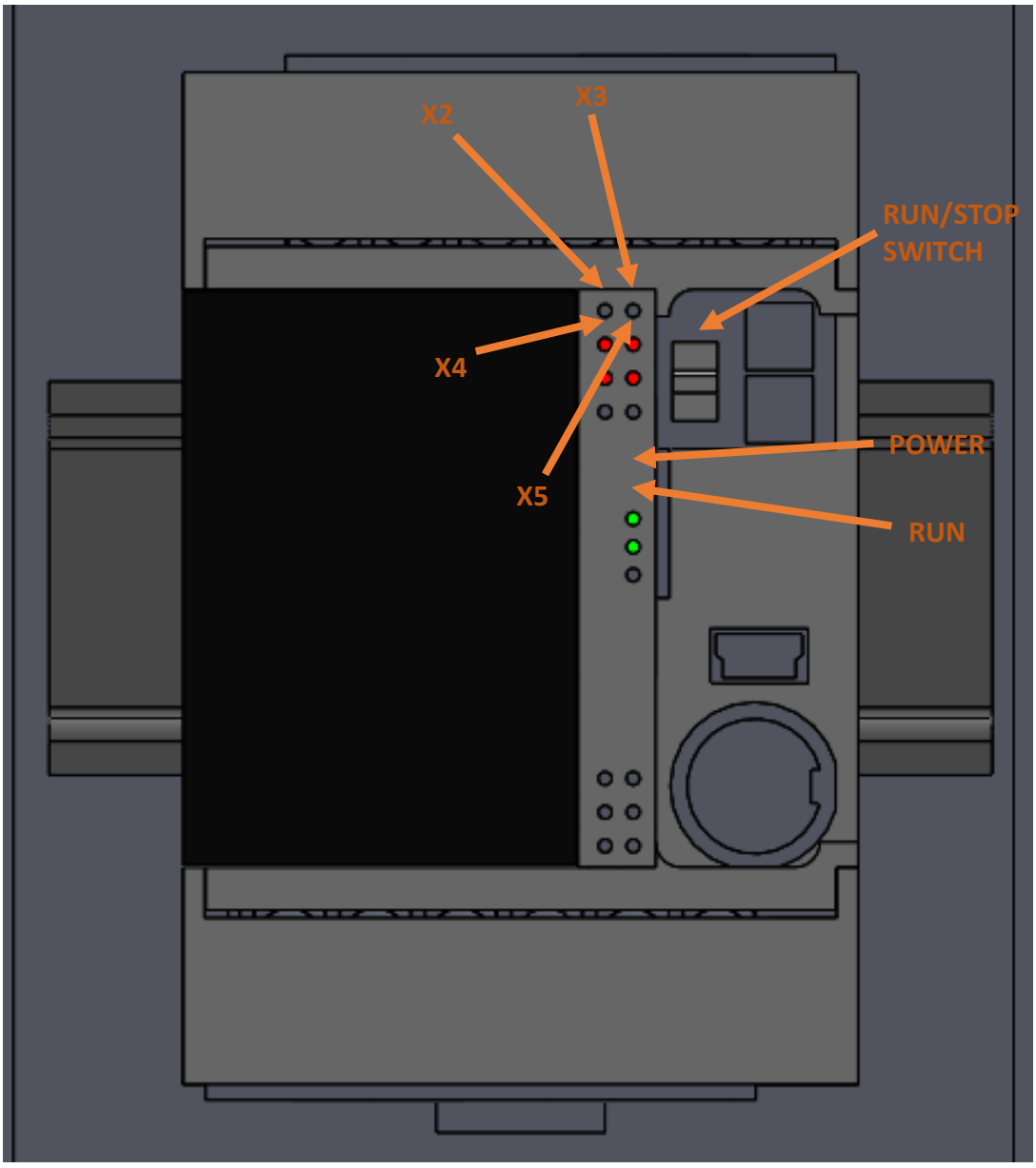
- Use the manual hand crank to raise the door to the desired fully-open position
- Loosen the set screw on the green open limit cam
- Rotate the cam clockwise until it contacts the open limit switch from underneath
- Tighten the set screw on the green open limit cam

- Use the manual hand crank to lower the door to the desired fully closed position
- Loosen the set screw on the white close limit cam
- Rotate the cam clockwise until it contacts the close limit switch
- Tighten the set screw on the white close limit cam
- Test limit positions and adjust as necessar

TROUBLESHOOTING:

In order for the door to run properly we need to see the following on the PLC:

- ***'DC OK' LED on transformer***
- ***Green 'POWER' and 'RUN' LED's***
- ***Red X2, X3, X4, and X5 Input LED's (top set of LED's)***
    - ***If the above are not illuminated the door will not run***
- Green 'DC OK' not illuminated – Check power supply input and wiring
- Green 'POWER' not illuminated
    - Ensure input power source matches the label on the control panel
    - Make sure your power source in plugged into the terminal strip
    - Ensure power source is ON
- Green 'RUN' not illuminated
    - Check that switch inside the cover of PLC is in the RUN position
        - Next to VR1 and VR2 (see inside cover of control panel)
- Red 'X2' input not illuminated
    - X2 = Open limit switch
    - Check limit switch wiring (see 'Control' Bundle diagram)
    - Open condition in N/C circuit
- Red 'X3' input not illuminated
    - X3 = Close limit switch
    - Check limit switch wiring (see 'Control' Bundle diagram)
    - Open condition in N/C circuit
- Red 'X4' input not illuminated
    - X4 = Safety Circuit / Safety Devices
    - Supplied Safety Devices are all N/C circuits
    - Confirm correct wiring via "VFD+PLC Accessory Wiring" document
    - Factory jumper in place: 24VDC to X4.1
- Red X5 input not illuminated
    - X5 = Stop Circuit
    - Supplied stop button(s) for this operator are N/C circuits
    - Secondary stations need stop buttons wired in series
    - Confirm correct wiring via "VFD+PLC Accessory Wiring" document
    - Factory jumper removed: 24VDC to X5.1



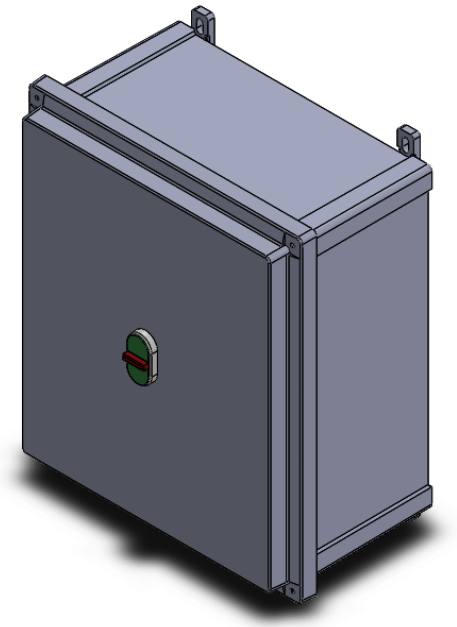
Proper LED illumination

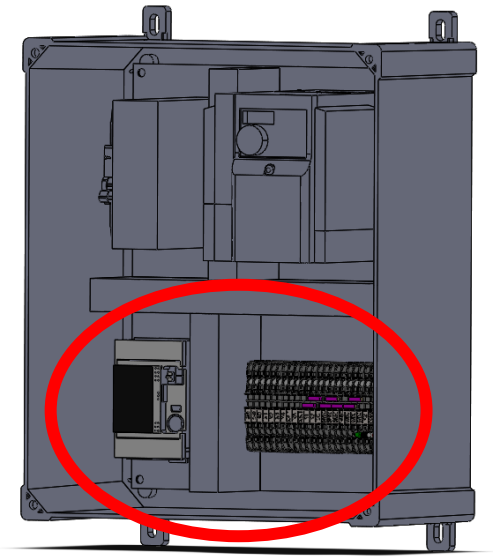
READ THIS MANUAL CAREFULLY. OBSERVE WARNINGS AND PRACTICE CAUTION WHEN INSTALLING, OPERATING, OR MAINTAINING THIS PRODUCT.

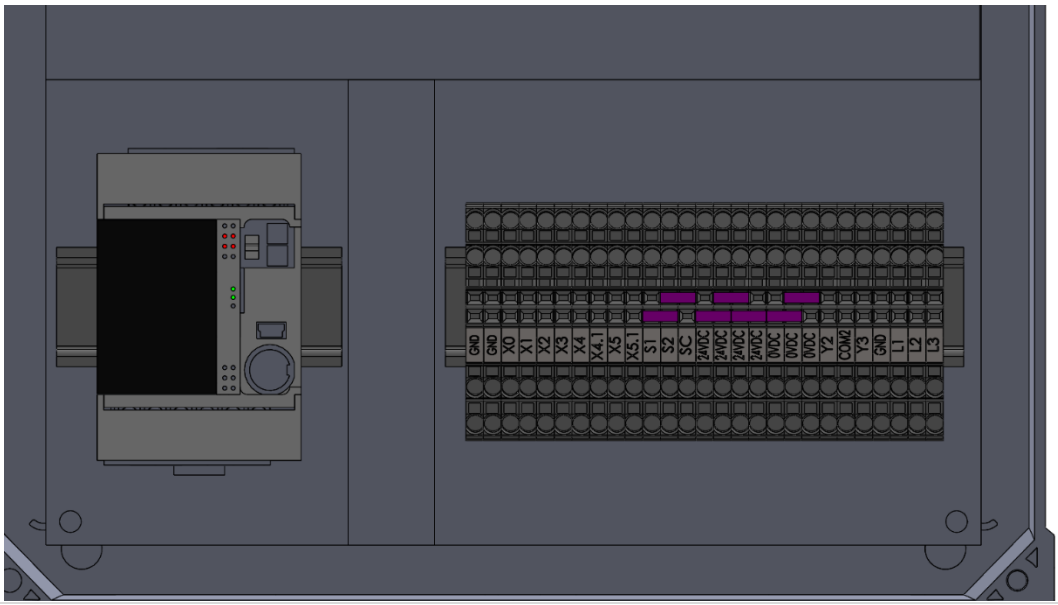
PLC OPERATED DOORS

ACCESSORY WIRING INSTRUCTIONS

(Programmable Logic Controller)







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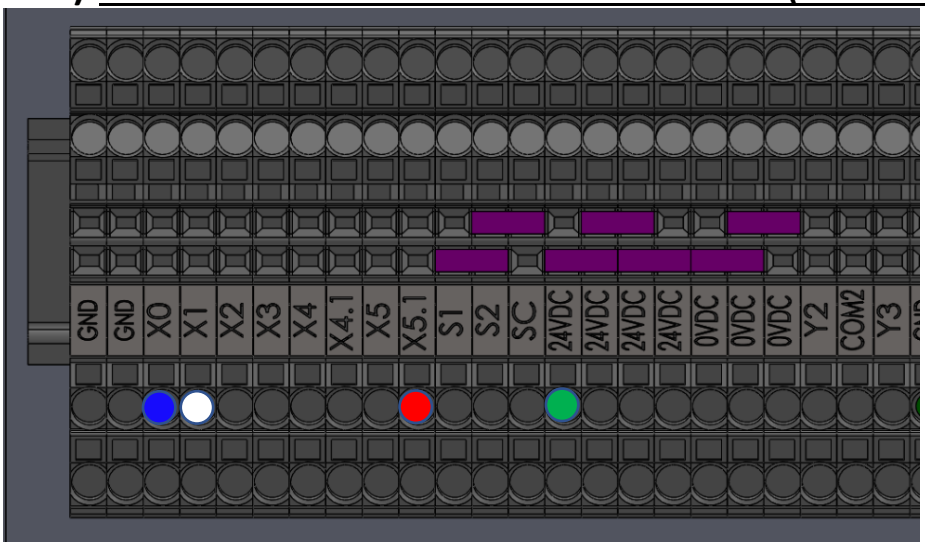
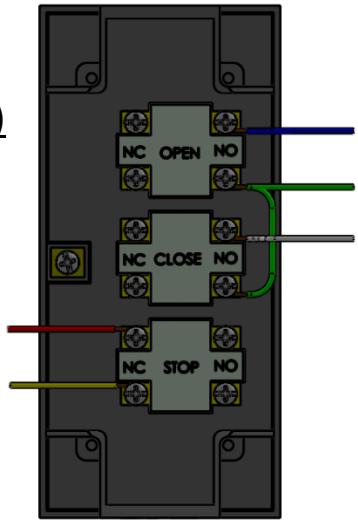
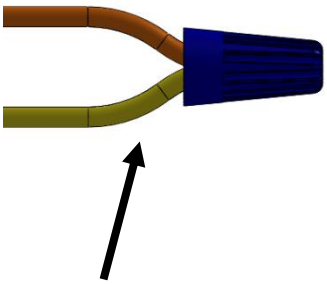
1) EXTERNAL NEMA-4 PUSH-BUTTON STATION (Secondary PBS)





Secondary PBS Wiring



REMOVE FACTORY (24VDC TO X5.1) JUMPER TO INSTALL EXTERNAL STOP

STOP BUTTONS MUST BE IN SERIES

X0 – BLUE from N/O Open Button

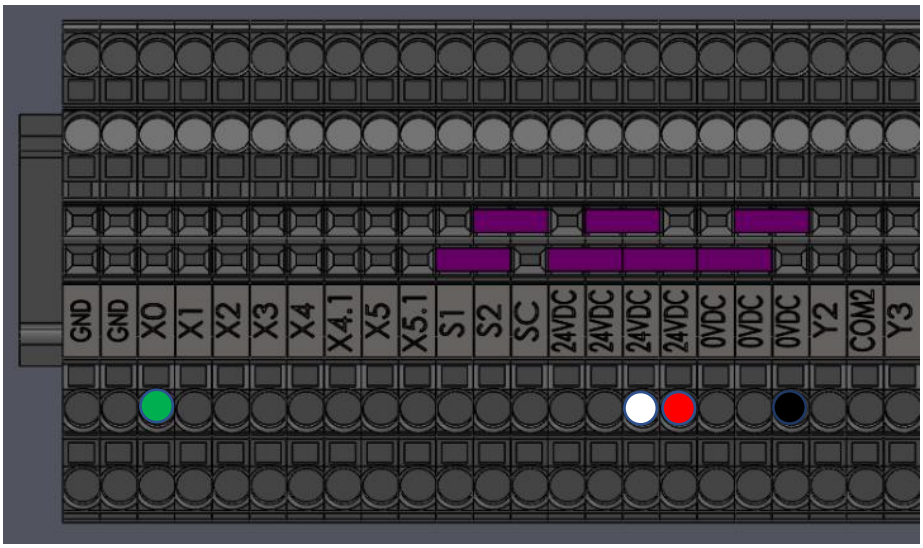
X1 – WHITE from N/O Close Button

X5.1 – RED from N/C Stop Button

24VDC – Green from N/O side of PBs on open and close buttons

Remove Orange wire from bottom of X5.1 and place in wire nut with yellow from PBS

2) MOTION DETECTOR (FALCON XL)



DO NOT REMOVE ANY FACTORY JUMPERS IN ACCORDANCE WITH THIS UNIT

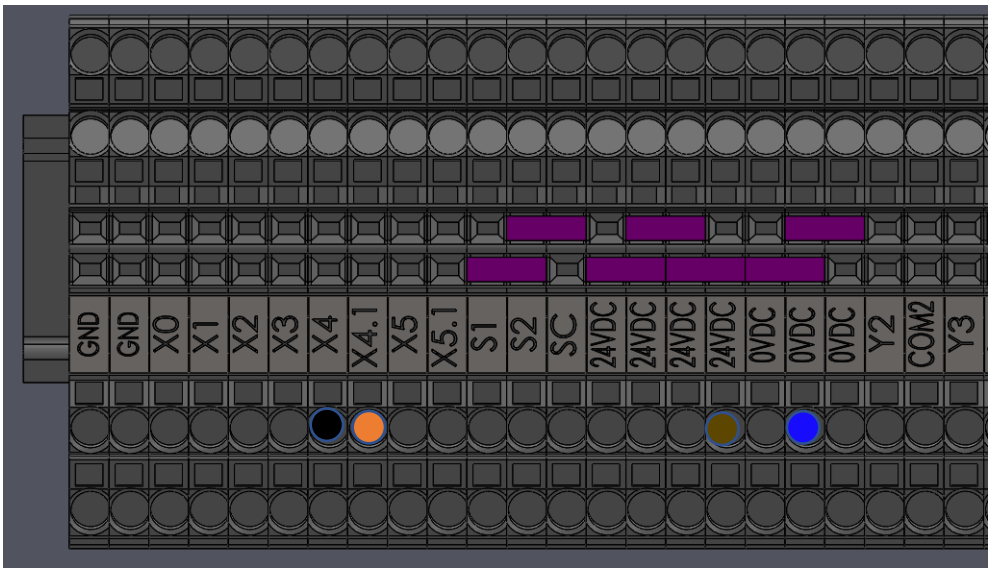
X0 – GREEN from Motion Detector

24VDC – WHITE from Motion Detector **YELLOW WIRE NOT USED**

24VDC – RED from Motion Detector

0VDC – BLACK from Motion Detector

3) PHOTO EYE, RETRO-REFLECTIVE



REMOVE FACTORY (X4 TO X4.1) JUMPER TO INSTALL SAFETY DEVICE

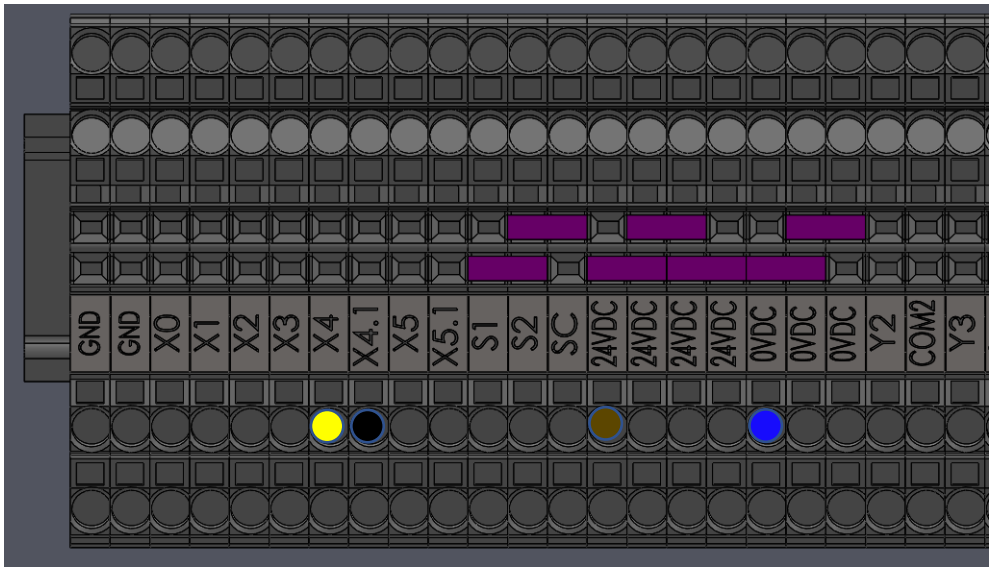
24 VDC – BROWN

0VDC – BLUE **WHITE WIRE NOT USED**

X4 – BLACK → EMITTER UNIT MUST BE IN 'DK' MODE

X4.1 – ORANGE

4) PHOTO EYE, THRU BEAM (BANNER)



REMOVE FACTORY (X4 TO X4.1) JUMPER TO INSTALL SAFETY DEVICE

Receiver

24 VDC – BROWN

0VDC – BLUE

X4 – YELLOW

X4.1 – BLACK

NOT USED – WHITE

Transmitter

24 VDC – BROWN

0 VDC – BLUE

NOT USED – WHITE

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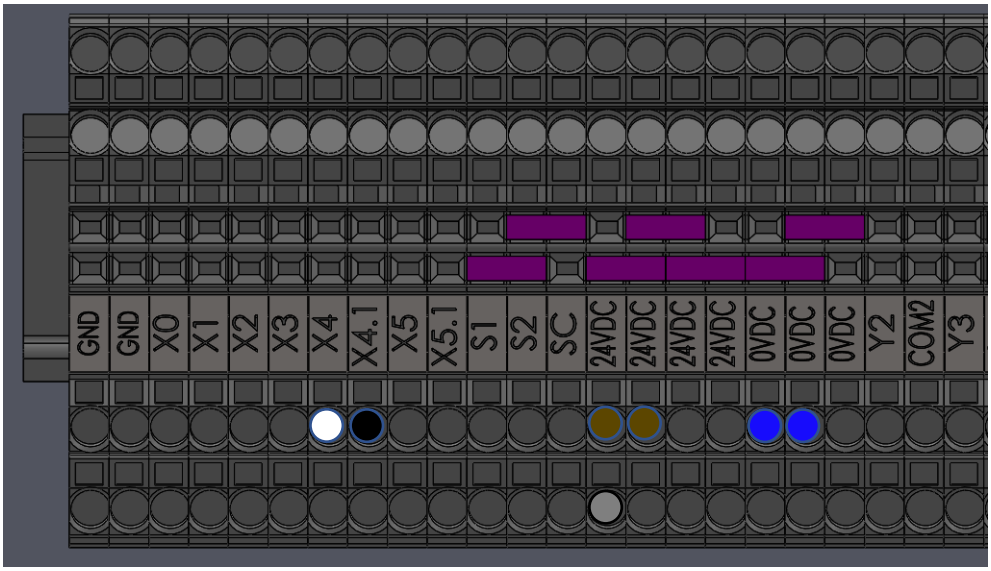
5) PHOTO EYE, THRU BEAM (TELCO)



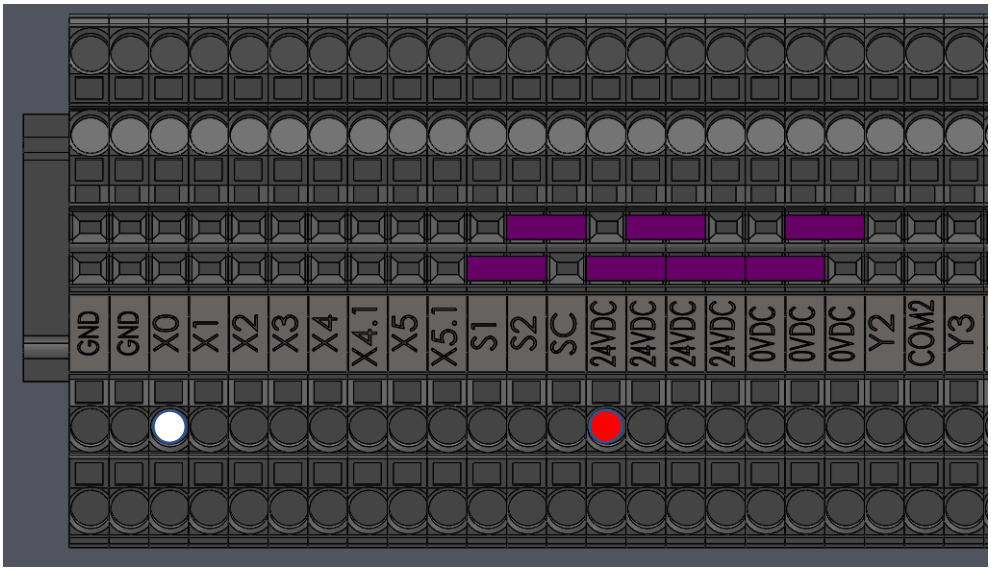
REMOVE FACTORY (X4 TO X4.1) JUMPER TO INSTALL SAFETY DEVICE

Receiver
24 VDC – BROWN
24 VDC – GRAY
0VDC – BLUE
X4 – WHITE
X4.1 – BLACK

Same 24 VDC Terminal (if possible)

Transmitter
24 VDC – BROWN
NOT USED – GRAY
0 VDC – BLUE
NOT USED – WHITE
NOT USED – BLACK

6) CEILING PULL CORD



DO NOT REMOVE ANY FACTORY JUMPERS IN ACCORDANCE WITH THIS UNIT

24 VDC – RED
X0 – WHITE
TURN POTENTIOMETER 'VR2' FULLY CLOCKWISE TO ACTIVATE SEQUENCE MODE
(SEE 'MODE OPERATION' ON NEXT PAGE FOR LOCATION OF VR2)

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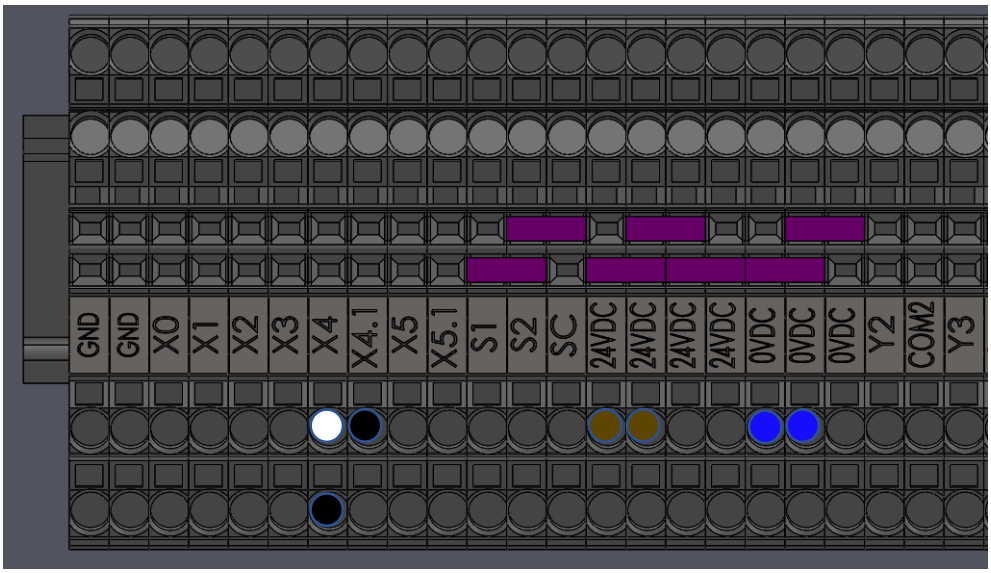
7) LIGHT CURTAIN (TELCO)



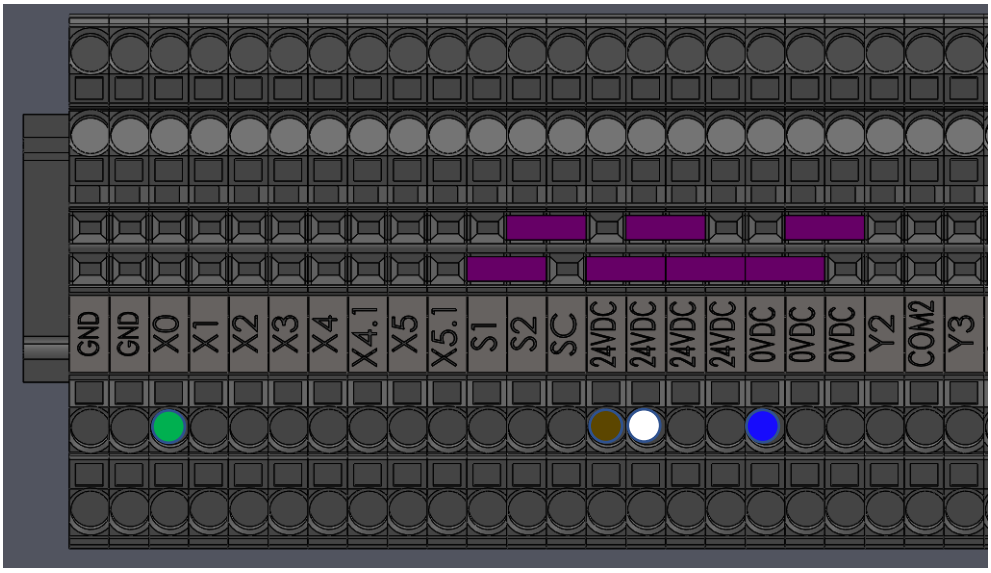
REMOVE FACTORY (X4 TO X4.1) JUMPER TO INSTALL SAFETY DEVICE

Receiver
24 VDC – BROWN
0 VDC – BLUE
X4 – WHITE
X4 – BLACK
X4.1 – BLACK

Blacks are interchangeable

Transmitter
24 VDC – BROWN
0 VDC – BLUE
NOT USED – BLACK

8) RF RECEIVER (BR2-900)



DO NOT REMOVE ANY FACTORY JUMPERS IN ACCORDANCE WITH THIS UNIT

24 VDC – BROWN
0 VDC – BLUE
X0 – GREEN
24 VDC - WHITE

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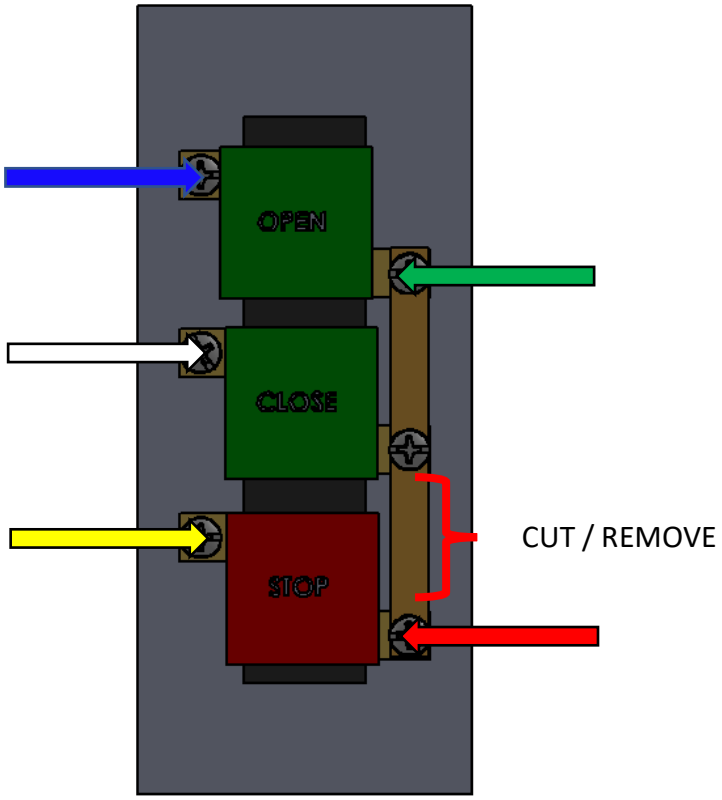
9) NEMA-1 (3) BUTTON STATION: Secondary PBS

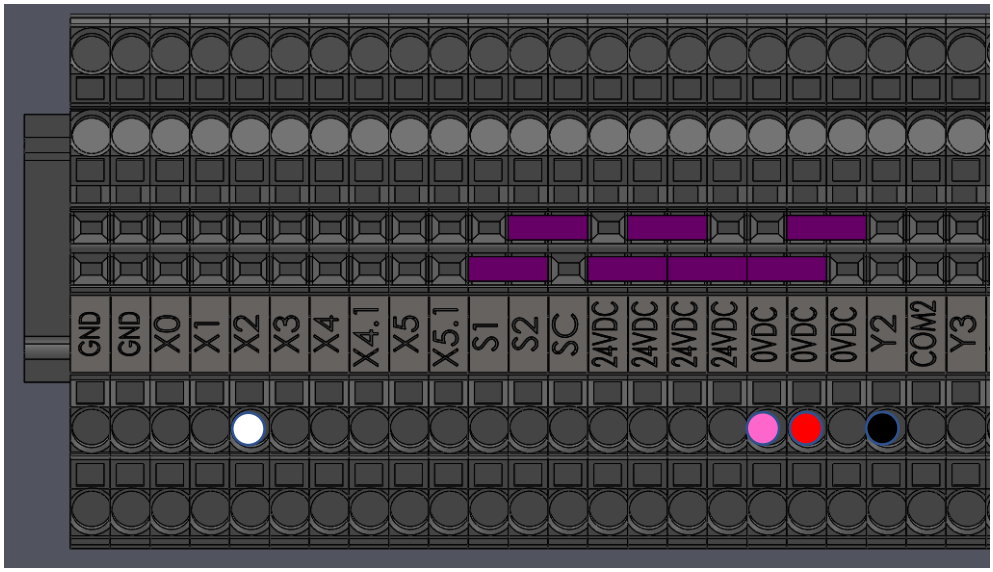
- For a secondary PBS, see figure below
- The stop button must be in series, while the open and close buttons must be in parallel
- Cut the bonding strip between the Close and Stop button terminals
- Connect the Blue and White Wires to the open and close buttons respectively
- The Yellow (stop return) wire goes to the left screw on the stop button
- The Red wire goes to the right screw on the stop button



Wiring a Secondary NEMA-1 PBS

- The blue (open) wire connects to the same terminal as the blue wire from the primary control station (X0)
- The white (close) wire will connect to X1
- The green wire (common) connects to 24VDC
- **To connect the Stop buttons in series, disconnect the orange wire from the bottom of X5.1. Use a wire nut to fasten it to the yellow wire of the station that you are adding (5-conductor bundle). Connect the red wire for the new station to stop terminal (X5). Your wire landing positions in the control panel should match that of the NEMA-4 push button station wiring on the top of page 8.**

10) BEA UNIVERSAL KEYPAD



WHITE – X0

RED – 24VDC

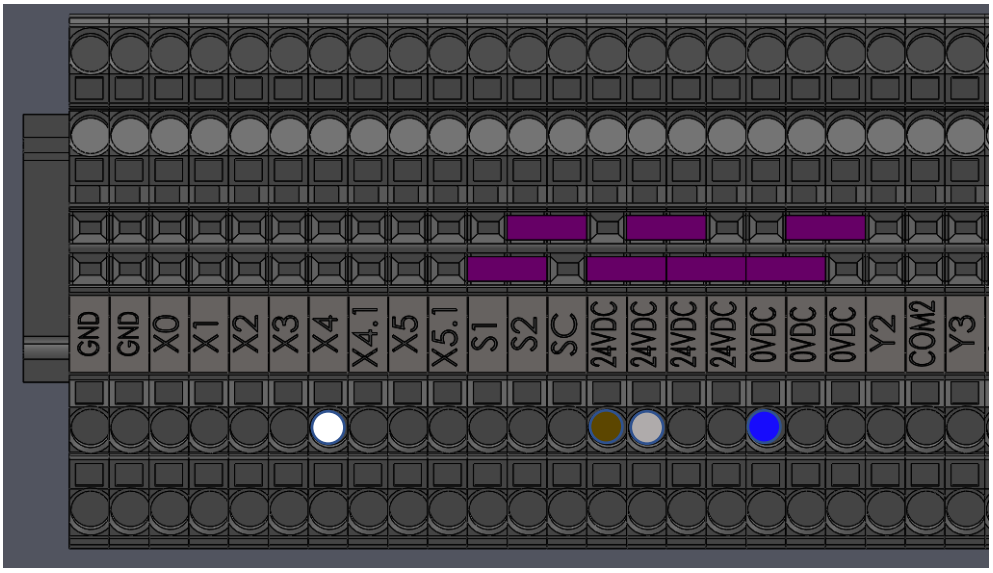
PINK – 24VDC

BLACK – 0VDC

All remaining wires are not used for basic keypad operation. This wiring configuration allows for setup using an admin code, along with 2 zone codes. The admin code will always grant access, whereas the zone codes can be set up to restrict the timeframe in which the corresponding code will grant access.

For additional mechanical and electrical information, as well as information on programming the universal keypad, please see the User's Guide provided with your keypad.
This manual can also be found on BEA's website:
https://us.beasensors.com/wp/wp-content/uploads/2017/04/75.5892.03-KEYPADS-20171013.pdf

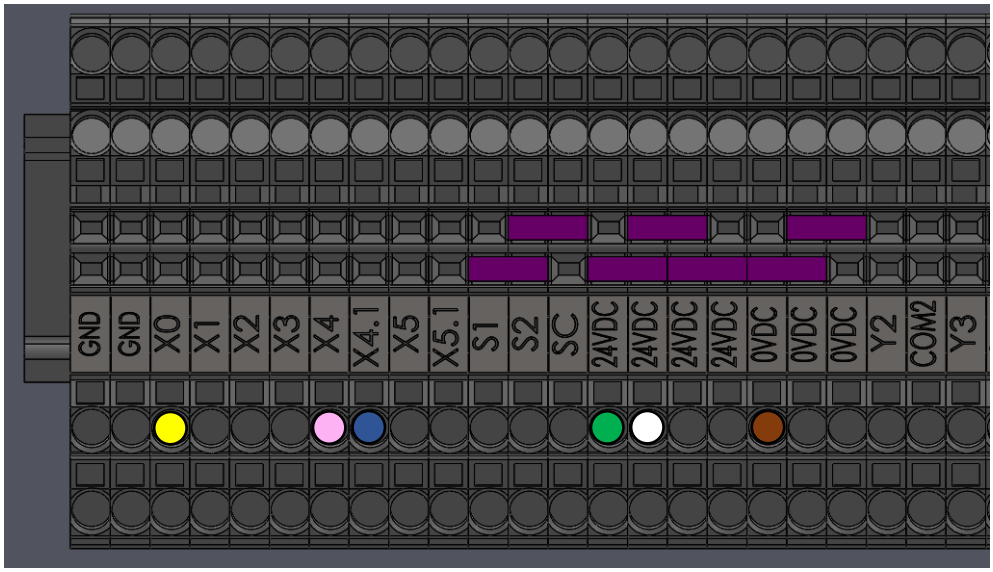
11) Photo-Eye, Retro Reflective, Telco



REMOVE FACTORY (X4 TO X4.1) JUMPER TO INSTALL SAFETY DEVICE

24 VDC – BROWN
0VDC – BLUE
X4 – BLACK → DARK/LIGHT SWITCH MUST BE FULLY COUNTER-CLOCKWISE
X4.1 – WHITE
NOT USED – GRAY

12) OPTEX EXPLORER MOTION & PRESENCE SENSOR



The black and red wires are used not used in Goff's standard wiring applications. Motion and Presence applications do not require auxiliary outputs, and therefore do not require the black and red wires.

IN AN APPLICATION WITH 2 OR MORE SENSORS USED ON THE SAME DOOR:
REMOVE FACTORY (24VDC TO X4.1) JUMPER TO INSTALL SECONDARY DEVICE(S). WIRE SECONDARY OPTEX SENSOR PER BELOW

YELLOW WIRE – X0	GREEN WIRE – 24VDC
PINK WIRE – X4.1	BLUE WIRE – 24VDC
WHITE WIRE – 24VDC	BROWN WIRE – OVDC

For additional mechanical and electrical information, as well as troubleshooting information, please see the User's Guide provided with your device.

This manual can also be found by scanning the QR Code:

Web manual

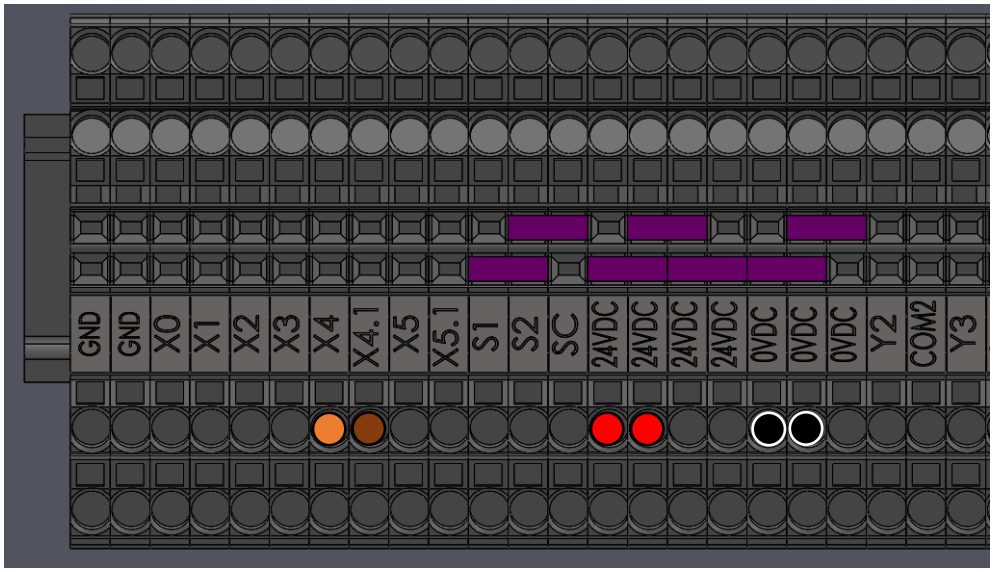
For device setup, adjustments, and additional information, scan the QR code below and download the 'Industrial Door Sensor Setup' app in the app store. This will allow you to setup and adjust your device from your smart phone.

PLEASE NOTE THAT ALL DEVICE SETTINGS ARE CHANGED IN THE APP. NO PARAMETERS, OR SETTINGS CAN BE MANIPULATED ON THE UNIT ITSELF.

Download on the App Store

GET IT ON Google Play

13) MILLER EDGE LIGHT CURTAINS: RLC-K36, RLC-K72



REMOVE FACTORY (X4 TO X4.1) JUMPER TO INSTALL SAFETY DEVICE

TRANSMITTER:

RED – 24VDC

BLACK – 0VDC

RECEIVER:

RED – 24VDC

BLACK – 0VDC

BROWN – X4.1

IN AN APPLICATION WITH 2 OR MORE LIGHT CURTAINS USED ON THE SAME DOOR:
REMOVE FACTORY (24VDC TO X4.1) JUMPER TO INSTALL SECONDARY DEVICE(S)

(1) ORANGE WIRE – X4

RED WIRES – 24VDC

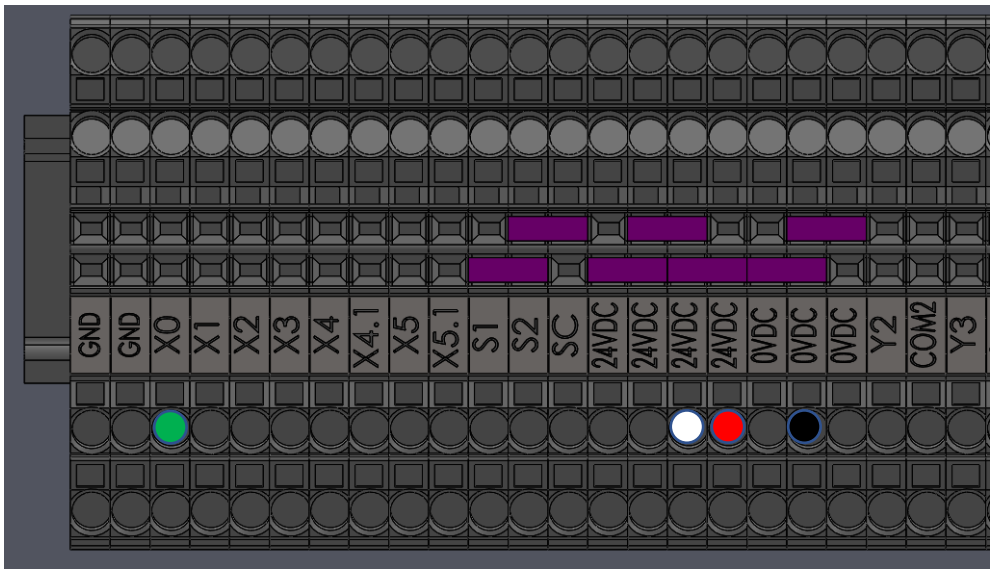
BLACK WIRES – 0VDC

(1) ORANGE WIRE – 24VDC

BROWN WIRES – X4.1

YELLOW WIRES – NOT USED

14) BEA TOUCHLESS ACTIVITATION SWITCH

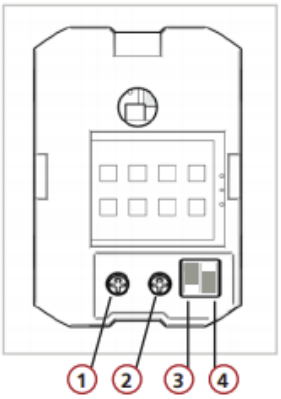


GREEN – X0
WHITE – 24VDC
RED – 24VDC
BLACK – 0VDC

The yellow wire is used only in Normally Closed (NC) wiring applications. The Goff's standard is Normally Open (NO) wiring for all activation devices, and therefore does not utilize the yellow wire.

PLEASE NOTE THAT FOR THIS INSTALLATION, GOFF'S DOES NOT SUPPLY AN ELECTRICAL BOX. THE DEVICE HOWEVER, COMES WITH COVER PLATES THAT WILL FIT SINGLE AND DOUBLE GANG BOXES. (See the following image for device setup and adjustments.)

Four adjustments can be made to the sensor:



1. Sensitivity potentiometer: adjust detection field from 4 to 24 inches (rotate clockwise to increase) factory default: 4 inches (fully CCW)
2. Hold time potentiometer: adjust relay hold time from 0.5 to 30 seconds (rotate clockwise to increase) factory default: 0.5 sec (fully CCW)
3. Output Mode switch: determines Toggle mode or Timer mode
   - Toggle (switch up) = detection activates the relay and the relay holds until a second detection deactivates the relay (recommended for switch applications)
   - Timer (switch down, factory default) = detection activates the relay for 0.5 to 30 seconds; relay will hold as long as detection occurs
4. LED mode switch: determines if LED illuminates when in detection or when not in detection
   - switch up (factory default) = LED on when sensor is NOT in detection, LED off when in detection
   - switch down = LED on when sensor is is in detection, LED off when not in detection

This manual can also be found on BEA's website:
https://us.beasensors.com/wp/wp-content/uploads/2020/06/75.5985.01.EN-MS31-20200630.pdf

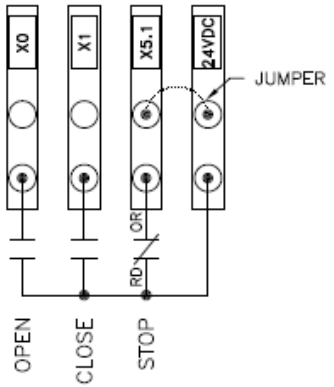
WIRELESS REMOTE(S): PROGRAMMING

- ***TURN POTENTIOMETER 'VR2' FULLY CLOCKWISE TO ACTIVATE SEQUENCE MODE***
    - (SEE 'MODE OPERATION' ON LAST PAGE FOR LOCATION OF VR2)
- ***NOTE: One receiver will accept up to 75 remotes***
- Single button remotes are available with hard-wired receivers
- To sync remote(s) to an RF Receiver:
    - Press and release the Receiver's **LEARN** labeled 'SECURE'
        - A red LED will illuminate on the receiver
    - Press the button on the remote twice
        - A white and blue LED will illuminate on the receiver

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.

EXTERNAL UP/DN/STOP CONNECTIONS

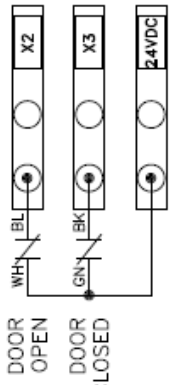


IN NORMAL MODE (3 BUTTON):
IF ADDITIONAL CONTROLS ARE NEEDED, MAKE SURE TO CONNECT A (NO) CONTACT IN PARALLEL WITH THE "OPEN" AND "CLOSE" INPUTS AND A (NC) CONTACT IN SERIES WITH THE "STOP" INPUT. REMOVE THE JUMPER TO ENABLE THE STOP COMMAND.

IN SEQUENTIAL MODE (1 BUTTON):
IF ADDITIONAL CONTROLS ARE NEEDED. CONNECT A (NO) CONTACT IN PARALLEL WITH THE "OPEN" CONTACT.

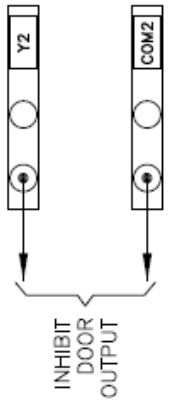
NOTE: INPUT X1 (CLOSE) AND X5 (STOP) ARE STILL ACTIVE AND WORK NORMALLY IN SEQUENTIAL MODE.

LIMIT SWITCH CONNECTIONS



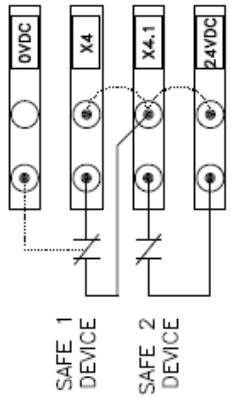
CONNECT LIMIT SWITCHES AS SHOWN. (NC) CONTACTS

INHIBIT EXT. DOOR CONNECTIONS



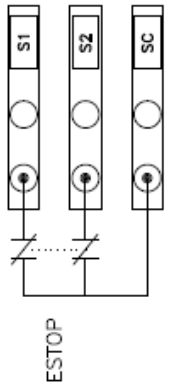
CONNECT RELAY OUTPUT IN SERIES WITH SECONDARY DOOR STOP INPUT. OUTPUT IS ON WHEN DOOR IS IDLE, OUTPUT TURNS OFF WHEN DOOR IS ACTIVE.

SAFE DEVICE CONNECTIONS

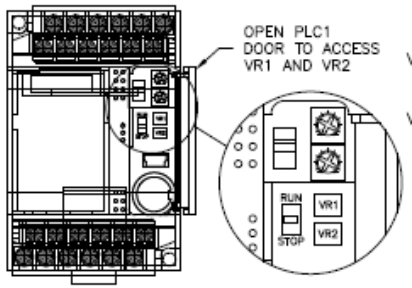


REMOVE JUMPER AND CONNECT SAFE SWITCHES/SENSORS AS SHOWN. (NC) CONTACTS SHOULD BE USED IN SERIES. 3-WIRE SENSORS MAY ALSO BE USED.

SAFETY STOP CONNECTIONS



CONNECT ESTOP SWITCH AS SHOWN. REDUNDANT (NC) CONTACTS SHOULD BE USED. IF ADDITIONAL ESTOPS ARE INSTALLED, WIRE THE CONTACTS IN SERIES.



MODE OPERATION

VR1–(SEE DIAGRAM) CONTROLS THE AMOUNT OF DELAY BEFORE DOOR WILL AUTOMATICALLY CLOSE. ROTATED FULLY CCW IS 0s (DEFAULT). FULLY CW IS 60s. AUTO CLOSE WORKS ONLY IF DOOR IS FULLY OPEN.

VR2–(SEE DIAGRAM) CONTROLS THE MODE OF OPERATION. IF POTENTIOMETER IS ROTATED FULLY CCW, THE DOOR WILL OPERATE IN NORMAL MODE (3 BUTTON–UP/STOP/DN). THIS IS THE FACTORY DEFAULT. IF THE POTENTIOMETER IS ROTATED FULLY CW, THE DOOR WILL OPERATE IN SEQUENTIAL MODE (1 BUTTON). ACTUATING START INPUT (X0) WILL START DOOR OPENING, 2ND ACTUATION BEFORE DOOR IS FULLY OPEN, WILL STOP THE DOOR, 3RD ACTUATION WILL CLOSE THE DOOR AND THE 4TH WILL AGAIN STOP THE DOOR. THIS SEQUENCE WILL REPEAT STARTING WITH THE 1ST ACTUATION ABOVE.

ACCESSORY INSTALLATION

Door Types: G2, Wash Guard, Harsh Guard

- Telco Through Beam Photo-Eyes
- Telco Light Curtains

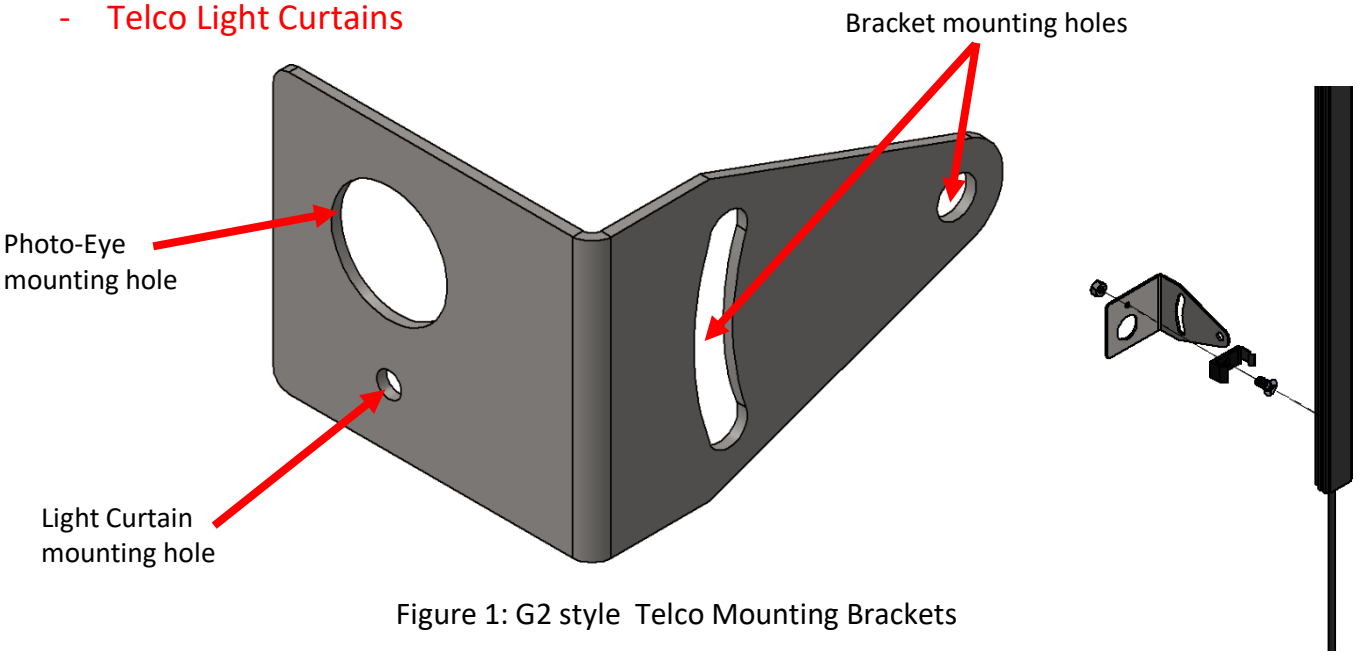


Figure 1: G2 style Telco Mounting Brackets

  - Using the provided self-tapping fasteners, secure the provided brackets to the face of the aluminum verticals using the small hole AND the arced slot.
    - This allows eye alignment adjustments.
  - Drill and tap proper holes for your fasteners in the vertical track
  - Make sure to drill the holes at the same height on both verticals so that the eyes are in-line with each other.
- If using through-beam photo-eyes, fix the eyes into the larger holes on each bracket by using their built-in fastening washers
-
- If using light curtains, attach the small adapter U-bracket that came with the light curtains to the small 'light curtain mounting hole' and snap the light curtain in so that the units face each other (the LEDs should face each other).

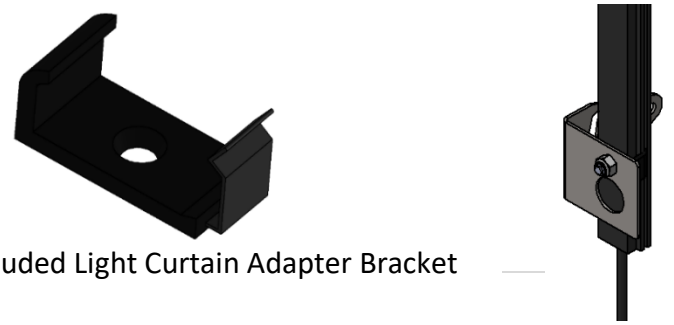


Figure 2: Included Light Curtain Adapter Bracket

- Retroreflective Photo-Eye

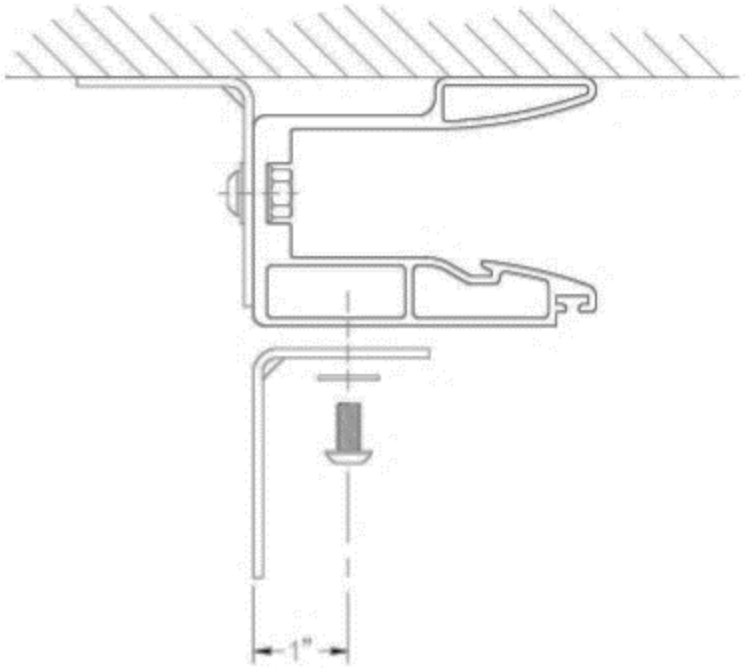


Figure 3: G2 Style Reflective Photo Eye Reflector Bracket Mounting

- Using the provided self-tapping fasteners, secure the provided brackets to the face of the aluminum verticals as shown above in Figure 7.
- Attach the photo-eye reflector to the J-bracket using the supplied hardware. Your installation should resemble the following photo (Figure 8).

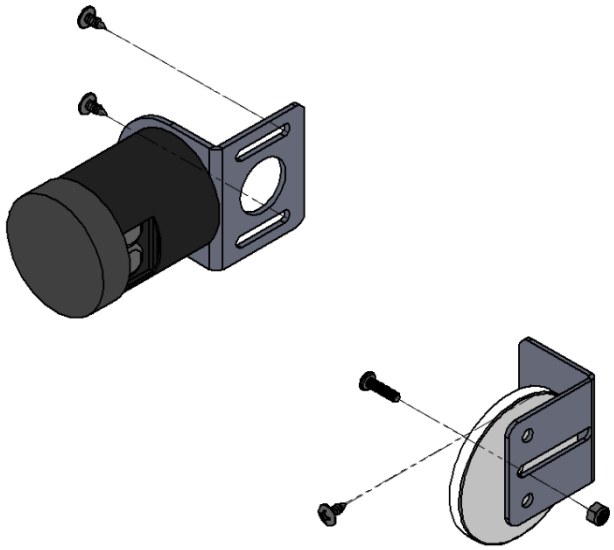


Figure 4: G2 Style Reflector Bracket Mounting

- attach the emitter unit bracket to the opposite Vertical Extrusion.
    - Make sure to set the height of the bracket to match that of the reflector.
- transfer the slot locations to the Vertical Extrusion and drill two .28” diameter holes for the fasteners.
    - Make sure the holes go through the center of the internal slot (1.375” from the front surface).
- Secure the bracket to the Vertical using the supplied ¼-20 x .50 Pan Head Screws, ¼” Flat Washers, and a ¼-20 Serrated Nuts.
- Assemble the head unit and protective cover to the bracket using the supplied hardware. Make sure that the head unit is aligned with the reflector.
- See Figure 8

Figure 5: G2 Style Emitter Unit Mounting

Door Types: G1, Model 2000, Clean Guard, Fall Guard:

- Telco Through Beam Photo-Eyes
- Telco Light Curtains

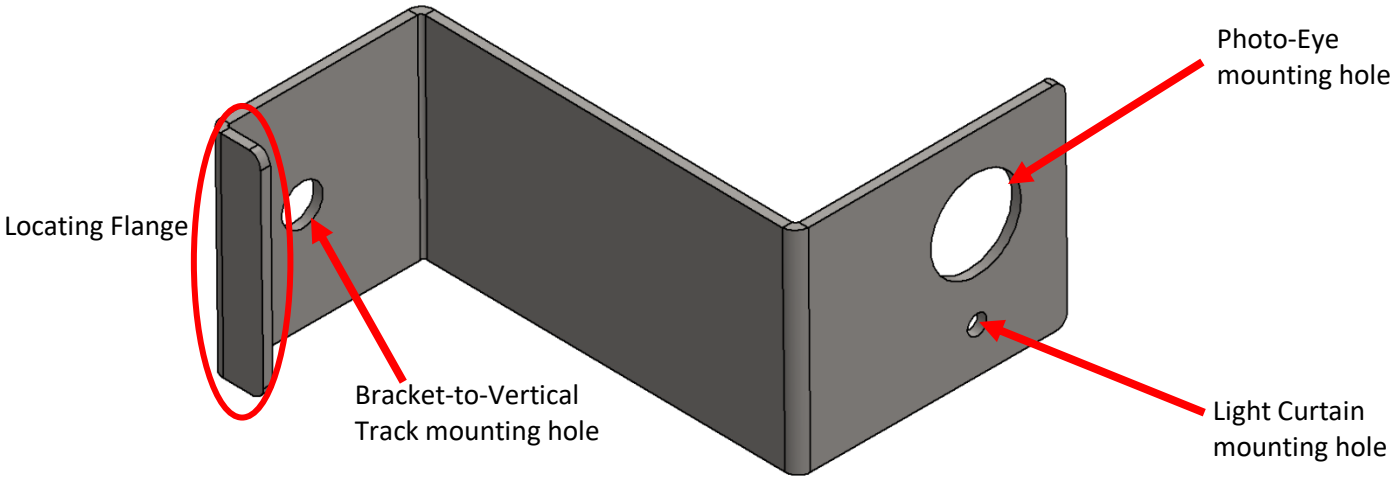
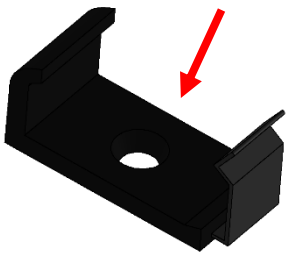


Figure 6: Telco Mounting Bracket

  - Using the provided ¼-20 fasteners (screws and serrated flange nuts), secure the provided brackets to the plastic verticals using the single small hole.
    - Insert the ¼-20 screws from inside of the vertical track
  - The locating flange should seat in the channel on the narrow face of the vertical, lining the mounting hole up with the ideal drilling location.
  - Make sure to drill the holes at the same height on both verticals so that the eyes are in-line with each other.
- If using through-beam photo-eyes, fix the eyes into the larger holes on each bracket by using their built-in fastening system.
- If using light curtains, attach the small U-bracket (provided) to the small 'light curtain mounting hole' and snap the light curtain in so that the units face each other (LED lights are on the face of the unit).
  - See Figures 1 and 2



- Retroreflective Photo-Eye

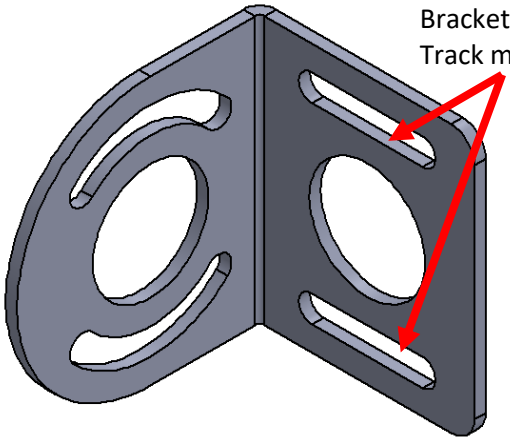


Figure 7: Retroreflective Photo Eye - Emitter Mount Bracket

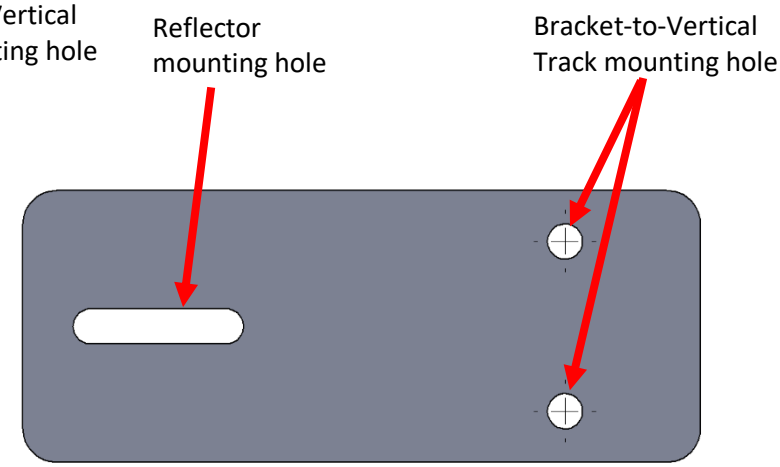


Figure 8: Retroreflective Photo Eye - Reflector Mounting Bracket

- Using the provided ¼-20 fasteners (screws and serrated flange nuts), secure the emitter bracket to the vertical using the straight slotted holes.
  - To ensure proper alignment and straightness, butt the edge of the brackets up against the wall when marking holes.
- Mount the Reflector bracket to the vertical track in the same fashion, using the small holes in the reflector bracket.
- Make sure the emitter is mounted at the same height as the reflector so that they are in-line with each other.

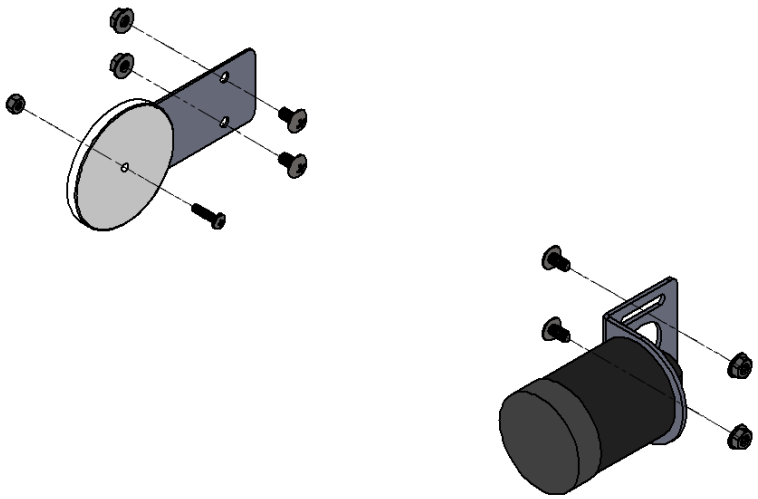


Figure 9: Retroreflective Photo Eye Assembly (Verticals Not Shown)