

# PHOTO EYES

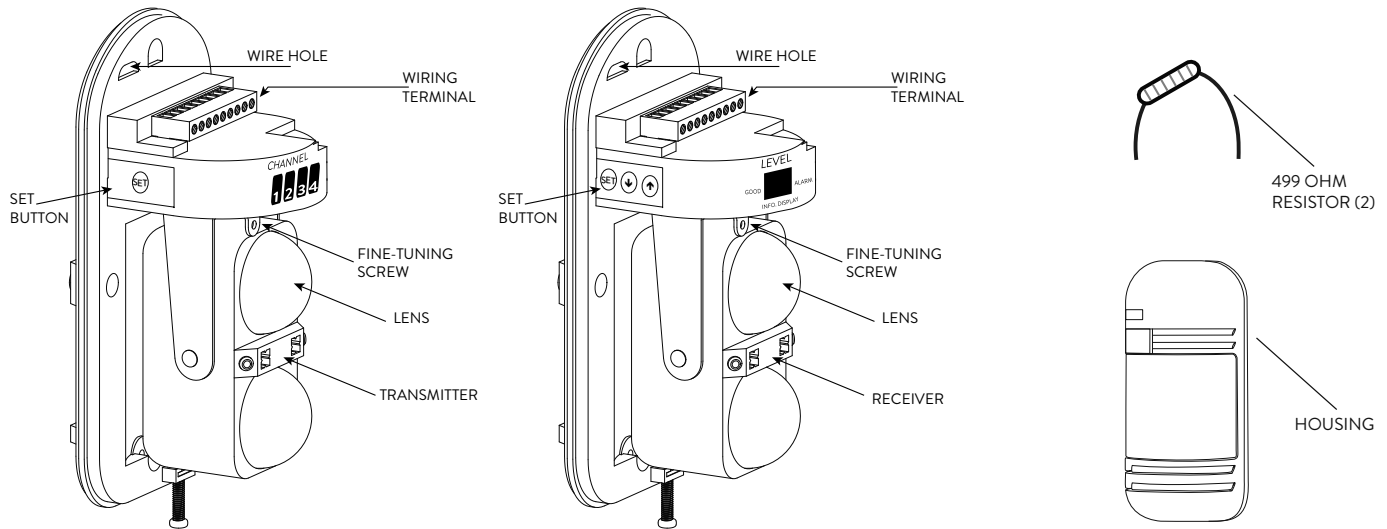
## MONITORED PHOTO EYE INSTRUCTIONS

### NOT TO BE USED WITH SOLAR APPLICATIONS.


#### NOTE

When photo beams (eyes) are blocked while the gate(s) are in motion the gate(s) will reverse to full open or the fully closed position. This is conditional based on how you connect them. If the beams are blocked when the gate(s) are at full open or full close this will cause the gates to remain in that position, depending on how they are connected.

#### Diagram of photo eyes:

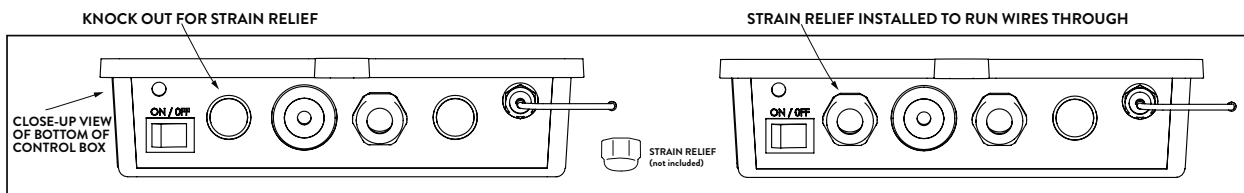


#### MONITORED PHOTO EYE INSTALLATION.

- A: The gate system will check for the presence of photobeams before the gate can open or close. Therefore, a disconnected photo eye will cause the gate system to be non-functional and remain at open or close.
- B: Make sure the Main Control Board DIP switch #3 S-FORCE (Monitored Safety) is turned ON  

- C: Requires a minimum of 2 pairs of beams for a single gate and 3 pairs of beams for a dual gate.
- D: One (1) of the 499 Ohm resistors (per pair) will be used for this type of installation.
- E: The included 499 Ohm resistor **WILL** be used for this type of installation.

#### PREPARING CONTROL BOX FOR STANDARD OR MONITORED PHOTO EYE WIRING

- MAKE SURE THE POWER IS TURNED OFF AND BATTERY IS DISCONNECTED TO THE CONTROL BOX BEFORE WIRING

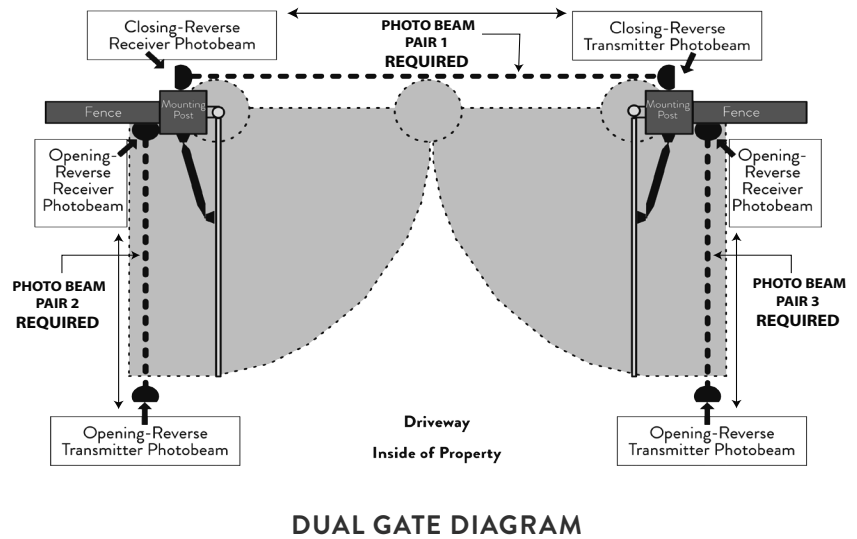
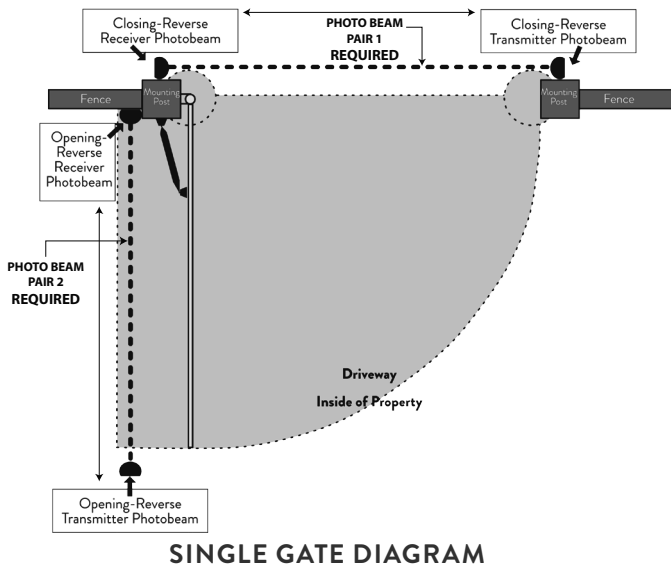


- On the bottom of the control box there is a built in knock out for wires. Knock out hole and install a strain relief (not included). This is where your wires will feed up into the control box and connect to the control board.

#### WARNING

Extreme caution must be exercised when automatic gate opener system is in operation, regardless of which safety systems are installed and in use.

## MONITORED PHOTO EYES OVERVIEW DIAGRAM FOR SINGLE AND DUAL GATES



### PAIR 1 PHOTO EYE INSTALLATION (REQUIRED): “CLOSING-REVERSE” (DIAGRAM PAGE 3)

“Closing-Reverse” means that if the gate starts to close and if the beam gets blocked the gate will reverse to the full open position or if the beam is already blocked on an open gate, the gate will remain open.

### INSTALLING SET ONE (1) PHOTO EYE: (YOU WILL NEED 20-22 AWG GAUGE STRANDED WIRE)

- ① On control board DIP SWITCH “S. FORCE / MON SFTY MODE” needs to be turned ON (flip switch to the right). **If you do not do this step your photo eye installation WILL NOT WORK.** S.FORCE ☒ MON. SFTY MODE
- ② Photo Eye **RECEIVER** needs to be installed on the **Control Box** side of the gate opener.
- ③ The **TRANSMITTER** needs to be installed facing and across from the **RECEIVER**. You will also need to dig a trench for the two (2) **TRANSMITTER** wires to go across and connect the **TRANSMITTER** TO THE **RECEIVER**.
- ④ You will now connect the **RECEIVER** wires to the control box.
- ⑤ **ADD A JUMPER WIRE TO THE RECEIVER TERMINALS 2 & 5.**
- ⑥ **ADD ONE OF THE TWO INCLUDED 499 OHM RESISTORS TO RECEIVER TERMINALS 4 & 5.**

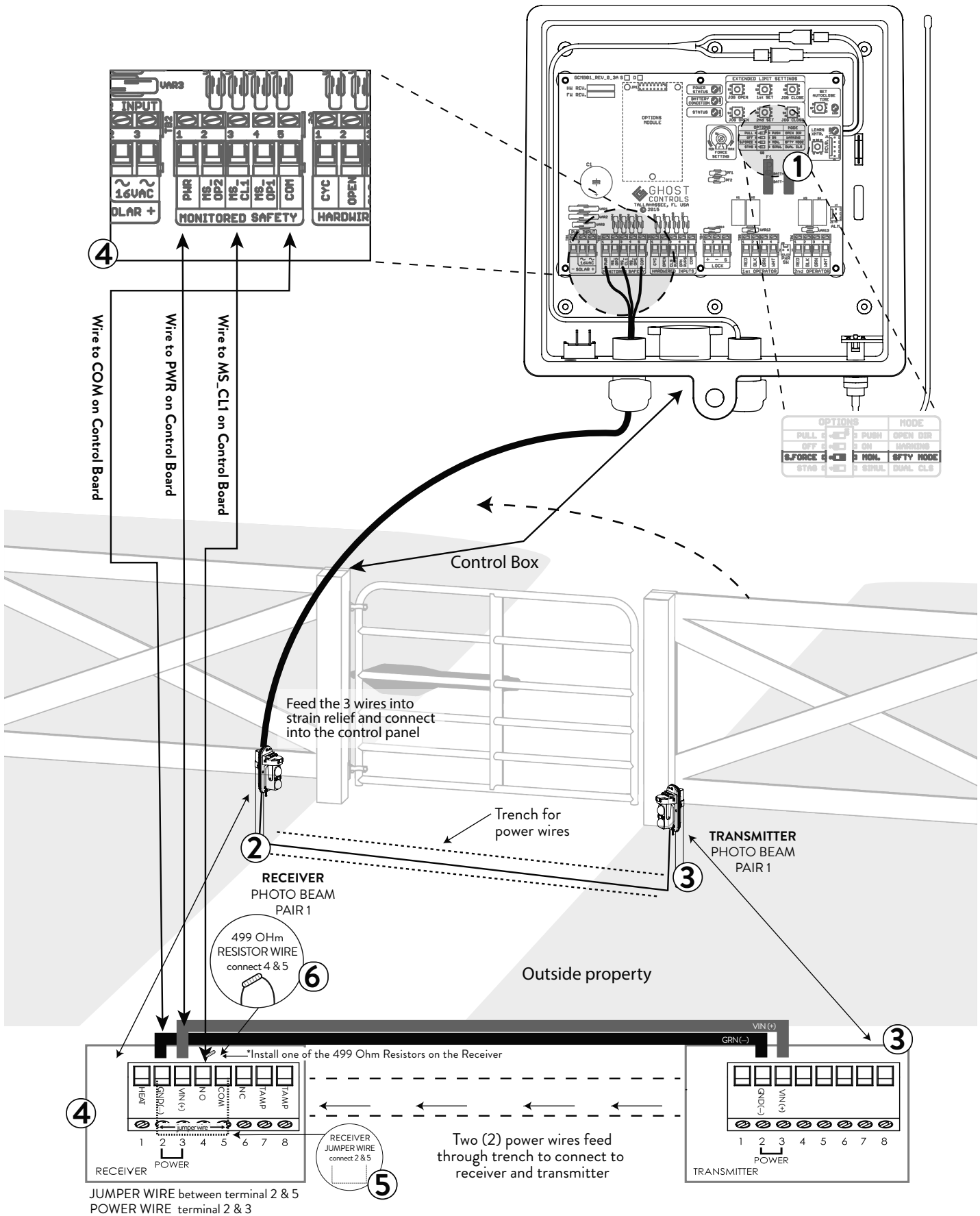
### CONNECTING PAIR ONE PHOTO EYES FOR CLOSING-REVERSE (REQUIRED)

Transmitter	Receiver	Ghost Control Board*
3	3	PWR on the Monitored Safety Inputs
2	2	COM on the Monitored Safety Inputs
N/A	5	COM on the Monitored Safety Inputs
N/A	4	MS-CL1 on the Monitored Safety Inputs

**WARNING**  
Extreme caution must be exercised when automatic gate opener system is in operation, regardless of which safety systems are installed and in use.

# MONITORED "CLOSING - REVERSE" CONNECTION DIAGRAM - PAIR 1.


■ REMOVE PHOTO BEAM COVERS AND FOLLOW WIRING DIAGRAM BELOW.



**PAIR 2 PHOTO EYE INSTALLATION (REQUIRED): “OPENING-REVERSE”  
(DIAGRAM PAGE 5)**

“Opening-Reverse” means that if the gate starts to open and if the beam gets blocked the gate will reverse to the closed position or if the beam is already blocked while the gate(s) are closed they will not open.


**INSTALLING SET TWO (2) PHOTO EYES: (YOU WILL NEED 20-22 AWG GAUGE STRANDED WIRE)**

- ① Make sure the DIP SWITCH “S. FORCE / MON SFTY MODE” is turned ON (flip switch to the right). **If you do not do this step your photo eye installation WILL NOT WORK.** 
- ② PHOTO EYE RECEIVER NEEDS TO BE INSTALLED ON THE CONTROL BOX SIDE OF THE GATE OPENER.
- ③ The TRANSMITTER needs to be installed facing and across from the RECEIVER. You will also need to dig a trench for the two (2) TRANSMITTER wires and connect the TRANSMITTER TO THE RECEIVER.
- ④ You will now connect the RECEIVER wires to the control box.
- ⑤ ADD THE JUMPER WIRE TO THE RECEIVER TERMINALS 2 & 5.
- ⑥ ADD ONE OF THE TWO INCLUDED 499 OHM RESISTORS TO RECEIVER TERMINALS 4 & 5.

Once you have completed making your pair two connections and you’re not adding a third pair (dual gates only) proceed to “Setting the Frequency and Beam Alignment” on page 8.

**CONNECTING PAIR TWO PHOTO EYE WIRES FOR OPENING-REVERSE (REQUIRED)  
DIAGRAM PAGE 5.**

Transmitter	Receiver	Ghost Control Board
3	3	PWR on the Monitored Safety Inputs
2	2	COM on the Monitored Safety Inputs
N/A	5	COM on the Monitored Safety Inputs
N/A	4	MS-OP1 on the Monitored Safety Inputs

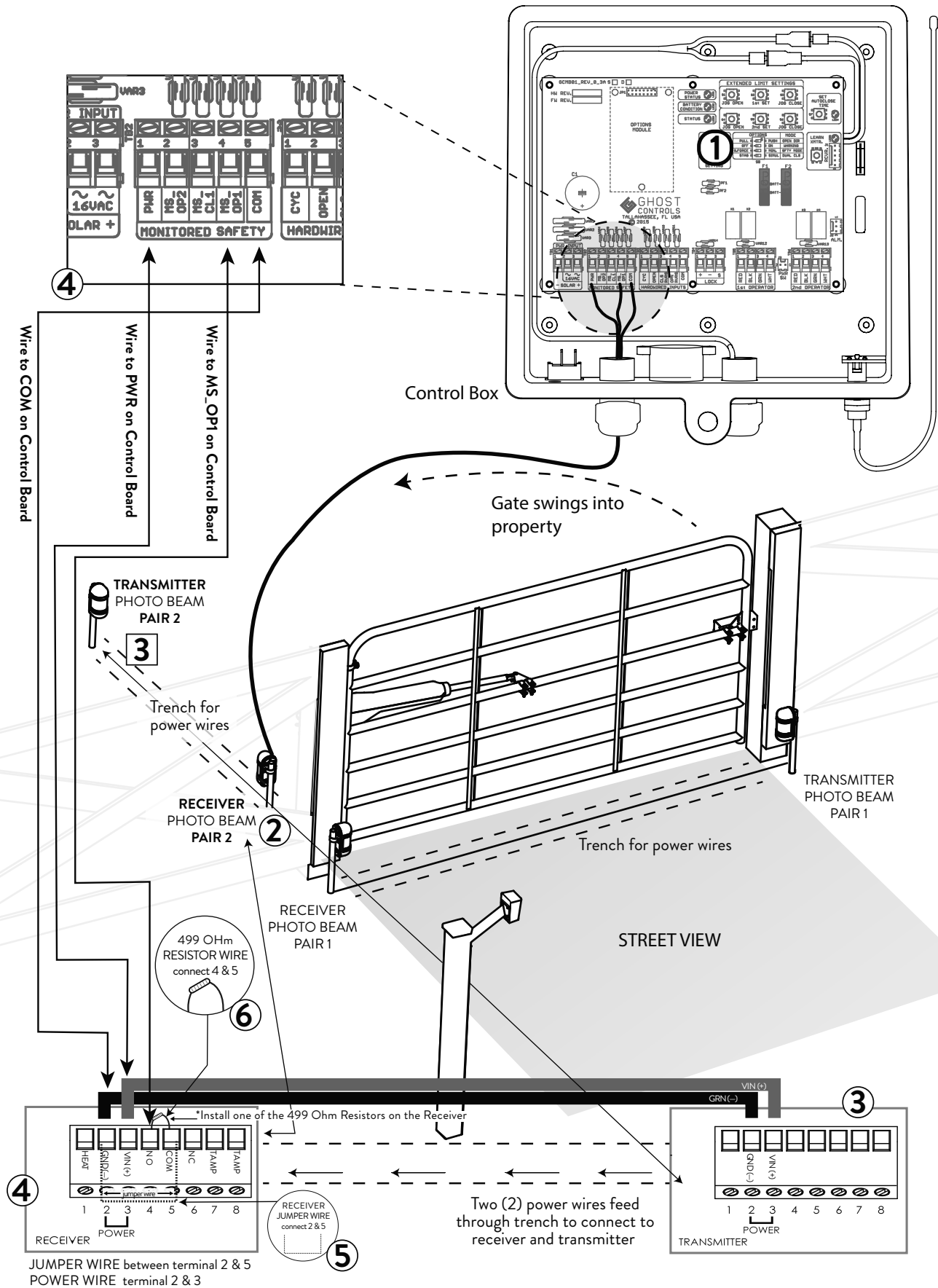


**WARNING**

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# MONITORED "OPENING - REVERSE" CONNECTION DIAGRAM – PAIR 2, REQUIRED

■ REMOVE PHOTO BEAM COVERS AND FOLLOW WIRING DIAGRAM BELOW.



**PAIR 3 FOR DUAL GATE, PHOTO EYE INSTALLATION (REQUIRED): “OPENING REVERSE” (DIAGRAM PAGE 7)**

“Opening-Reverse” means that if the gates start to open and if the beam gets blocked the gates will reverse to the closed position or if the beam is already blocked while the gates are closed they will not open.

**INSTALLING SET THREE (3) PHOTO EYES: (YOU WILL NEED 20-22 AWG GAUGE STRANDED WIRE)**

**STEP 1:** Make sure the DIP SWITCH “S. FORCE / MON SFTY MODE” is turned ON (flip switch to the right). **If you do not do this step your photo eye installation WILL NOT WORK.** 

**STEP 2:** PHOTO EYE RECEIVER NEEDS TO BE INSTALLED CLOSEST TO THE GATE ACROSS FROM THE CONTROL BOX SIDE OF THE GATE OPENER.

**STEP 3:** You will need to use/ dig a trench for the third photo eye receiver wires to connect to to the control panel.

**STEP 4:** The TRANSMITTER needs to be installed facing and across from the RECEIVER. You will also need to dig a trench for the TRANSMITTER wires to connect to the receiver.

**STEP 5:** You will now connect the RECEIVER wires to the control box.

**STEP 6:** ADD THE JUMPER WIRE TO THE RECEIVER TERMINALS 2 & 5.

**STEP 7:** ADD ONE OF THE TWO INCLUDED 499 OHM RESISTORS TO RECEIVER TERMINALS 4 & 5.

Once you have completed the installation of the second and third pair proceed to “Setting the Frequency and Beam Alignment” on page 8.

**CONNECTING PAIR THREE PHOTO EYES FOR “OPENING-REVERSE” (REQUIRED) DIAGRAM PAGE 7.**

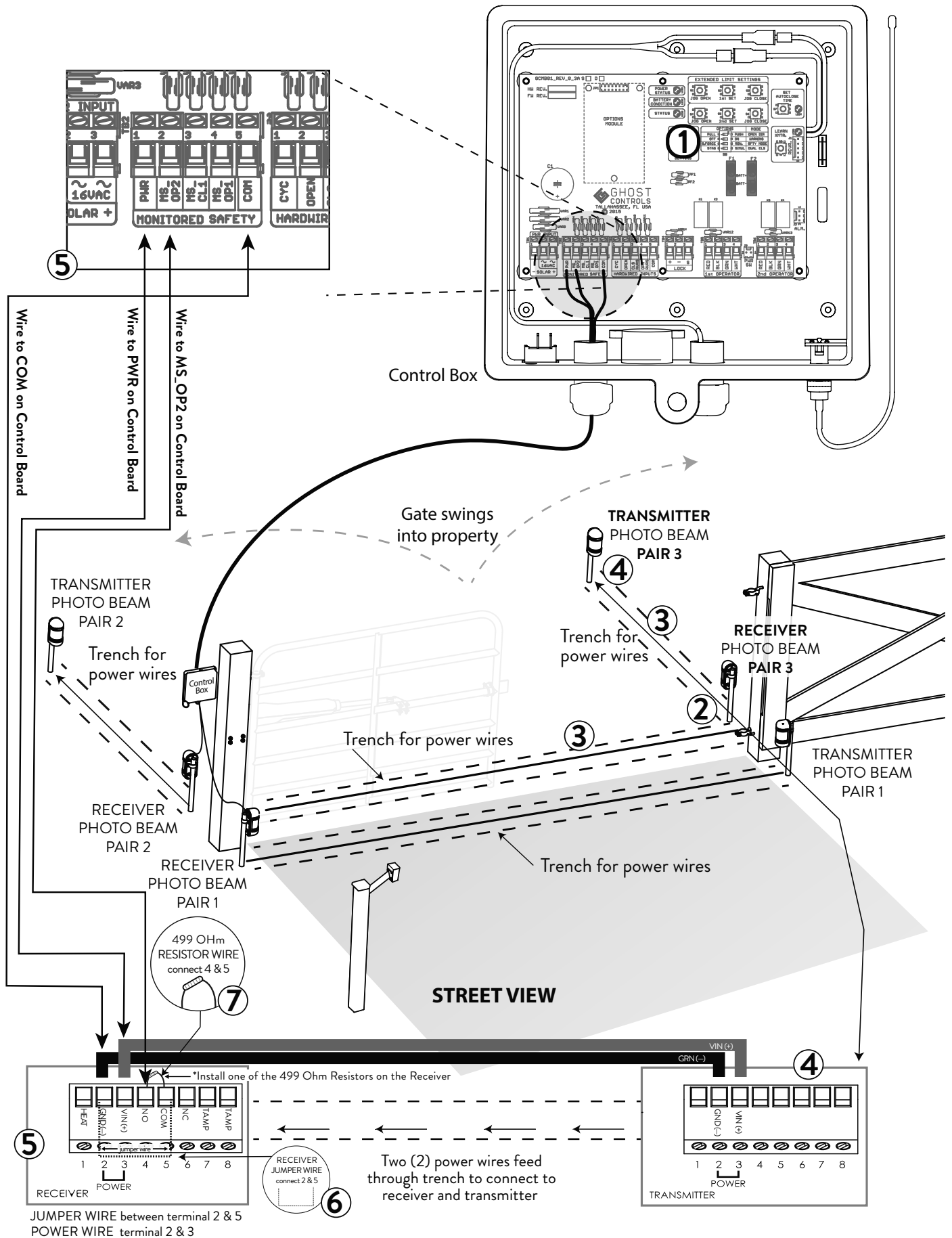
Transmitter	Receiver	Ghost Control Board
3	3	PWR on the Monitored Safety Inputs
2	2	COM on the Monitored Safety Inputs
N/A	5	COM on the Monitored Safety Inputs
N/A	4	MS–OP2 on the Monitored Safety Inputs

WARNING

Extreme caution must be exercised when automatic gate opener system is in operation, regardless of which safety systems are installed and in use.

# MONITORED "OPENING - REVERSE" CONNECTION DIAGRAM - PAIR 3, REQUIRED

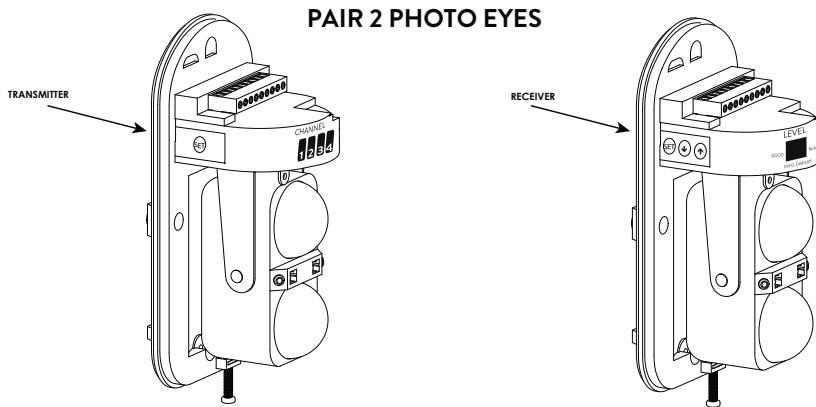
■ REMOVE PHOTO BEAM COVERS AND FOLLOW WIRING DIAGRAM BELOW.



## ■ SETTING UP PHOTO EYE FREQUENCY: SKIP IF YOU ONLY HAVE ONE PAIR.

WHEN USING MORE THAN 1 PAIR OF PHOTO EYES THE FREQUENCY MUST BE CHANGED.

### SETTING UP THE PHOTO EYE FREQUENCY FOR PAIRS 2 AND 3:

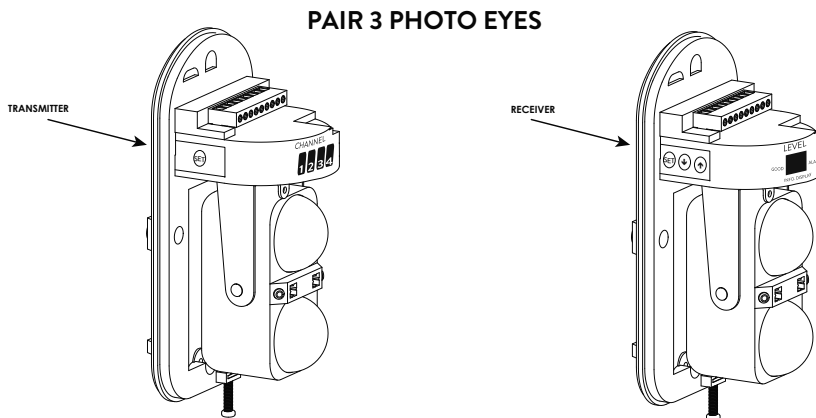


#### 2ND SET OF PHOTO EYES:

STEP 1: On the Transmitter, press and release the SET button until the 2nd channel LED comes on.

STEP 2: On the Receiver, press the SET button for 6 seconds it will beep twice, then release. The display shows the last SET FREQUENCY (F1, F2...etc.) press the UP or DOWN ARROW button until the display shows "F2". Press the SET button again for 6 seconds. You will hear two short beeps, then release.

STEP 3: FREQUENCY ON PHOTO EYES ARE NOW PROGRAMMED



#### 3RD SET OF PHOTO EYES:

STEP 1: On the Transmitter, press and release the SET button until the 1st and 2nd channel LED comes on.

STEP 2: On the Receiver, press the SET button for 6 seconds, then release.. The display shows the last SET FREQUENCY (F1, F2, F3...etc.) press the UP or DOWN ARROW button until the display shows "F3". Then press the SET button again for 6 seconds, then release.

STEP 3: FREQUENCY ON PHOTO EYES ARE NOW PROGRAMMED

## BEAM ALIGNMENT

### ■ WARNING

Extreme caution must be exercised when automatic gate opener system is in operation, regardless of which safety systems are installed and in use.

- GOOD LED (Receiver)
  - ON = Beams aligned
  - OFF = Beams blocked or beams out of alignment
- ALARM LED (Receiver)
  - ON = Beams blocked or beams out of alignment
  - OFF = Beams aligned



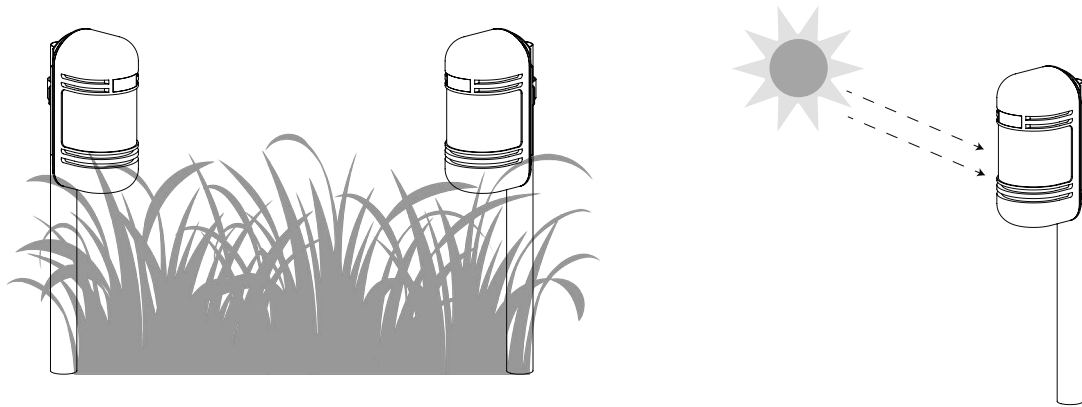
## MOUNTING PRECAUTIONS AND MOUNTING:

### MOUNTING PRECAUTIONS

Never mount your detector where plants, direct sunlight, headlights could obstruct the beam between the transmitter and receiver. **ALSO, MAKE SURE SURFACE IS EVEN AND NOT UNSTABLE.** See diagrams below

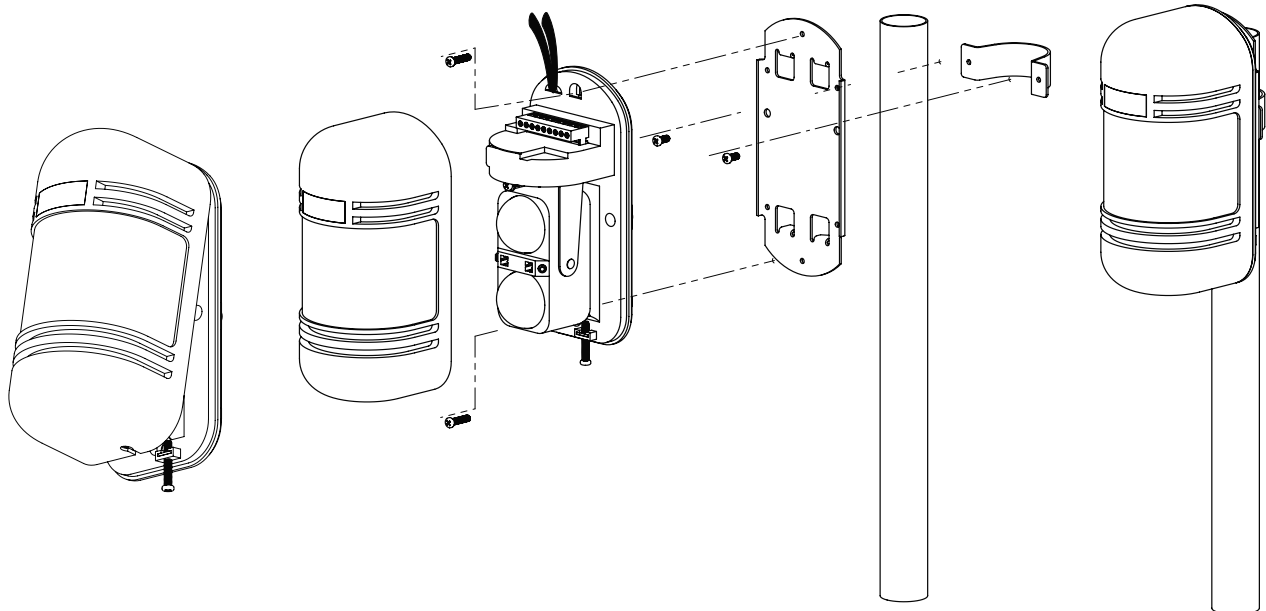
**NEVER OBSTRUCT THE OPTICAL AXIS.** The optical access is both the vertical and horizontal range between the transmitter and receiver.

Never mount your detector where plants, direct sunlight, headlights could obstruct the beam between the transmitter and receiver. Also, make sure surface is even and not unstable. See diagrams below.



### MOUNTING YOUR PHOTO EYES ON A POLE (FOLLOW DIAGRAMS BELOW)

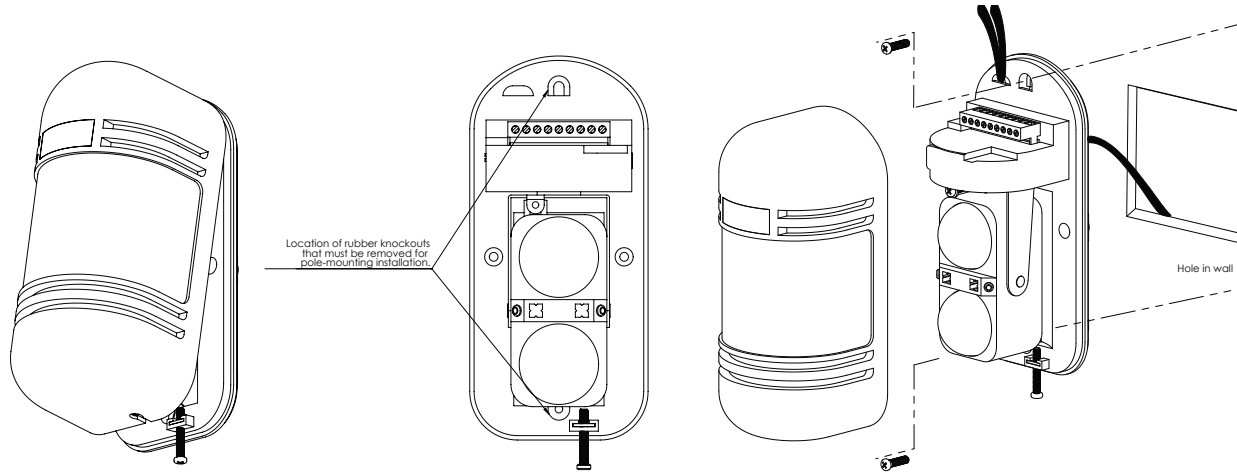
- Loosen screw on underside of Photo Eye and back out approximately 1/4 inch.
- Gently lift the cover from the bottom side and angle slightly outwards (as shown).
- Slide the cover upwards and then forwards to remove the cover from the housing.



## MOUNTING YOUR PHOTO EYES ON A WALL (FOLLOW DIAGRAMS BELOW)

- Loosen screw on underside of Photo Eye and back out approximately 1/4 inch.
- Gently lift the cover from the bottom side and angle slightly outwards (as shown).

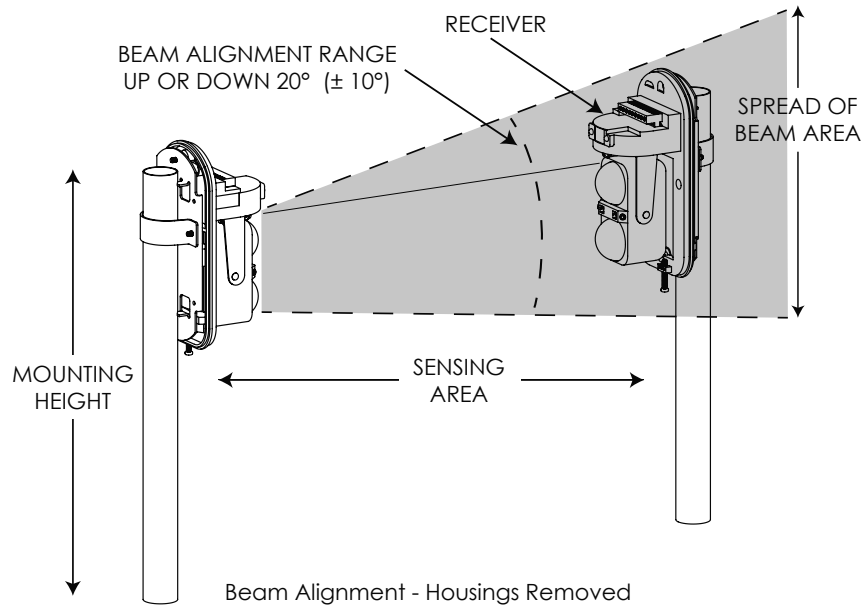
**SLIDE THE COVER UPWARDS AND THEN FORWARDS TO REMOVE THE COVER FROM THE HOUSING.**



Note: for the wall-mounting method, the two rubber knockouts will need to be removed from the housing.

## MOUNTING DISTANCE AND ADJUSTMENTS

- The unit will turn off the display and the buzzer after 1 minute of power up. The unit is still fully functional only the display is turned off.



**THIS COMPLETES YOUR PHOTO EYE BEAM INSTALLATION!**





**WARNING:** This product can expose you to chemicals including lead, which is known to the State of California to cause cancer.  
For more information, go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)