PHOTO EYE

Infrared Through Beam

Part #550014

INSTALLATION MANUAL

Read all instructions before installing this product.
Monitoring Method: N/C Contact

The infrared photo eyes are a People and Property safety device intended for use with automatic gate operating systems. Swing gate operators require at least one external monitored entrapment device for gate operation and Slide gate operators require at least two external monitored entrapment devices (one for each direction) for gate operation per UL325 the standard for gate operator safety. See gate operator installation manual.

The product is composed by a couple of adjustable optic infrared devices TX and RX, operating at 880 nm wavelength.

The rated range is 65 ft / 20 mt under all weather conditions.

The adjustable optic moves horizontally (±40°) and vertically (±15°) allows the best alignment in any installation condition.

TECHNICAL SPECIFICATIONS

Infrared emission with diode:	GaAlAs
Pulse modulation for diode:	1.5 KHz
Duty cycle	1:4000
Wavelength emission:	880 nm
Power supply:	9.5 - 24 Vac/dc
Current consumption at 12 Vac/dc	
- receiver	34 mA
- transmitter	45 mA
Double contact relay with serial exchange	yes
Output contacts	1 NO / 1 NC
Max DC power on relay contacts	24W / 48V
Max AC power on relay contacts	60 VA / 48 V
Operating temperature	-10°C /+55°C
Housing protection	IP55
Rated range in all conditions	65 ft / 20 m
Dimensions with hood: WxHxD	75 x 105 x 105 mm
	2.95 x 4.13 x 4.13 in
Conformity according to:	UNI8612
Marking:	UL325 / CE

PACKING LIST

ITEM	Qty
TX / TRANSMITTER	1
RX / RECEIVER	1
WIRING BOX	2
ALUMINUM COVERS	2
HOOD	2
RUBBER SEAL	2
WIRING BOX MOUNTING SCREWS AND NUTS	8
TX / RX MOUNTING SCREWS	8
Sheet metal screws	
COVER MOUNTING SCREWS	4

1. INSTALLATION

NOTE: Mounting brackets should be installed to a rigid object to prevent movement which could affect alignment and cause failures.

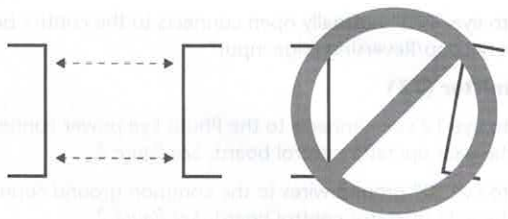
IMPORTANT: Conduit should be used from the control box to the photo eye wiring box to protect wires from damage and moisture. The wiring box has ½ inch knockouts located on the back and bottom for the conduit connection.

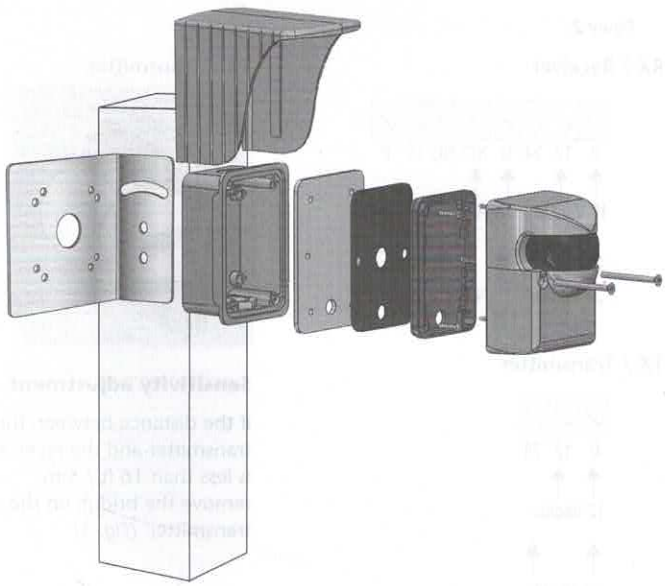
1. Determine the best location for the photo eyes considering the correct distance from the ground, conduit for wiring, location of any irrigation system that might exist (avoid water spray) and mounting surfaces are aligned with one another.
2. Verify the mounting surfaces are aligned with each other to assist in the alignment process. See figure 1.
3. Install the Transmitter and Receiver wiring box to the mounting brackets using 4 screws and nuts.
4. Install the conduit to the receiver and transmitter wiring box.
5. Install the receiver and transmitter wires into the wiring boxes.
6. Route wire through the photo eye metal back plate.
7. Install the Transmitter and Receiver photo eye back plate to the wiring box using the 4 sheet metal screws.

Do not install covers at this time, this will be done after alignment is complete.

NOTE: If installing the photo eyes across the driveway, avoid placing them to close to the gate to prevent gate slap from obstructing the beam when gate stops.

Fig. 1 Mounting Surface Alignment





2. ELECTRICAL CONNECTIONS

Wire size recommended 20 gauge stranded copper

NOTE: *Identify the type of installation the photo eye is being used for.*

A. Monitored Entrapment Device per UL325
B. Vehicular Safety Device

A. Wiring for Monitored Entrapment Device installation

Receiver (RX)

1. Photo eye "12" vdc connects to the Photo Eye power connection on the gate operator control board.
2. Photo eye "0" ground connects to the common ground connection on the gate operator control board.
3. Photo eye "C" common connects to the common ground connection on the gate operator control board.
4. Photo eye "NC" normally closed connects to the control board input for the direction of travel you are protecting.

Transmitter (TX)

1. Photo eye 12 vdc connects to the Photo Eye power connection on the gate operator control board. *See figure 2.*
2. Photo Eye "0" ground wires to the common ground connection on the gate operator control board. *See figure 2.*

B. Wiring for Vehicular safety Device Installation

Receiver (RX)

1. Photo eye "12" vdc connects to the Photo Eye power connection on the gate operator control board.
2. Photo eye "0" ground connects to the common ground connection on the gate operator control board.
3. Photo eye "C" common connects to the common ground connection on the gate operator control board.
4. Photo eye "NO" normally open connects to the control board "Safety Loop/Reversing Edge input"

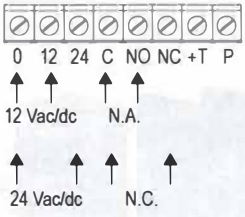
Transmitter (TX)

1. Photo eye 12 vdc connects to the Photo Eye power connection on the gate operator control board. *See figure 2.*
2. Photo Eye "0" ground wires to the common ground connection on the gate operator control board. *See figure 2.*

ELECTRICAL CONNECTIONS

Figure 2

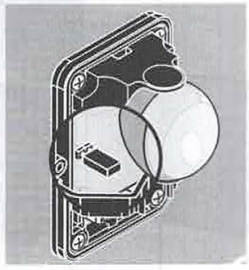
RX / Receiver



TX / Transmitter

Figure 3

TX / Transmitter



Sensitivity adjustment

If the distance between the transmitter and the receiver is less than 16 ft / 5 m, remove the bridge on the transmitter. *(Fig. 3)*

3. ALIGNMENT

Align

The RX / Receiver and TX / Transmitter have green LED 's which will illuminate when power is applied.

The RX / Receiver also has a RED Led which will illuminate when the units are not aligned or beam is obstructed.

A feature to assist in the optimal alignment allows for a voltmeter to be connected to the +T and P connections on the RX / Receiver terminal strip.

1. Set voltmeter to DC voltage setting.
2. Connect meter leads as shown in figure 4.
3. Adjust the sensitivity with the potentiometer on the receiver see figure 5.
4. Optimal alignment is when meter reads 3.2 Vdc. Set as close as possible to this reading.

Alignment Chart

TP-/TP+ readings DCV	Signal Strength	Red LED	Grn LED
3.2 Vdc	Optimum	OFF	ON

Figure 4

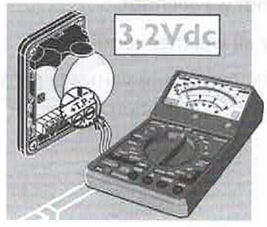
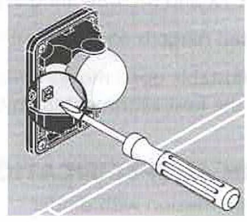


Figure 5



Once alignment is complete, install the covers using the 4 screws. Install the hood onto each unit.

WARRANTY

USAutomatic, LLC warrants this product to be free of defects in materials and workmanship for 1 YEAR. For a period of 1 YEAR following purchase USAutomatic, LLC. will repair or replace the product free of charge, including parts, shop labor and return to customer shipping and handling. This 1 YEAR warranty does not cover the plastic case from normal wear or damage due to misuse.

To have the product sent for warranty consideration, it must be returned with the proof of purchase and a return authorization number. To obtain a return authorization number please call 1-888-204-0174 for assistance. The return authorization number must be clearly marked on the outside of the return package or it may not be accepted.