



## Instruction Manual

The IRB-325 thru beam photoeye is an external entrapment protection device type B1, non-contact sensor for use with automatic gates and doors. The photoeye provides a signal to the gate or door operator that the beam is or is not obstructed. The IRB-325 operates up to 65 feet and is UL325 compliant with operators that require normally closed (NC) monitoring.

### Cautions and Warnings



This product is an accessory or part of a system. Install the IRB-325 according to instructions from the gate or door operator manufacturer. Comply with all applicable codes and safety regulations.

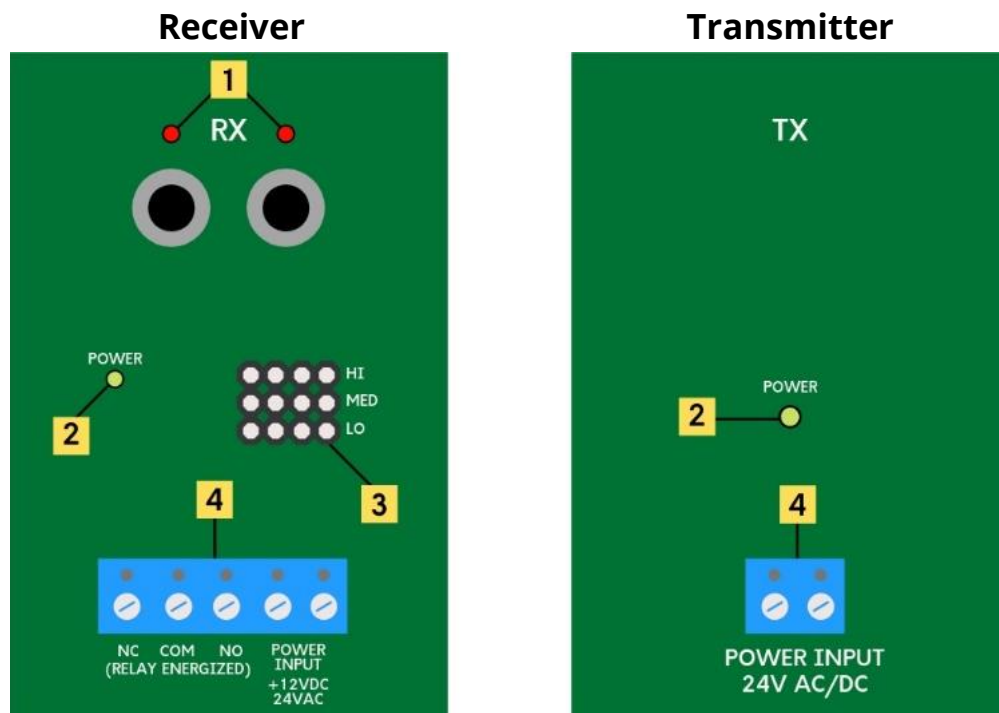
### Specifications

Operating Range	Up to 65 ft (20 m)
Power	12-24 VDC/AC
Current	150 mA (relay activated)
Relay Contact Rating	1 A @ 30 VDC
Surge Protection	Thermal fuse
Relay Output	Form C contacts (NO, COM, NC)
Operating Temperature	-40° to 170°F (-40° to 77°C)
Dimensions (L x W x H)	3.2" (82 mm) x 3.06" (78 mm) x 5.03" (128 mm)
Environmental Rating	NEMA 4X

### Ordering Information

- IRB-325 KIT Thru beam photoeye kit, includes transmitter, receiver, and protective hoods
- IRB-325-SP Liquid tight strain relief connector, nylon, set of two
- IRB-325-PT Mounting post, black powder coated steel, 2" x 2" x 2'

# Board Diagram



## 1. Detect LED (red)

<i>Aligned or No Detection</i>	off
<i>Not Aligned or Beam Blocked</i>	on
<i>Imperfect Alignment</i>	one on, one off

## 2. Power LED (green)

<i>Power</i>	on
<i>No Power</i>	off

## 3. Sensitivity Jumper

The IRB-325 has three sensitivity settings: high, medium or low. To adjust the sensitivity, move both jumpers to the desired high, medium or low setting.

## 4. Terminal Block

The power inputs on both the receiver and transmitter are not polarity sensitive.

### Receiver Terminal Block

Normally Closed	NC
Common	COM
Normally Open	NO
12-24 VDC/AC	Power Input
12-24 VDC/AC	Power Input

### Transmitter Terminal Block

12-24 VDC/AC	Power Input
12-24 VDC/AC	Power Input

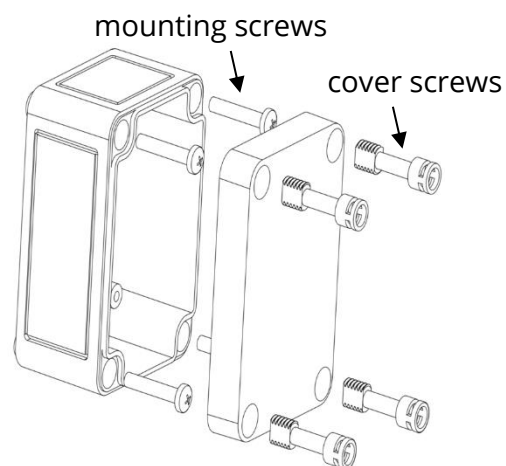
## Installation

- Determine the mounting location of the IRB-325 photoeye according to UL325 guidelines.
- Deactivate the gate or door during photoeye installation.

1. Thread all wires through a UL listed watertight fitting, such as a strain relief or watertight conduit connector.
2. Connect 12-24 VDC/AC power to the "Power Input" terminals on the transmitter (marked "TX") and receiver (marked "RX"). The power input terminals are not polarity sensitive.
3. Wire the receiver's relay contacts to the operator. For operators that require normally closed contacts, connect terminals NC and COM to the designated terminals. For operators that require normally open contacts, connect terminals COM and NO to the designated terminals.
4. Verify that the IRB-325 transmitter and receiver are aligned and apply power. The green power LED should be on for both the transmitter and receiver.
5. The receiver and transmitter are aligned properly when both red LEDs on the receiver are off. If necessary, adjust the sensitivity by moving the jumpers (J1 and J2) up to increase and down to decrease. Both jumpers should be on the same high, medium or low setting.

**TIP:** A close but imperfect alignment will have one red LED turned on.

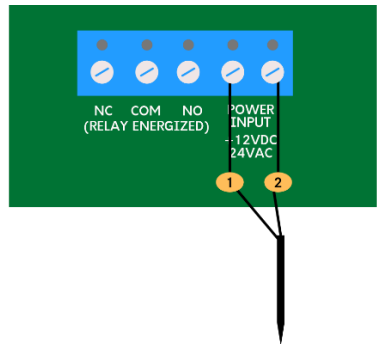
6. Mount the receiver and transmitter at opposite ends of the detection zone using the four holes on the housing. After mounting, seal the housing using the cover and the four plastic screws provided to ensure a watertight seal.



7. Place an obstruction (ex. hand) between the IRB-325 transmitter and receiver. Both red LEDs on the receiver will turn on. Check the operator control board and verify that the safety input is recognized by the operator. Test the beam with an obstruction between transmitter and receiver at multiple distances to confirm proper operation.
8. Remove the obstruction and both red LEDs will turn off.

**TIP:** If the IRB-325 is aligned but not detecting an obstruction, consider adjusting the sensitivity on the receiver until an obstruction is detected. This may be applicable for installations with a detection zone of less than 20 ft.

## Troubleshooting

Symptom	Possible Cause	Solution
Does not detect obstruction	Sensitivity is too high  Signal is reflecting off another surface	Move jumpers J1 and J2 to a lower position.  Check area for highly reflective surfaces.
Red LEDs on	Sensitivity is too low  Transmitter does not have power  Receiver does not "see" transmitter	Move jumpers J1 and J2 to a higher position.  Check power source to transmitter.  Make sure transmitter and receiver are correctly aligned.
Receiver detects intermittently with no obstruction present	Dirty power	Using the two ceramic disk caps provided – <ol style="list-style-type: none"> <li>1. On the receiver, place a lead from disk cap 1 into the first power terminal.</li> <li>2. Place a lead from disk cap 2 into the second power terminal.</li> <li>3. Connect the free leads of disk caps 1 and 2 and attach them to an earth ground.</li> </ol> 
Receiver activates but does not transmit signal to operator	Faulty connection between receiver and operator control input	Verify all wire and terminal connections.

## Warranty

EMX Industries, Inc. products have a warranty against defects in materials and workmanship for a period of two years from date of sale to our customer.