

# IRB-4X

## INFRARED MODULATED PHOTOCELL

### IRB-4X

- LED alignment indicator on the receiver simplifies installation.
- Supervised relay output provides a "detect" signal in case of power failure.
- Non-reflective through-beam system is not affected by shiny surfaces.
- Modulated infrared beam is not affected by sunlight, rain, dust or dirt.
- Wide transmission angle of 24° simplifies installation and increases the reliability of operation.
- Wide temperature operating range for applications from cold storage to steamy food prep areas.



**Pictured here the IRB-4X transmitter and receiver in a water-tight NEMA-4X housing with optional protective hood.**

### APPLICATIONS

The IRB-4X photocell is used as a safety, reversing, or opening device in conjunction with automatic operators. The IRB-4X will work with any control board that accepts dry contact in the input. This easy to install reliable photocell is used with garage doors, rolling doors, parking barriers and other equipment.

### HOW IT WORKS

The IRB-4X transmitter and receiver are mounted in line of sight at a distance of up to 75 feet. When the infrared beam is broken the internal relay is de-energized and detection signal is produced on the relay contacts. The red LED indicator on the receiver is lit when the IRB-4X receiver is not aligned or when the beam is interrupted.



*The IRB-4X works without lenses so it is easy to align. Making it less sensitive to fog, dust, snow & sunlight!*

### EXTEND TIMER OPTION

This option is available in the IRB-4X-T model. The delay is activated after the beam was broken and the detect signal was issued by the internal relay. The delay extends the detect signal after the beam is re-established, so in effect, the detect signal is extended beyond the presence time of an obstruction between the IRB-4X receiver and transmitter. The extend time is adjustable by a potentiometer in the range of 0 to 15 seconds. (SEE D-1)

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**EMX**  
INDUSTRIES, INC.

# IRB-4X INFRARED MODULATED PHOTOCELL

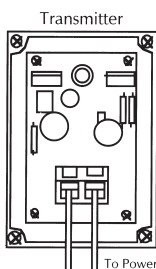
## Technical Information

<b>RANGE</b>	Low = 25 ft, Medium = 50 ft, High = 75 ft, refer to the Excess Gain Chart
<b>POWER</b>	12V to 24V AC or DC +25%, 30-60mA
<b>RELAY CONTACTS</b>	5A 30VDC or 250VAC
<b>EXTEND TIMER (OPTIONAL)</b>	Adjustable from 0-15 seconds
<b>HOUSING</b>	Polystyrene NEMA 4X box with optional anodized aluminum hood
<b>DIMENSIONS</b>	3.7" x 2.56" x 2.24"
<b>TEMPERATURE</b>	-40°F to +170°F

## Installation Instructions

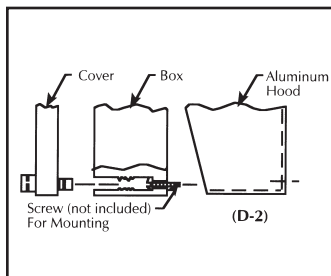
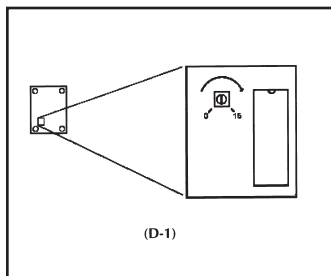
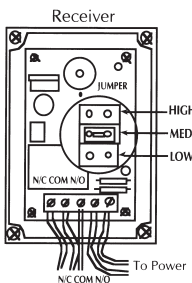
### TRANSMITTER

1. Open the front cover.
2. Attach the transmitter box to the location with 4 screws.
- (SEE D-2)
3. Connect terminals 1 and 2 to 12V to 24V AC or DC using the ready-made knock-out.
4. Replace the cover and tighten it with the 4 plastic screws to ensure proper sealing of the box.



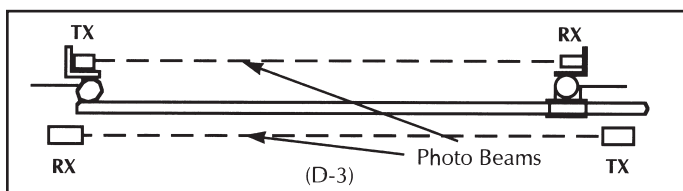
### RECEIVER

1. Open the front cover.
2. Attach the receiver box to the location with 4 screws. (SEE D-2)
3. Connect terminals 4 and 5 to 12V to 24V AC or DC using the ready-made knock-out.
4. Terminal 1 is connected to normally closed, 2 to common and 3 to normally open contact of the relay. Connect these contacts to your operator as required by the manufacturer.
5. Replace the cover and tighten it with the 4 plastic screws to ensure proper sealing of the box.



### SLIDE GATE OPERATOR

Multiple IRB-4X application. If more than one IRB-4X is installed on a location there is a possibility that a transmission from one set of IRB-4X will be received by the other unit. To prevent this situation, mount the sets in a way that two receivers will face each other. (SEE D-3)



## Ordering Information

- IRB-4X** Infrared transmitter and receiver
- IRB-4X-T** as above with extended timer for detection
- IRB-HD** Protective hood made out of anodized aluminum
- IRB-SP** Liquid tight strain relief connection
- IRB-BR** L-shaped 6" x 3" mounting bracket
- IRB-TRF** Wall plug-in transformer 110VAC to 19.5VAC

## Installation Notes

- Align the transmitter and receiver, so they are in line of sight. At a distance of 30 feet, maximum 1 foot deviation is allowed from the center of the line of sight.
- Test the photocell by interrupting the beam with an object measuring approximately 8" x 8". The relay must be actuated and the red LED lit.
- If the beam is not interrupted, it means the infrared beam is reflected from the floor or other surface. Try to change the receiver position slightly or decrease the detection range by moving the internal jumper in the receiver.
- Should you experience false detection check the power supply for voltage and noise. Sudden and large voltage changes may cause false detection. These voltage changes may occur when the motor is switched on.
- Excess gain is a measurement of the amount of infrared light collected by the receiver over and above the required minimum for normal operation. In clean environment excess gain of 1.5 is sufficient. For slightly dirty environment with light dust build-up excess gain of 5 is required. For dirty environment with obvious dust, fog or mist build-up excess gain of 10 is required. The transparent covers must be cleaned occasionally or when necessary to prevent the blocking of the infrared beam.

