OPERATING INSTRUCTIONS

NIR-50-325

RETROREFLECTIVE PHOTOEYE

UL325-2016 MONITORED DEVICE

EMX INDUSTRIES, INC.

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Cautions and Warnings

1. ***Read and follow all operating and installation instructions.***
2. ***Always follow gate operator manufacturer installation instructions regarding installation of Type B1 sensor and operator.***
3. ***Disable the gate so it is unable to move.***

Refer servicing to qualified service personnel.

IMPORTANT:
This product is an accessory or part of a system. Always read and follow the manufacturer's instructions for the equipment before connecting this product. Comply with all applicable codes and safety regulations. Failure to do so may result in damage, injury or death.

Product Overview

The NIR-50-325 retroreflective photoeye is an external entrapment protection device Type B1, non-contact sensor for use with automatic gates and doors. The light beam is pulsed near infrared. Since the reflector directs the beam back to the photoeye, wiring to the other side of the roadway is not required. The NIR-50-325 provides a signal to the gate or door operator that the beam is not obstructed. The operating range is up to 50ft. The NIR-50-325 operates over a voltage range of 12-30VDC and 24-30VAC.

Two LED indicators provide status information at a glance, making set-up and alignment easy. A yellow LED indicates signal stability. A red LED indicates alignment with reflector (off when obstructed).

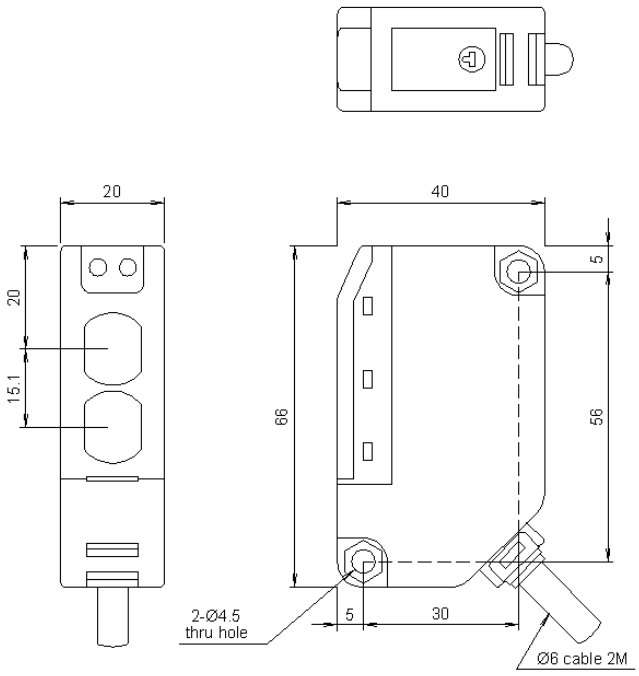
The NIR-50-325 is configured for 10k monitoring by the operator and complies with UL325 requirements effective Jan.12, 2016. The 10k termination resistor is built into the photoeye. Refer to operator manufacturer's instructions to ensure compatibility.

Refer to operator installation instructions for proper monitoring selection.

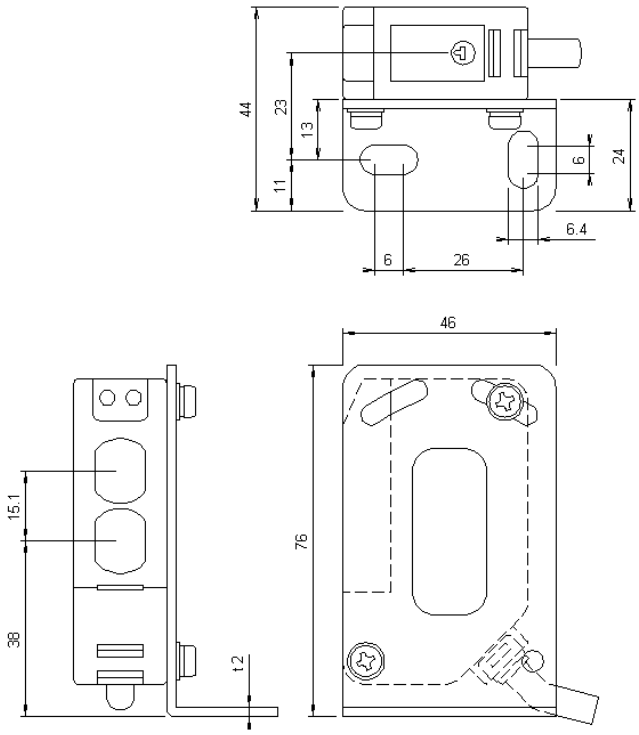
Specifications

Specifications	
Operating range	0.5ft (0.1m) ...50ft (15.2m)
Sensitivity adjustment	Potentiometer
Signal stability indicator	Yellow LED
Alignment indicator	Red LED
Relay output	Form C contacts (NO, COM, NC) 30VAC/VDC, 2A
Resistive termination	10kΩ (internal)
Response time	10ms
Power (see Cautions and Warnings)	12...30VDC, 24...30VAC @ 60 Hz
Current draw	83mA
Operating temperature	-4°...131°F (-20°...55°C)
Environmental protection	IP 66 IEC
Dimensions (L x W x H)	1.3" (33mm) x 0.8" (21mm) x 2.6" (66mm)
Weight	0.2 lbs (91g),
Connections	5 wires, 6.5' (2m) cable
Certifications	CE UL 325-2016

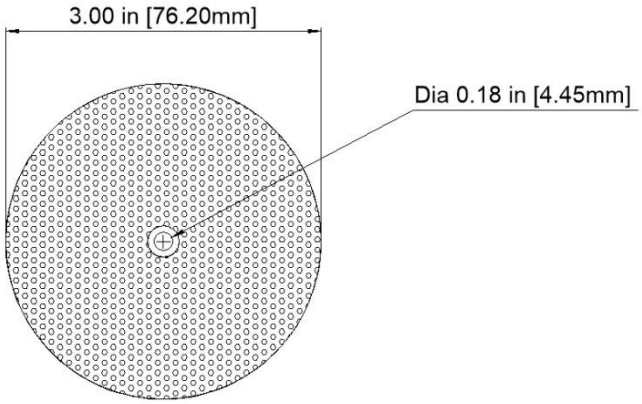
Sensor Dimensions



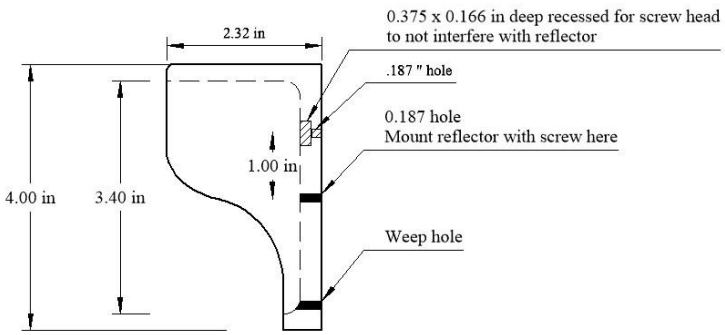
Bracket Dimensions



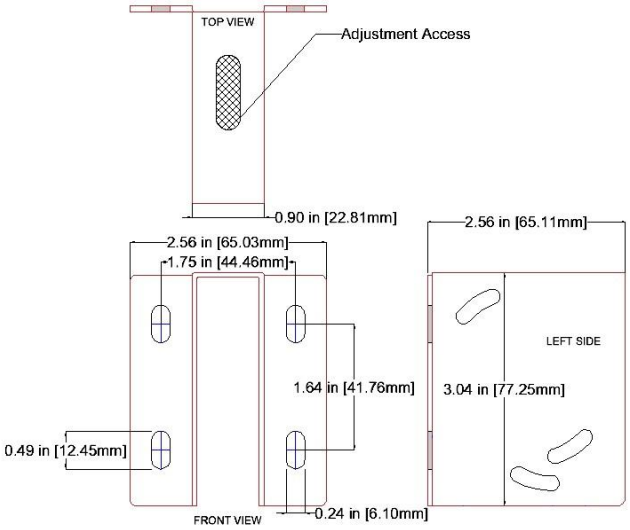
REFLECTOR- O Dimensions



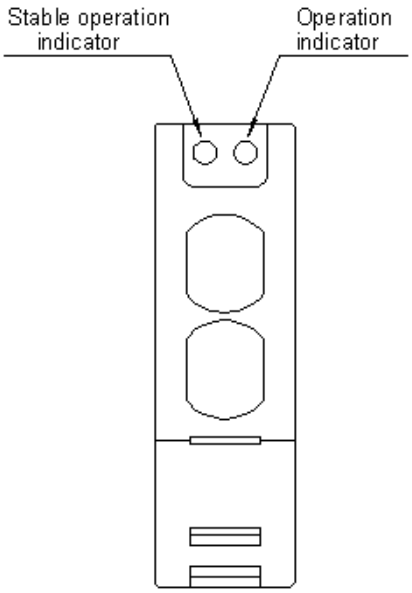
REFLECTOR-O-HD Dimensions

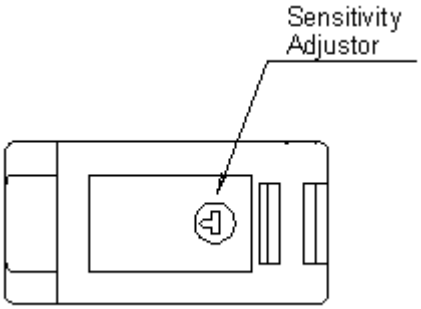


NIR-HD Dimensions



Indicators	Sensitivity Adjustment



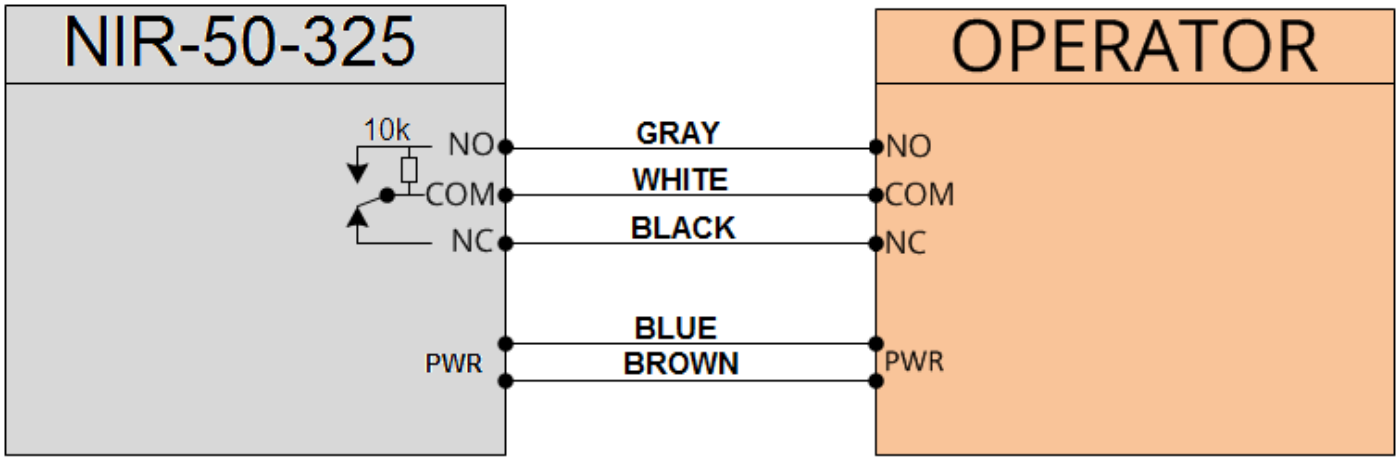


Configuration Settings and Wiring Diagrams

Wire color	Description
Brown	Power input (+)
Blue	Power input (-)
Gray	Normally Open (NO) contact Relay output shown in energized state (power on, aligned with reflector, no obstruction)
White	Common (COM) contact
Black	Normally Closed (NC) contact Relay output shown in energized state (power on, aligned with reflector, no obstruction)

Resistive

NOTE: Remove power when wiring the unit



NOTE: The relay contacts on the board and the references to them in these instructions are shown in the energized state, aligned with reflector and no obstruction

Indicators

Indicator Definitions		
Yellow	**On**	Unit is energized and signal is aligned and stable
Yellow	**Off**	Unit is off or signal is unstable
Red	**On**	Unit is energized and alignment is correct
Red	**Off**	Beam is obstructed or unit is not aligned with the reflector

Installation

Install the NIR-50-325 according to instructions from the gate operator manufacturer. The intent of External Entrapment Protection Device Type B1 non-contact sensor is to protect a person from being accidentally injured by the moving gate or door.

1. Always follow the instructions of the gate operator manufacturer regarding installation of Type B1 sensors on the gate operator. The instructions of the gate operator manufacturer always supersede any instructions given in this or any other instructions by EMX Industries
2. When using the relay outputs, do not exceed the voltage/current ratings indicated in the specification table.

The recommended alignment technique is to mount the NIR-50-325 at the desired location and hold reflector about 3 feet in front of the unit while watching the lights to assure that both remain lit. Move backward to the desired mounting location for the reflector. You may have to move the reflector up, down, left or right to keep the reflector in the middle of the signal path. This ensures

the least troublesome setup by keeping the reflector off the edges of the signal where any movement may take it out of alignment.

NOTE: The signal pattern is only 2 feet in diameter

Verification and Operation

Verify proper operation of the NIR-50-325 according to instructions from the gate operator manufacturer. The intent of External Entrapment Protection Device Type B1 non-contact sensor is to protect a person from being accidentally injured by the moving gate or door.

1. Verify that the NIR-50-325 and reflector are in line of sight and apply power. Confirm that the red LED and yellow LED are on, indicating power and proper alignment.
2. Place an obstruction (ex. hand) between the NIR-50-325 and the reflector. Ensure the yellow LED and red LED turn off. Check the operator control board and verify that the safety input is actuated.
3. Remove the obstruction and the yellow LED and red LED will turn on.
4. Follow gate/door manufacturer's installation instructions and safety checks to verify that the NIR-50-325 is operating properly.

Troubleshooting

Symptom	Possible cause	Solution
Unit stays in detect	Unit out of alignment	Verify alignment
	Reflector covered with dirt, dust, snow, or water	Clean reflector surface of contaminants
	Water inside reflector	Replace reflector
No output	No Power	Check power and wiring as per chart on page 4 and 5
	Bad connection, wires broken	Check connections
	Improper wiring	Verify wired to correct inputs on operator
No detection	Unit not powered	Check power
	Other reflective surface causing signal return	Check surrounding area for reflective surface

Ordering Information

NIR-50-325	**Retroreflective photoeye; includes mounting bracket with hardware**
REFLECTOR-O	**Reflector, 3" dia.**
REFLECTOR-O-HD	**Protective hood for reflector**
NIR-HD	**Protective hood for NIR**

Warranty

EMX Industries Incorporated warrants all products to be free of defects in materials and workmanship for a period of two years under normal use and service from the date of sale to our customer. This warranty does not cover normal wear and tear, abuse, misuse, overloading, altered products, damage caused by incorrect connections, lightning damage, or use other than intended design.

There is no warranty of merchantability. There are no warranties expressed or implied or any affirmation of fact or representation except as set forth herein.

EMX Industries Inc. sole responsibility and liability, and the purchaser's exclusive remedy shall be limited to the repair or replacement at EMX Industries option of a part or parts found not conforming to the warranty. In no event shall EMX Industries Inc. be liable for damages, including but not limited to damages resulting from non-conformity, defect in material or workmanship.

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