



TruGuard™

Reflective Photo Optic System, N.O./N.C. Output 

MODEL: TG-R-NO-K10

WARNING

Read and understand all instructions before beginning installation. Disconnect power to motor and test upon completion. Photo optics should be installed by qualified personnel to ensure the requirements herein have been met. Keep these instructions with the installation. Always abide by local and national electrical code specifications when wiring accessories to motor controls.

The Miller Edge **TruGuard** monitored and fail-safe reflective photo optic system with a normally open (N.O.) and normally closed (N.C.) output is a UL Recognized Component that meets the UL 325 requirement. The TruGuard consists of an emitter/receiver unit with a mounting bracket/hood and a reflector with hood. The emitter/receiver is intended to be positioned in such a way that an obstruction in a hazardous area will interrupt the beam of light. An interruption of the beam will signal the operator to stop and/or reverse motion.

CONTENTS

- (1) Emitter/receiver (unit)
- (1) Emitter/receiver bracket/hood
- (2) Emitter/receiver through-unit screws
- (2) Emitter/receiver through-unit nuts
- (2) Emitter/receiver through-unit washers
- (1) Polarized reflector
- (1) Reflector hood
- (1) Reflector center screw

REQUIRED

- Mounting hardware as required by mounting surface
- Hand tools for hardware installation

RECOMMENDED

- Operator manual

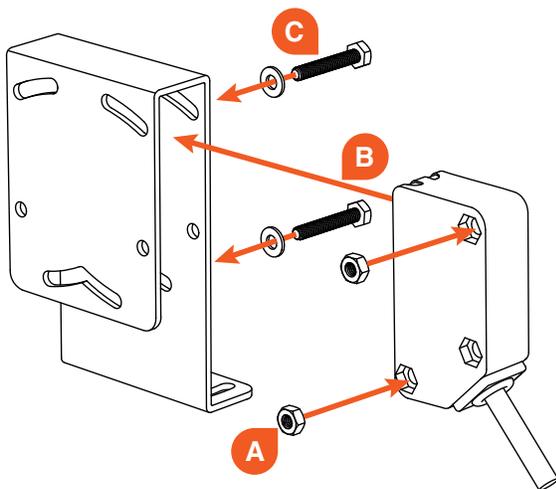


IMAGE 1: Emitter/Receiver with Bracket & Through-Unit Hardware

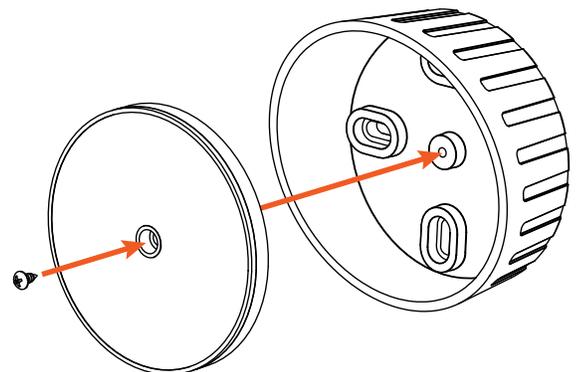


IMAGE 2: Reflector with Hood & Center Screw

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I. INSTALLATION

Select a stable mounting location with a clear line of site, across the protected area, to detect obstructions. The light beam should not be obstructed by plants, leaves, etc.

1. Mount the emitter/receiver vertically or horizontally in its desired location. **IMAGE 3**
 - a) Using the appropriate hardware required by the mounting surface, attach the mounting bracket.
 - b) Install the emitter/receiver into the bracket: **IMAGE 1**
 - i. Place provided nuts into the top and bottom recessed corners of the emitter/receiver. (1A)
 - ii. Slide the emitter/receiver into the bracket. (1B) The lens should point across the protected area toward the reflector mounting location.
 - iii. Place washers onto screws and insert through bracket and emitter/receiver from the side opposite the nuts. Finger tighten to secure in place. (1C)

2. Power the emitter/receiver. To avoid risk of electrocution, turn off and disconnect power to the operator before wiring.
 - a) Connect the emitter/receiver to the operator per the wiring diagram. **TABLE 1**
 - b) Apply power to the operator.
 - c) Confirm the green LED light on the emitter/receiver has turned on. **TABLE 2**

3. Mount the reflector in its desired location. **IMAGE 2**
 - a) Install reflector hood using the appropriate hardware on the opposite side of the protected area from the emitter/receiver.
 - b) Secure the reflector to the hood with the provided center screw, noting the marking on the back of the reflector for up orientation.

4. Align the emitter/receiver with the reflector.
 - a) Aim the powered emitter/receiver toward the reflector. You can stand or kneel beside the unit, sighting along it and viewing the reflector, to help with alignment. **IMAGE 4**
 - b) With the hardware loosened, turn the emitter/receiver left and right and/or up and down until the yellow light turns on solid. **IMAGE 3**
 - c) Tighten the mounting screws. Do not overtighten the through-unit screws.

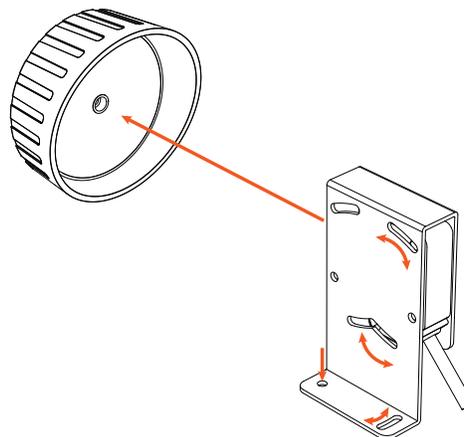


Image 3: Installing and Aligning the Emitter/Receiver and Reflector (horizontal mounted shown)

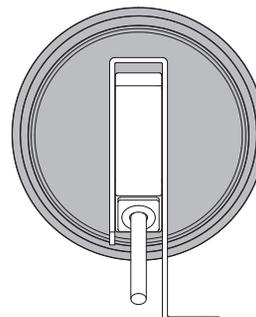


Image 4: Aligning the Emitter/Receiver with the Reflector

TABLE 1: Wiring Connection Diagram

	NORMALLY OPEN	NORMALLY CLOSED
WHITE	COM	COM
BLACK		Normally closed input*
GRAY	N.O. input	
BROWN	AC or (+)DC**	AC or (+)DC**
BLUE	AC or (-)DC**	AC or (-)DC**
Outputs listed are with unit powered and aligned		
*For monitoring, power may be a switched source		
**Power source: 12-40 V DC, 24-48 V AC		

TABLE 2: LED Indicators

GREEN	Solid: Power
YELLOW	Solid: Aligned Flashing: Signal is marginal

II. TROUBLESHOOTING

PROBLEM	REASON	SOLUTION
Green LED off	<ul style="list-style-type: none"> No power 	<ul style="list-style-type: none"> Verify your power source Refer to operator manual for switched power
Yellow LED off	<ul style="list-style-type: none"> No signal Reflector not seen 	<ul style="list-style-type: none"> Align emitter/receiver Remove blockage
Yellow LED flashing	<ul style="list-style-type: none"> Poor signal Distance is too far 	<ul style="list-style-type: none"> Align emitter/receiver Relocate components

III. TECH SUPPORT

For additional assistance, contact Miller Edge Tech Support: 800-220-3343

IV. GENERAL SPECIFICATIONS

PERFORMANCE

Operating Range	6-30 ft. (2-9 m)
Number of Elements	1 element
Maximum Ambient Light	>100,000 lux
Aperture Angle	±3°
Reflector	Polarized corner cube
Operating Temperature	-13°F to +131°F (-25°C to +55°C)
Agency Approvals	UL 325 Recognized Component

ELECTRICAL

Power Source	12-40 volts DC, 24-48 volts AC
Current Consumption	<40 mA
Relay Rating	Maximum 40 volts AC/DC, 2 amp.
Output	N.O., N.C.

PHYSICAL

Dimensions	Emitter/receiver: 3/4 W x 2-1/2 H x 1-3/8 D in. (18 W x 62 H x 35 D mm) Emitter/receiver bracket: 1-5/8 W x 4 H x 2-3/8 D in. (42 W x 113 H x 60 D mm) Reflector with hood: 3-7/8 W x 1-3/4 D in. (95 W x 44 D mm)
Weight	Emitter/receiver with cable: 5.5 oz. Bracket: 6.5 oz. Reflector with hood: 3.4 oz.
Housing Material	Emitter/receiver: Polycarbonate housing, PMMA lens Bracket: Steel
LED Indicators	2: Power, alignment
Cable Length	6 ft., 20 AWG cable
Mounting Orientation	Vertical, horizontal
Degree of Protection	IP67

V. MAINTENANCE

It is strongly recommended that users check photo optics at least once per month for operation, and damage to housings and mountings. Also check for signs of damage to cables or connection points. Refer to your operator manual for detailed instructions about motor connections.

VI. REPLACEMENT

To replace your TruGuard Reflective, contact your sales representative. Attempting to repair your Miller Edge photo optic is not recommended and will void the manufacturer warranty.

VII. WARRANTY

TruGuard Reflective carries a **2-year warranty** from date of shipment from Miller Edge for credit or replacement. This warranty applies to normal use, which is found to have defective materials or workmanship, as determined solely by an authorized factory representative. This warranty is void where evidence of misuse or abuse is present. This warranty covers repair or replacement of the purchased product only; product installation/labor charges are not covered. Miller Edge manufactures its products to meet stringent specifications and cannot assume responsibility for those consequences arising from improper installation or misuse. Installation instructions and testing procedures provided by Miller Edge must be followed for proper operation and maintenance.

VIII. ACCESSORIES

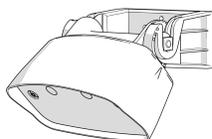
Contact your Miller Edge sales representative for photo optics accessories:



**SENSING
EDGES**



**JUNCTION
BOXES**



**MOTION
SENSORS**



**OPERATOR
MODULES**



**BUMPERS
& SEALS**



**WARNING
LABELS**