INSTALLATION INSTRUCTIONS

Reflecti-GUARD

Model #RG

Monitored Retro-Reflective Photo Eye

IMPORTANT: READ AND UNDERSTAND ALL INSTRUCTIONS BEFORE BEGINNING INSTALLATION

The Reflecti-Guard photo optic system consists of an emitter/receiver unit and a retro-reflector. The unit is intended to be positioned in such a way that an obstruction in a hazardous area will interrupt the visible light beam. An interruption of the beam will signal the operator to stop or stop and reverse motion.

1-Models

- RG-P: 30-foot range, 2-wire or 4-wire (clip 2 jumper wires) pulsed output
- RG-R: 30-foot range, 10K, normally open (clip jumper wire), normally closed

2-Parts List

Check to make sure all parts are included:

- (1) Emitter/Receiver (the unit)
- (1) Retro-reflector (the reflector)
- (1) Unit mounting bracket
- (1) Reflector mounting bracket
- (2) Hex head mounting screws
- (2) Machine screws
- (4) Flat washers
- (4) Stop nuts
- (1) Strain relief
- Optional flexible conduit

To avoid risk of electrocution, turn off and disconnect electrical power to the motor before wiring.

3-Mounting Preparation

1. Remove the bottom cap from the base by pressing in the tabs with your fingers and pulling the cap away from the unit.
2. To open the unit, remove the two (2) Phillips screws accessible from the bottom of the base.
3. Slide the base away from the case to expose the PCB and carefully set it aside.
4. Attach the mounting bracket to the unit by sliding the head of the provided hex-head bolts into the appropriate channel of the case and loosely tighten with the provided nuts. This will allow easier adjustment during the alignment phase.
5. Before mounting either the unit or reflector, proceed with wiring the unit.

4-Unit Wiring Connections

Follow the simple wiring below to connect the unit to the operator:

Terminal Block #1: Connect to 12/24 VAC/DC for N.C., 10K, N.O., or 4-wire pulsed operation

Terminal Block #2/#3: Connect to “monitored photo eye input” of the operator (10K, N.C., pulsed outputs), or “safety edge” input (N.O. output)

Note: The RG-P version comes from the factory as a 2-wire pulsed output. To make this a 4-wire pulsed output, clip the wire loop jumpers J3 and J4.

Note: The RG-R versions comes from the factory as 10K or N.C. output. For normally open (N.O.) operation, clip the jumper wire located at J2 on the PCB.

6. Re-insert the base into the case and re-tighten the screws.
7. Snap on the bottom cap.

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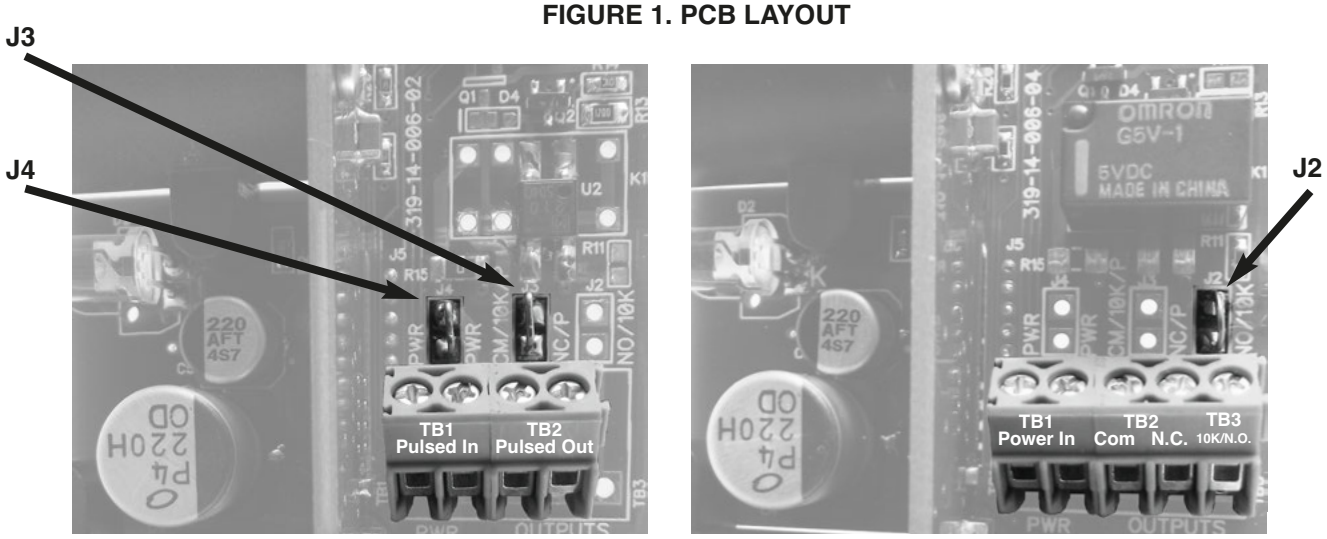
TABLE 1. REFLECTI-GUARD WIRING TABLE

Safety Device Output	TB1 Connects to: 12/24V	TB2	TB3	J2	J3	J4
2-Wire Pulsed	Not used	Connect to operator monitored input terminals.				
4-Wire Pulsed	Yes	Connect to operator monitored input terminals.			Cut	Cut
N.C.	Yes		Use N.C. & Common and then connect to operator monitored input termanals			
10K	Yes		Use 10K & Common and then connect to operator monitored input termanals			
N.O. (non-monitored)	Yes		Use N.O. & Common and then connect to operator non-monitored input termanals	Cut		

FIGURE 1. PCB LAYOUT



RG-P **RG-R**

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5-*Mounting & Alignment*

1. Select a stable mounting location with a clear line of site to detect obstructions, where the light beam could not be obstructed by plants, leaves, etc.

   Note: The unit and reflector should be mounted vertically. As a reflective device, the RG is more sensitive to reflections. Use care to avoid reflective surfaces that are parallel to the beam.
2. Mount the unit vertically in its desired location. A suggestion is to leave it a little loose to aid in aligning with the reflector.
3. Test mount the reflector vertically in its desired location. The reflector should be mounted such that it is perpendicular to the light beam. A suggestion is to use some type of tape for test mounting before permanently mounting it. The bottom edge of the reflective area should not be less than 2 inches above the floor.
4. Aim the powered unit toward the reflector. You can stand or kneel behind the unit, siting along it and viewing the reflector, to help with alignment. Turn the unit back & forth and/or move it up and down until you see the brightest portion of the beam in the reflector. You may be able to see the green alignment LED being reflected as well as the red beam. When the alignment LED is on solid, the alignment with the reflector is good.
5. The reflector can also be moved to aid in alignment. Watch the front mounted green LED on the unit. When the unit sees the reflector well, it will stay solid green if you watch it for several seconds. When the alignment LED is flickering, the unit is either seeking a good reflection from the reflector or sees an obstruction.
6. If you have trouble getting the unit aligned with the reflector, try raising or lowering either the reflector or the unit. Make sure the distance spanned is between 7 and 30 feet.

6-*Technical Specifications*

Detection Technology	Visible and reflective
Infrared Beam Range	7’ to 30’
Operating Temperature	-40°F to 185°F (-40°C to 85°C)
Power Supply	7-30 VAC (50/60 Hz) or 10-42 VDC, 75 mA
Power Indicator	Top mounted green LED (RG-R) or blue LED (RG-P)
Fault Indicator	Top-mounted red LED
Alignment Indicator	Front-mounted green LED
Enclosure	NEMA 4
Certification	UL 325

7-Troubleshooting Tips

Normal operation: Top and front green LEDs ON solid, RED is OFF.

Rx LED	Status	Diagnosis	Solution
Top Green or Blue	On	Power is ok	Normal operation
	Off	No power	Check wires (loose/broken)
Top Red	On	Fault*	Remove obstruction and/or re-align
	Off	No fault	Normal operation
Front Green	On Solid	Aligned; normal operation	Normal operation
	Off	Unit and reflector not aligned or fault	Align unit and reflector, remove obstruction, or realign
	Flickers	Unit and reflector are partially aligned, seeking reflector, or fault	Align unit and reflector better; remove obstruction or realign

*Note: Fault is a blocked beam by an obstruction or a misalignment of the unit with its reflector.

Note: As with all reflective photo eyes, systems impaired by dust, fog, snow, ice, etc., might cause a continued fault condition until the substance is removed.

8-Care & Maintenance

- Use only a clean lint-free cotton or nylon cloth or a cotton swab to clean the lenses or outer protective film. Do not use any cleaning fluids on these surfaces.
- The outer surfaces of the unit and reflector, except for those mentioned above, can be wiped with a cloth dampened with water. Wring out the cloth to remove excess water.
- Do not submerge the unit in any liquid.
- If the reflector is damaged, contact Miller Edge to obtain a new one. Using any other reflector will void the UL 325 certification.

9-Warranty

Miller Edge, Inc. will replace or repair within 2 years of shipment from factory. Warranty is void where evidence of misuse or abuse is present as determined solely by our authorized factory representative.

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