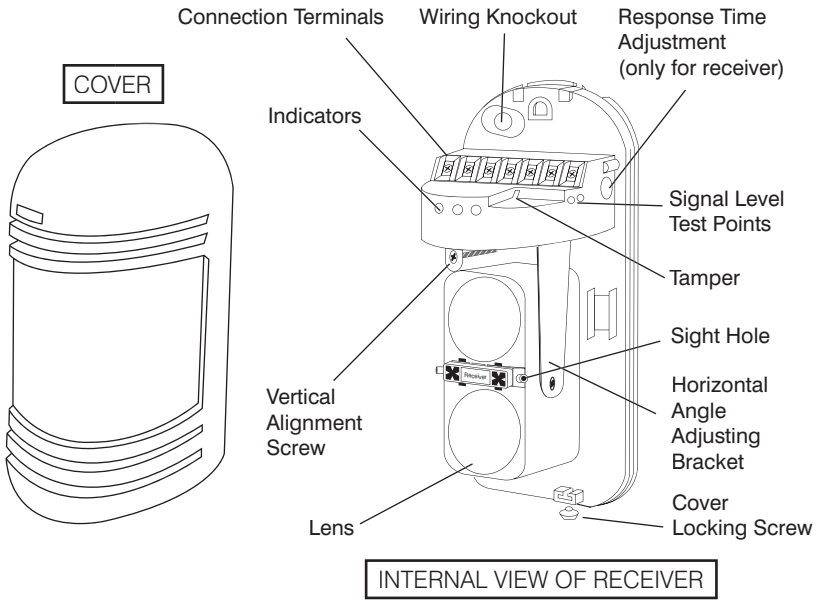
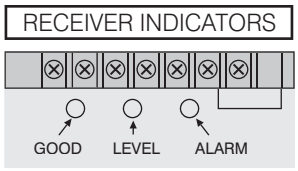
PHOTOELECTRIC DUAL BEAM DETECTOR

Manual
R4222

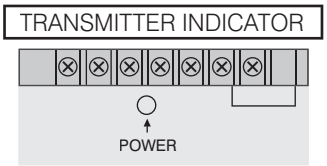
1 PARTS



INTERNAL VIEW OF RECEIVER



- **GOOD** LED (green). Use when adjusting beam alignment. ON when beams are aligned, OFF when beams are not aligned. (Refer to operation instructions)
- **LEVEL** LED (red). **ON indicates received signal.** Brightness varies, depending on incident level.
- **ALARM** LED (red). ON indicates beam blocked. Use when setting response time. (Refer to operation instructions)

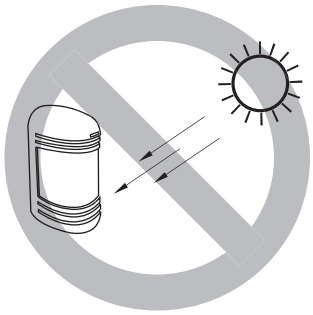


- **POWER** LED (green). ON when light beam is transmitting.

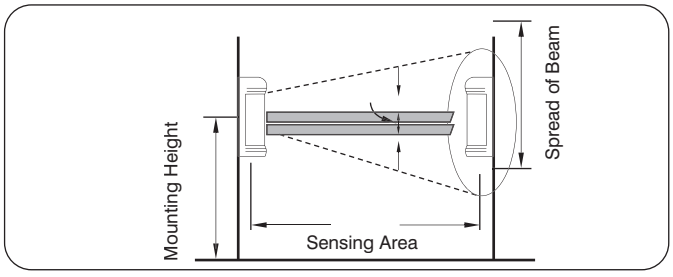
2 MOUNTING CAUTIONS *Do not mount the detector in the following conditions:*

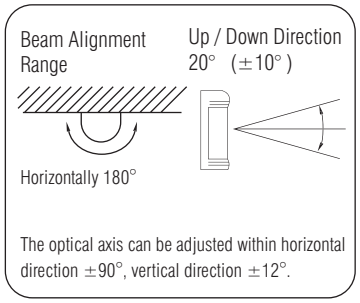
Where obstructions (plants, fences, etc.) are between the receiver and the sender.

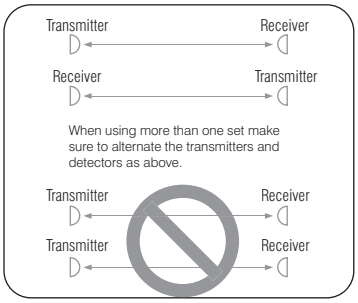
Where the mounting surface is unstable.



Where sunlight and headlights shine directly into the front of the receiver.

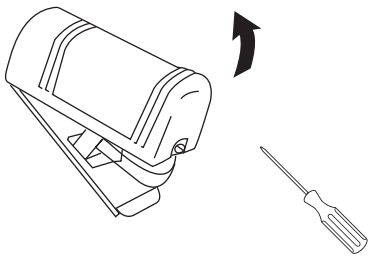




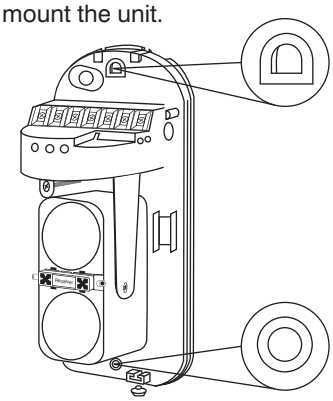


3 MOUNTING AND CONNECTIONS

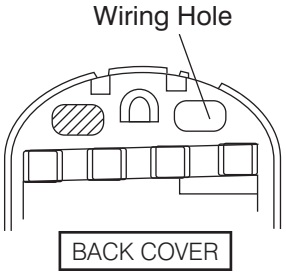
1. Loosen the cover-holding screw and remove the outer cover.



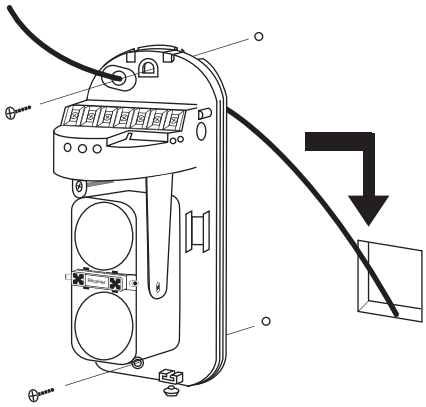
2. Remove the rubber knock-out and use the screw holes to mount the unit.



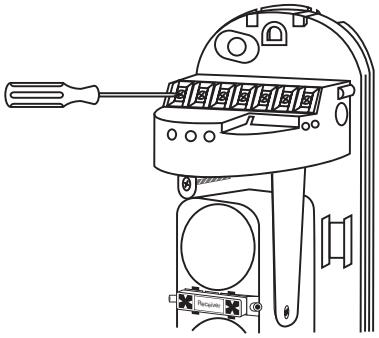
3. Remove the rubber knock-out and pull the wire through.



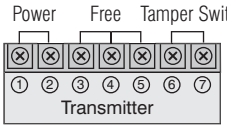
4. Mount the detector on the wall.



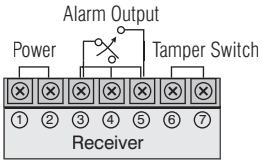
5. Connecting wires to the terminals



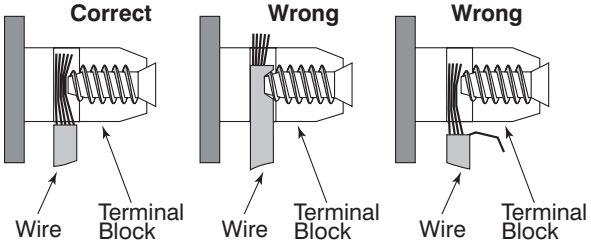
Transmitter Terminal Wiring Pattern



Receiver Terminal Wiring Pattern



- Wire with 22awg minimum
- 300 ft (91.4m) max length
- Be sure to capture the wire ends under the wire clamp plates.
- Avoid frayed ends on wires that might produce a short circuit.



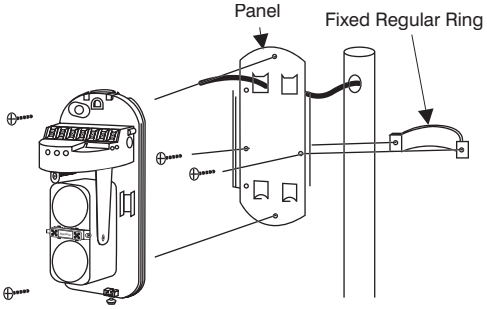
Pole Mounting

1. Break out the wire hole on the bracket then pull out the wires.

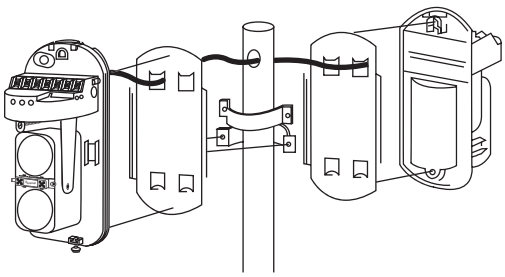
diameter of the bracket

2. Remove the cover.

3. Fix the base plate on the bracket.



• Back to back installation (Refer to the figure below.)



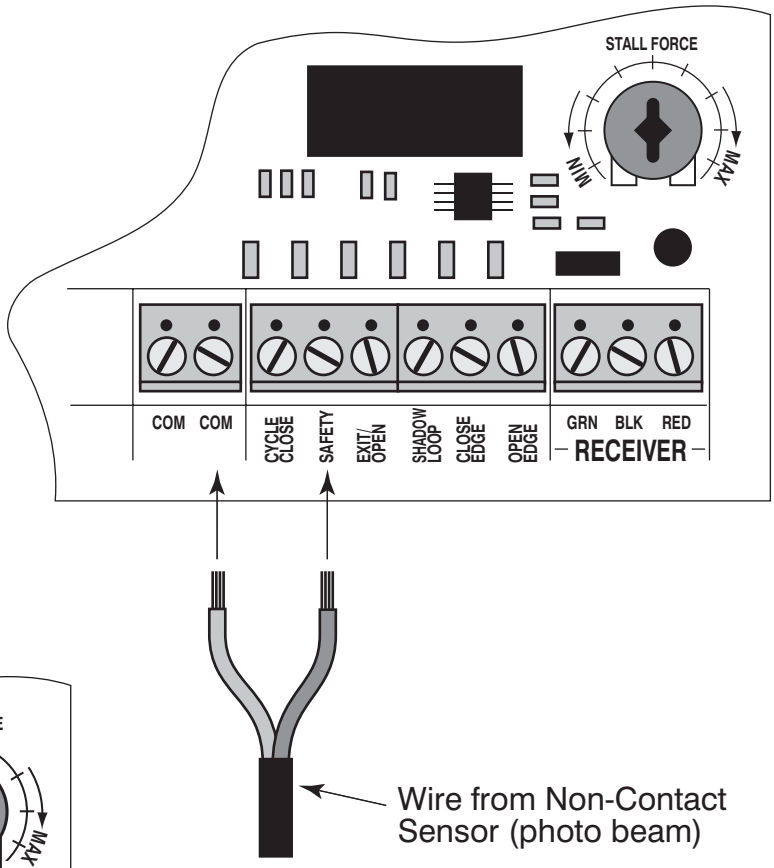
4 CONNECTING PHOTO BEAMS TO GTO CONTROL BOARDS

Make sure the power switch to the opener is turned off before connecting safety device wiring to the terminal blocks. Unplugging the transformer does not turn power to the opener OFF.

Non-Contact Sensor Connection:

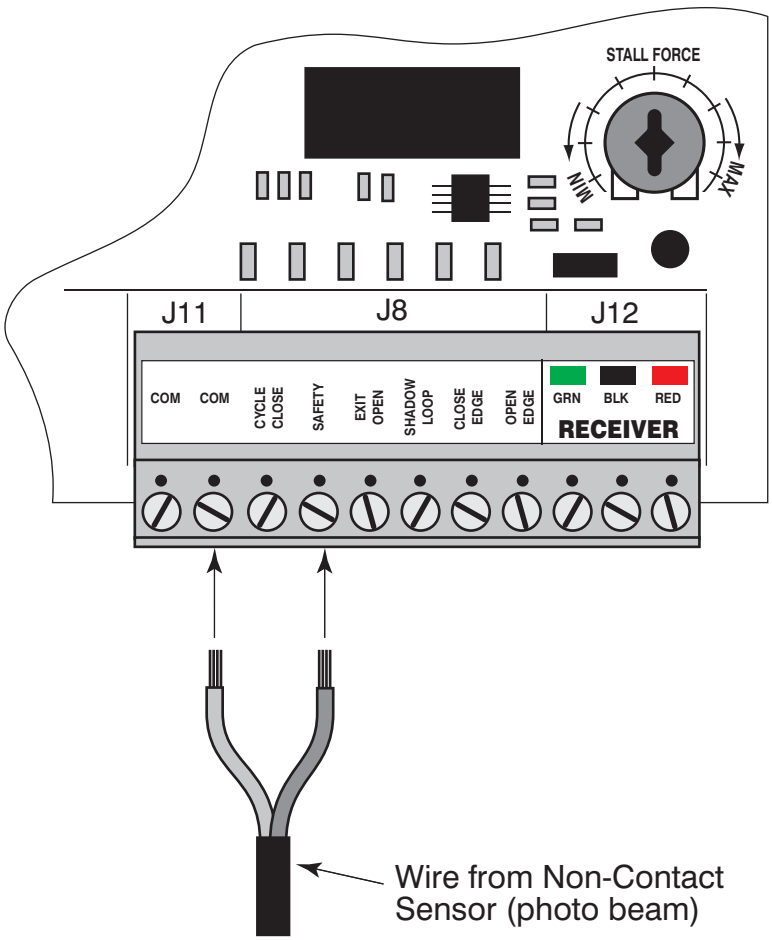
Connect one of the non-contact sensor dry contact output wires to the COMMON (COM) terminal and the other to the SAFETY terminal on the Mighty Mule® or the GTO/PRO® control board.

Mighty Mule Control Board



Wire from Non-Contact Sensor (photo beam)

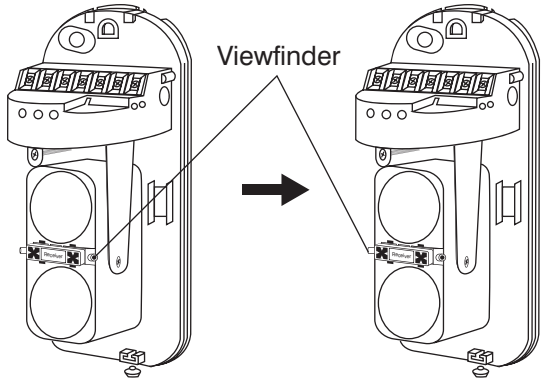
GTO/PRO Control Board



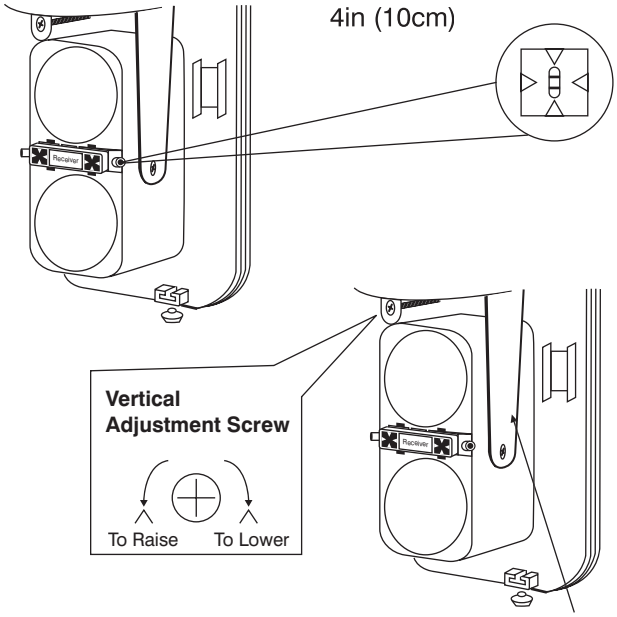
Wire from Non-Contact Sensor (photo beam)

BEAM ALIGNMENT

1. Remove the cover and turn ON power.



2. Observe the aiming effect of the aiming lens at 4in (10cm) on the right.



3. Adjust the horizontal pivot, and the vertical adjustment screw using the built-in viewer. Look through the peep hole on either side and adjust to put the oppposite sensor in the middle of the cross-hairs in the viewfinder. The GOOD indication lamp should be on. (Adjust the light axis continuously if the indication lamp is not on.)

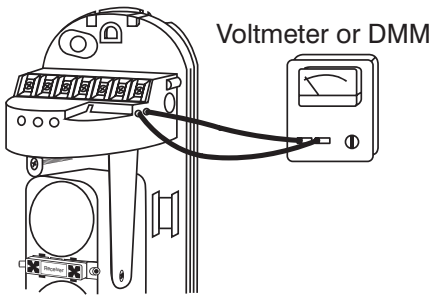
The brighter the red LEVEL indicator light, the higher the precision of the light axis.

• The best method of adjusting the optical axis is to measure the signal level at the test probe points.

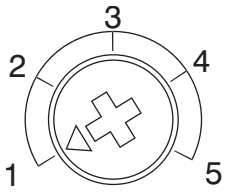
1. Insert the DMM probes into the test points on the side of the receiver.

2. Adjust the horizontal angle and vertical angle until the voltage is at maximum.

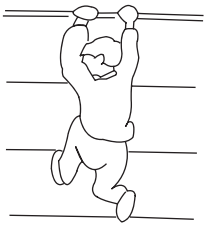
3. If 1.2v or above voltage cannot be reached, the transmitter and/or receiver should be readjusted.



BEAM INTERRUPTION TIME ADJUSTMENT



Response Time Adjustment

1	2	3	4
			
Fast running **20ft/s (6.9m/s)**	Fast walking with quick steps **4ft/s (1.2m/s)**	Normal walking **2.5ft/s (0.7m/s)**	Slow action **less than 2ft/s (0.3 - 0.5m/s)**

7 VERIFY CORRECT OPERATION

After installation, confirm correct operation by suitable walking tests. Refer to the appropriate LED indicator during the walking test.

	Condition	Indication
Transmitter	Transmitting	Green LED is ON
Receiver	Beam Clear	GOOD-LEVEL Indication
	Beam Blocked	Alarm indication lamp is ON

8 TROUBLESHOOTING

Symptom	Possible Cause	Remedy
Transmitter LED does not light.	Improper voltage supplied.	Check the power supply and wiring.
Receiver LED does not light.	Improper voltage supplied.	Check the power supply and wiring.
Alarm LED does not light, even when beams are blocked.	1. Beams reflect to the receiver by other objects. 2. Both beams are not blocked simultaneously. 3. Beam block time is too short.	1. Remove the reflecting object or change optical axis direction. 2. Block both beams. 3. Increase beam block time.
When the beams are blocked, the receiver LED light is ON, but not alarm.	1. Wiring is short circuited. 2. Wiring connection is not good.	Check wiring and connection spot.
The alarm indication lamp of receiver is always on.	1. Optical axis is not properly adjusted. 2. There are obstructions between the transmitter and the receiver. 3. The outer covers are dirty.	1. Adjust the optical axis. 2. Remove the obstructions. 3. Clean with window cleaner and a soft cloth.
Intermittent Alarm	1. Bad wiring. 2. Fluctuating power supply / voltage. 3. Intermittent blockage between the transmitter and the receiver. 4. The receiver or transmitter is unstable. 5. Blocked by other moving objects.	1. Check wiring. 2. Check the power supply. 3. Remove the obstruction or relocate. 4. Fix the mounting. 5. Adjust the optical axis. 6. Adjust interruption time or change installation position.

SPECIFICATIONS

Model		**R4222**
Detection Method		Infrared photoelectric
Range	Outdoor	98.4 ft (30m)
	Indoor	295.2 ft (90m)
Beam Characteristics		Pulsed infrared dual beams
Response Time		50~700msec (selectable)
Power Input		DC13.8~24V / AC11~18V
Current Consumption		40mA max
Output Pulse Duration		2Sec (±1)nominal
Alarm Output		Form C relay (AC/DC 30V 0.5A max)
Tamper Switch		N.C. Opens when cover is removed (receiver only)
Operating Temperature		-13˚F (-25˚C)~131˚F (55˚C)
Environment Humidity		95% max
Alignment Angle		±5˚ vertical, ±90˚ horizontal
Mounting		Wall or pole
Weight		.66lbs (300g) Both transmitter and receiver
Appearance		PC Resin (Black)