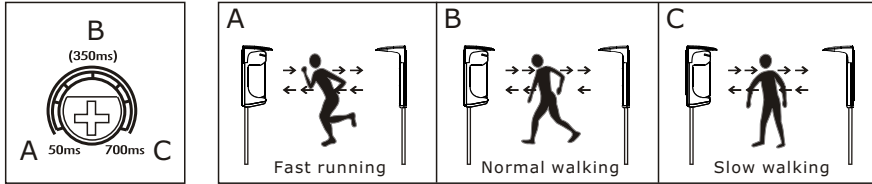


6.RESPONSE TIME

Adjust response time as follows. The unit does not detect the passing object faster than the response time set.
If the response time is set longer, the unit does not detect human beings.
Adjust to a little longer response time in a site where large passing objects, newspaper or carton box may move.



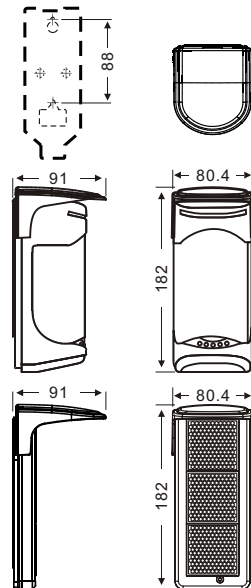
7.TROUBLESHOOTING

Trouble	Possible Origin(s)	Remedy(s)
Sensor LED does not light.	Incorrectly wired and/or insufficient voltage	Ensure the power supply to the sensor is 10 to 30 VDC.
Sensor LED never lights up when the beam is interrupted.	a. Insufficient voltage b. Beam reflected away from receiver c. Beams not simultaneously interrupted.	a. Double-check the voltage. b. Clean the cover. c. Check overall installation.
Beams interrupted and LED lights, but no alarm trigger.	Alarm trigger cable may be cut, or the relay contact stuck due to overloading.	Check the continuity of the wiring between the sensor and the alarm.
Alarm LED continuously lit.	a. Lenses out of alignment. b. Beam are blocked. c. Cover is foggy or dirty.	a. Realign the lenses. b. Remove any obstacles. c. Clean the cover.
Alarm trigger becomes erratic in bad weather.	Lenses out of alignment.	Check overall system installation. If still erratic, realign the lenses.
Frequent false triggers from leaves, bird, etc.	a. Too sensitive. b. Bad location.	a. Reduce the response time. b. Change the sensor and/or location.

8.SPECIFICATIONS

Model Number	PBR-15L	Light On: Normally Close Relay Output
	PBR-15D	Dark On: Normally Open Relay Output
Current Drain	PBR-15L	Beam Aligned: 90mA / Beam Broken: 70mA
	PBR-15D	Beam Aligned: 70mA / Beam Broken: 90mA
Input Volt.	AC/DC 12~250V	
Infrared Led	Red infrared led element/940 nm	
Detection Method	Retro-Reflective	
Contact capacity	N.O./N.C. Relay Output, 0.5A@120V (min. 1 sec.)	
Response time	50~700 msec.	
Delay time of relay	1,000 msec	
Sensing range	15 meters	
Volt. Output	1~6V	
Led indicators for beam alignment & Power	Yellow led Off: Beam aligned / Yellow led On: Beam broken Yellow led flash: Beam alignment signal weak (Re-align) Green led On: Power On	
Wiring connection	Terminal block/Cable gland (IP-66)	
Ingress Protection	IP-55	
Environment/Storage Temp.	-13° F ~ 131° F (-25° C ~ 55° C)	
Alignment angle	Horizontal: ± 90° / Vertical: ± 5°	
Weight	Sensor: 0.41 kgs Reflector with Hood: 0.25 kgs	
Dimensions	Sensor: 182(L) × 80.4(W) × 91(D)mm Reflector with Hood: 182(L) × 80.4(W) × 91(D)mm	

9.EXTERNAL DIMENSIONS



Unit: mm

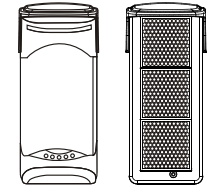
Full Range Input Voltage Retro-Reflective Photobeam Detector PBR-15L / PBR-15D

Features:

- Retro-Reflective photobeam detector
- Full Range input voltage (AC/DC 12~250V)
- Red infrared led element
- Long sensing range: 15 meters
- IP-55 water proof
- Hood for sensor & reflector pack
- Triple square shape reflector set
- Pole mounting bracket included.
- Power and beam alignment led indicators included.

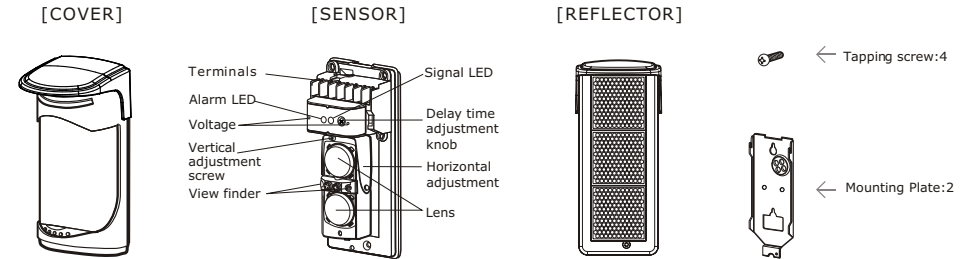
Applications:

- Gateopener
- Overhead door
- Swing gate
- Sliding door
- Parking lot
- Window
- Terrace
- Warehouse
- Perimeter protection
- Automation control



INSTALLATION MANUAL

1.PARTS DESCRIPTION



2.CAUTIONS ON INSTALLATION

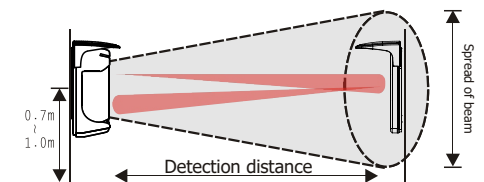
Do Not

- ◆ Remove all abstractions (trees, clothes, lines, etc.) between Sensor and Reflector.
- ◆ Avoid strong light from the sun, automobile headlights etc. directly shining on Sensor/Reflector. When strong light stays in optical axis for a long time, it does not cause malfunction but will affect the product life.
- ◆ Do not install the unit on places where it may be splashed by dirty water or direct sea spray.
- ◆ Do not install the unit on unsteady surfaces.

Expansion of beam

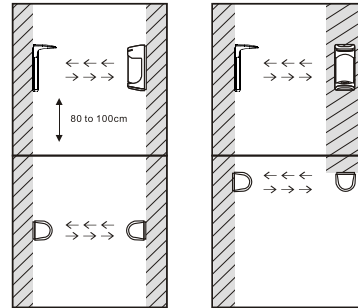
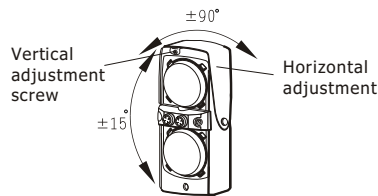
The protection distance (between Sensor / Reflector) should be placed in the rated range.

Model	Detection distance	Spread of beam
PBR-15	15m(49 ft.)	0.6m(2.0 ft.)



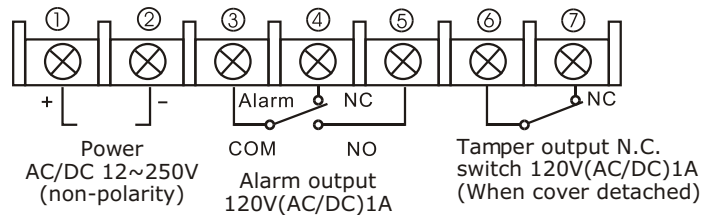
Position of installation

The photoelectric beam lens can be adjusted horizontally $\pm 90^\circ$, and vertically $\pm 15^\circ$. This allows much flexibility in terms of how the Sensor and Reflector can be mounted. Install at a distance of 32" to 39" (80 to 100cm) above the ground for most situations.



3. WIRING

Wiring



Running the Cable

Run a cable from the alarm control panel to the photobeam sensor. If burying the cable is required, make sure to use electrical conduit. Shielded cables strongly suggested. See table 1 for maximum cable length.

Note(1): Max.cable length when two or more sets are connected is the value shown in Table 1 divided by the number of sets.

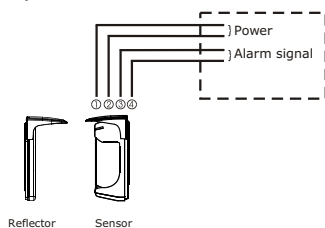
Note(2): The power line be wired to a distance of up to 3,300 ft.(1,000m) with AWG22(0.33mm) telephone wire.

Table1: Cable Length

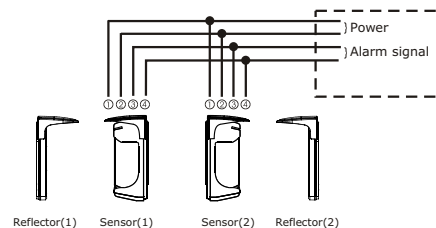
Model No.	PBR-15	
Wire/Volt.	12V	24V
AWG22	340m	3,000m
AWG20	575m	5,100m
AWG18	900m	7,920m
AWG16	1,090m	10,400m

Connection

◆ Example connection 1 - Standard



◆ Example connection 2 - In-line Single Channel

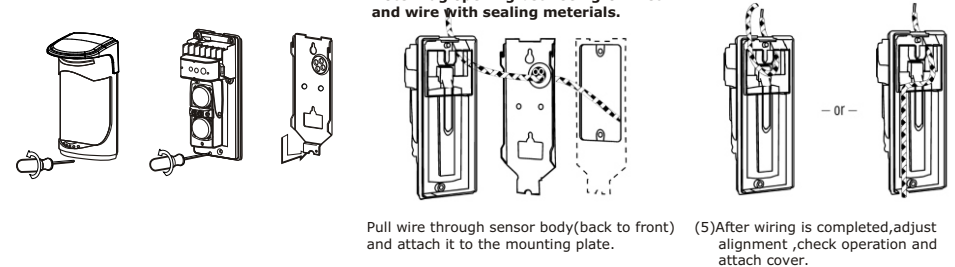


4. INSTALLATION METHOD

Wall Mount

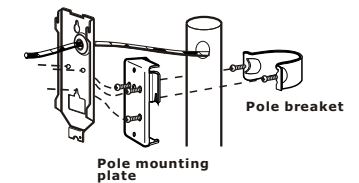
- (1) Loosen the cover locking screw and remove the cover. Loosen the unit setting screw at lower part of unit base. Slide the mounting plate downwards and remove it.
- (2) Pull wire through on the installation site.
- (3) Break grommet on mounting plate and pull wire through it. Secure the plate with 4mm screws.
- (4) When exposed wired break knockouts (2 positions) on the rear of unit, pull wire through as the figure and attach it to the mounting plate.

Note: Plug opening between grommet and wire with sealing materials.



Pole Mount

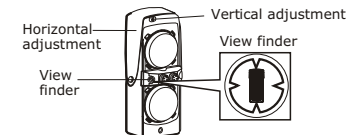
- (1) Use dia 38mm to 45mm pole.
- (2) Insert 2 pcs. of oval countersunk head screws (M4x20) in a pole bracket with a few rotation.
- (3) Fix pole mounting plate to pole with pole bracket.
- (4) Detach cover, and remove mounting plate from sensor body.
- (5) Temporarily insert 2 pcs of M4x10 screws in pole mounting plate and fix sensor, mounting plate on them.
- (6) Do the same procedure as (3)-(5) of wall mount.



5. ALIGNMENT AND OPERATION

Eyeball adjustment

- (1) Remove the sensor cover, and look into one of the alignment viewfinders (one of the four holes located between to two lenses) at a 45 angle.
- (2) Adjust the horizontal angle of the lens vertically and horizontally until the reflector is clearly seen in the viewfinder.
- (3) Replace the sensor covers.



NOTE: If you cannot see the opposite unit in the viewfinder, put a sheet of white paper near the unit to be seen.

Fine Tuning the Receiver

- (1) Once the sensor is mounted and aligned, the sensor can be fine tuned using the voltage output jack.
- (2) Set the range of a volt-ohm meter (VOM) to 0~10VDC.
- (3) Measure the voltage.
- (4) Adjust the horizontal angle by hand until the VOM indicates the highest voltage.
- (5) Adjust the vertical angle by turning the vertical adjustment screw until the VOM indicates the highest voltage.

Voltage output	Alignment quality
> 2.8V	Best
2.0~2.7V	Good
1.2~1.9V	Fair
< 1.1V	Re-adjust

