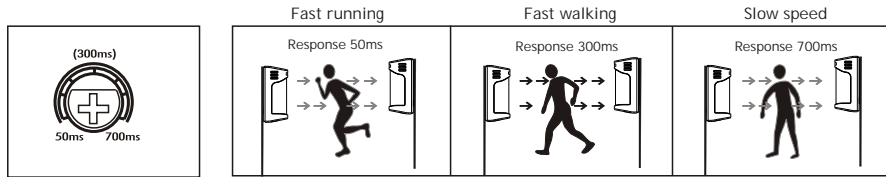


6. RESPONSE TIME

Adjust response time as follows. The unit does not detect the passing objects 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.



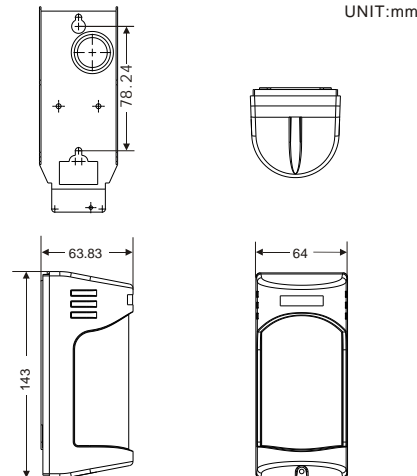
7. TROUBLESHOOTING

Trouble	Possible Origin(s)	Remedy(s)
Transmitter LED does not light.	Incorrectly wired and/or insufficient voltage	Ensure the power supply to the transmitter is 10 to 30 VDC.
Receiver 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 transmitter and/or location.

8. SPECIFICATIONS

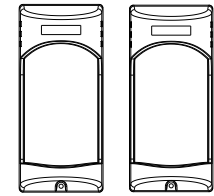
Model	MPB-10HD	MPB-15HD	MPB-20HD	MPB-25HD	MPB-30HD
Max. range(outdoor)	10m(33')	15m(50')	20m(66')	25m(82')	30m(100')
Max. range(indoor)	20m(66')	30m(100')	40m(132')	50m(164')	60m(200')
Power	10~30VDC(Non-polarity)				
Current	40mA(max)				
Detection system	50~700msec(variable)				
Alarm output	Contact capacity: NC, NO. 1A/120VAC				
Tamper output (Tx & Rx)	NC switch, 1A/120VAC				
Alarm LED (Receiver)	Red LED -ON: When transmitter and receiver are not aligned or when beam is broken.				
Signal LED (Receiver)	Yellow LED -ON: When receiver's signal is weak or when beam is broken.				
Power LED (Receiver and Transmitter)	Green LED -ON: Indicates connected to power.				
IP Rating	IP-55				
Alignment angle	Horizontal: $\pm 90^\circ$, Vertical: $\pm 15^\circ$				
Operating temperature	-23°F(-25°C) to +131°F(+55°C)				
Weight	611g				
Case	PC Resin				

9. EXTERNAL DIMENSIONS



Twin Photoelectric Beam Sensors

MPB-10HD/15HD/20HD/25HD/30HD



INSTALLATION MANUAL

Features:

Range—

MPB - 10HD : Outdoor 33ft.(10m) , Indoor 66ft.(20m)

MPB - 15HD : Outdoor 50ft.(15m) , Indoor 100ft.(30m)

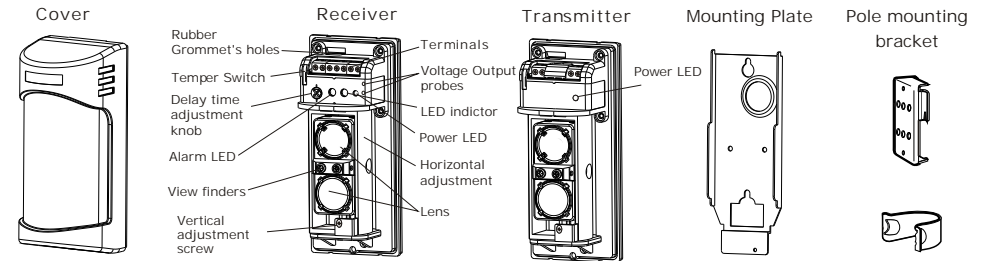
MPB - 20HD : Outdoor 66ft.(20m) , Indoor 132ft.(40m)

MPB - 25HD : Outdoor 82ft.(25m) , Indoor 164ft.(50m)

MPB - 30HD : Outdoor 100ft.(30m), Indoor 200ft.(60m)

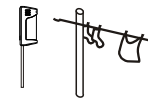
- Twin beam provide reliable perimeter security minimizing false alarms from falling leaves, birds, etc.
- Lensed optics reinforce beam strength and provide excellent immunity to false alarms due to rain, snow, mist, etc.
- Weatherproof, sunlight-filtering case for indoor and outdoor use.
- Automatic input power filtering with special noise rejection circuitry.
- N.C./N.O. Alarm output.
- Anti-frost system so that beam functions even in extreme conditions.
- N.C. Tamper circuit included.

1. PARTS DESCRIPTION

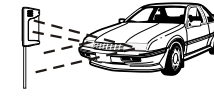


2. CAUTIONS ON INSTALLATION

Do Not



- ◆ Remove all obstructions (trees, clothes, lines, etc.) between Transmitter and Receiver.



- ◆ Avoid strong light from the sun, automobile headlights etc. directly shining on Transmitter/Receiver. 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.

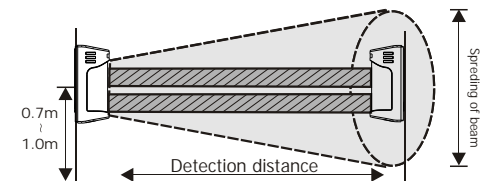


- ◆ Do not install the unit on unsteady surfaces.

Expansion of beam

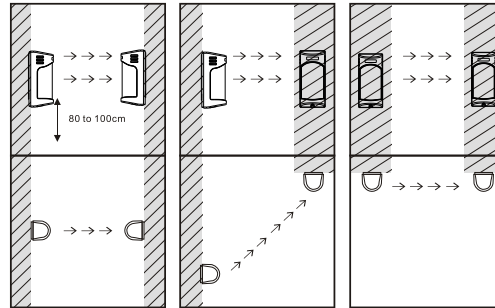
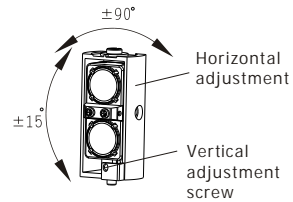
The protection distance (between Transmitter /Receiver) should be placed in the rated range.

Model	Detection distance	Spreading of beam
MPB-10HD	33'(10m)	1'0"(0.3m)
MPB-15HD	50'(15m)	1'5"(0.45m)
MPB-20HD	66'(20m)	2'0"(0.6m)
MPB-25HD	82'(25m)	2'5"(0.75m)
MPB-30HD	100'(30m)	3'0"(0.9m)



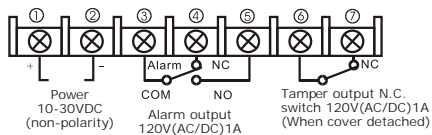
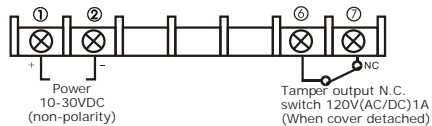
Position of installation

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 transmitter and receiver can be mounted. Install at a distance of 32" to 39" (80 to 100cm) above the ground for most situations.



3. WIRING

Wiring



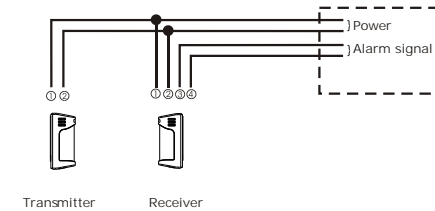
Running the Cable

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 cable is strongly suggested. See table 1 for maximum cable length.

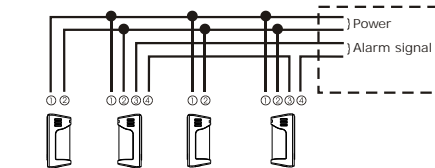
Model No.	MPB-10HD/15HD/20HD/25HD/30HD	
Wire/Volt.	12V	24V
AWG22(0.65mm)	1050'(320m)	9200'(2800m)
AWG20(0.8mm)	1805'(550m)	15750'(4800m)
AWG18(1.0mm)	2625'(800m)	23625'(7200m)
AWG17(1.1mm)	3215'(980m)	28870'(8800m)

Connection

◆ Example connection 1 - Standard

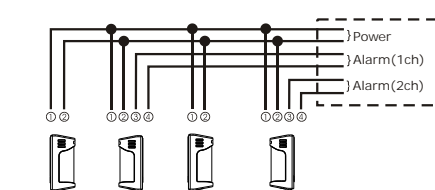


◆ Example connection 2 - In-line Single Channel



Transmitter Receiver Transmitter Receiver

◆ Example connection 2 - Dual Sensors, Separate Channels



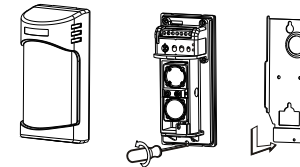
Transmitter Receiver Transmitter Receiver

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.

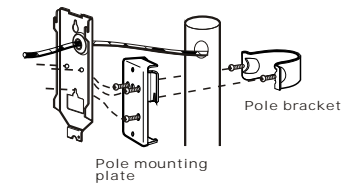


Pull wire through sensor body (back to front) and attach it to the mounting plate.

(5) After wiring is completed, adjust alignment, check operation and attach cover.

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 procedures as (3)-(5) of wall mount.

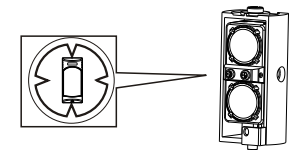


5. ALIGNMENT AND OPERATION

Eyeball adjustment

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

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



Alarm and signal LEDs	Signal strength
Two LEDs OFF	Best
One LED ON	Good
Two LEDs ON	Re-adjust

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
3.4~5V	Best
1.15~3.4V	Good
1.0~1.15V	Fair
<1.0V	Re-adjust

