

# PHOTOELECTRIC BEAM DETECTOR

## INSTALLATION GUIDE



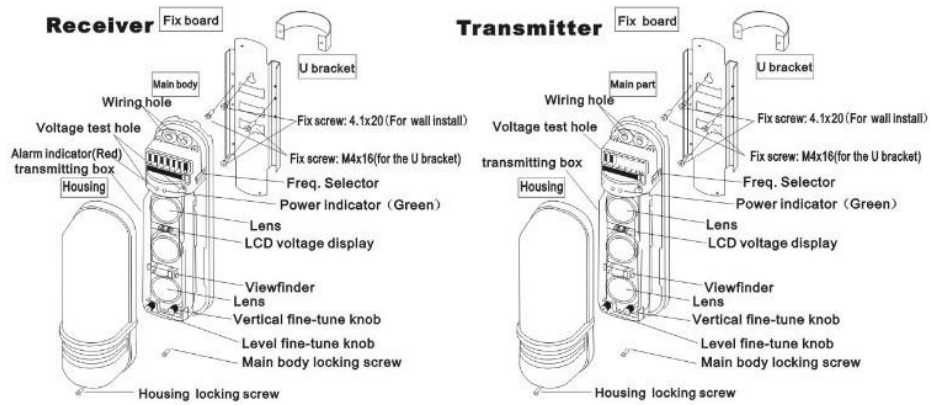
WL-SG- 50E/RE(50m)  
WL-SG-100E/RE(100m)  
WL-SG-150E/RE(150m)  
WL-SG-200E/RE(200m)  
WL-SG-250E/RE(250m)

**⚠ Caution:** Thanks for your purchasing this product; please read this manual carefully before using.

This product can sense illegal inbreaking and give the alarm, but it can not prevent the burglary and other

1. Our company will not be responsible for the losses caused by negligence, abuse, natural disaster, lightning or use not in accordance with the user's manual.
2. There are copyright contents of our company in this user's manual, so you may not copy without our company's permission, meanwhile, please keep it properly.
3. The guarantee period is 12 months since production date.
4. Our company will be responsible for repairing or replacing the damaged parts caused by product quality within the period of guarantee. This warranty does not cover the other damages or following provisions.
  - Damages caused by improper use
  - Damages caused by repair or replacement of our company
  - Damages caused by natural disaster etc force majeure factor.
  - Malfunctions unrelated to this product.

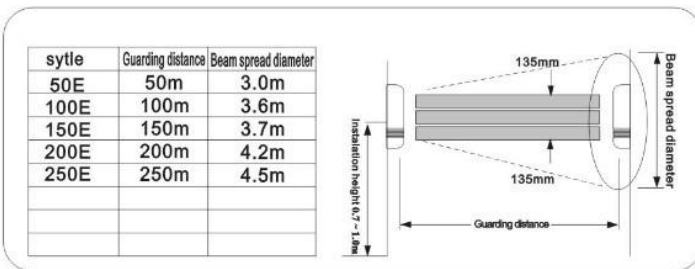
# 1. Part Name



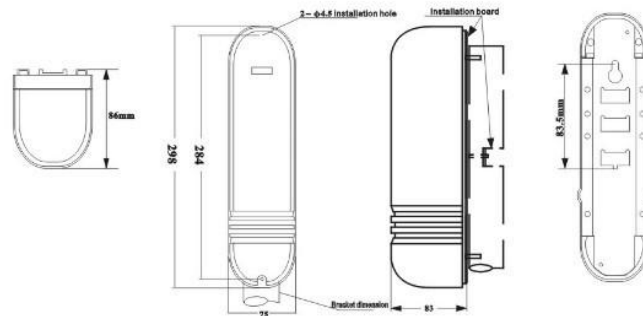
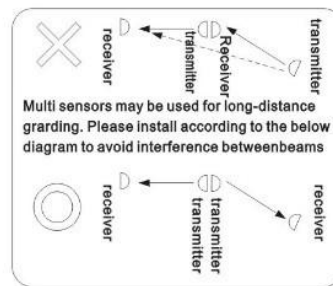
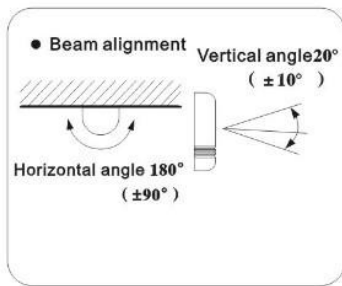
2

# 2. Precautions for setting

- Multi sensors may be used for long-distance guarding. Please install according to the below diagram to avoid interference between beams.

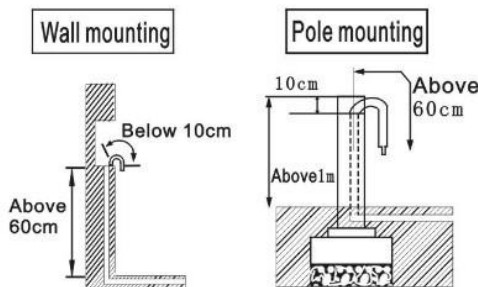


3



4

### 3. Installation environment



- 1) Select a suitable position with sufficient strength for the installation of both transmitter and receiver.
- 2) Wall installation: Install wiring closet or line terminal over 0.6 meter off ground, the wiring length is about 15cm. When mounting the wiring into the wall, the distance between the wiring closet and the bottom of the detector cover shall be over 1cm.
- 3) Pole installation: The height of pole shall be over 1m, open a wire hole about 10cm at the upper of the pole, the wiring length is about 60cm.
- 4) Select face to face for installation of both transmitter and receiver, which is easy to adjust the optical axis.
- 5) Overhead wiring is not allowed.

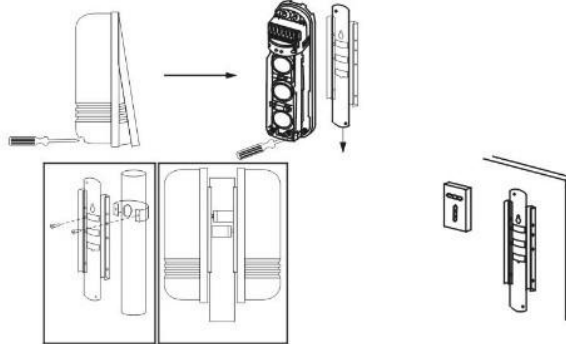
Wire size	Voltage	DC 12V		DC 24V	
		50E	100E/150E/200E/250E	50E	100E/150E/200E/250E
φ 0.65 (52Ω/km)		250m	227m	4136m	1577m
φ 1.0 (22Ω/km)		591m	536m	4136m	3727m
AWG16 (15.6Ω/km)		813m	756m	5833m	5256m
AWG22 (62.5Ω/km)		208m	189m	1456m	1312m

Caution: The wiring length as shown above divided by the quantity of detector when connecting one wiring to two detectors and above.

- 6) It must be equipped with protective sleeve for outdoor wiring part.
- 7) The wiring length from the power supply to the detector body should be controlled within the distance as shown in left form (calculate the wiring distance according to the maximum current consumption of transmitter + receiver), when connecting multiple probes with one wiring, the value listed in the left form divided by the quantity of probe is the wiring length.

## 4. Installation of fixed bracket

1. Loose the retaining screws on the cover and remove the cover. (As below diagram).
2. Loose the retaining screws on the mounting plate, then remove the mounting plate and do not touch the sensitive lens by hand, mount the mounting plate on the pole or wall. (As below diagram)



### Pole mounting

- It can be installed through M4×16 screws and the pole with  $\phi$  38-45 external diameter as above figure, please use the pole with bigger external diameter if the screws are lengthened; When installing two detectors on the same pole (back to back), please offset the U-shaped clamp of mounting plate as shown above so that the height of installation of two detectors can be same.

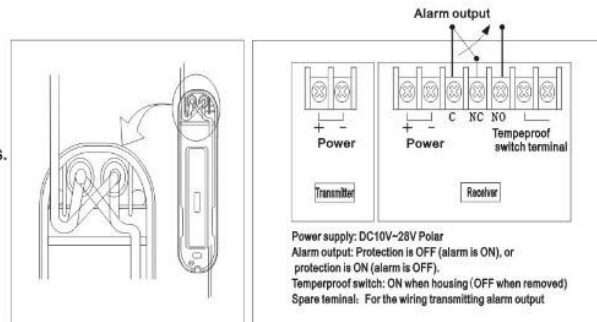
6

### Wall mounting

- It can be installed through screws (2 pcs) as shown in the figure; please use level instrument to ensure it is perpendicular to the floor.

## 5. Wiring

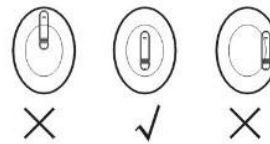
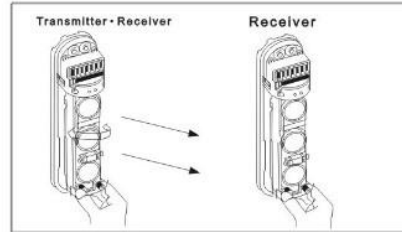
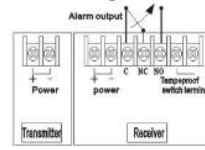
Wall mounting is same as pole mounting, firstly do make sure that the mounting plate is tightened, put the wiring through the body and mounting plate as shown in figure, and then tighten the retaining screws.



## 6. Optical axis adjustment

Note: Perform the optical axis adjustment for the transmitter and receiver due to the alignment of optical axis may bring a great change to sensitivity.

1. Do make sure that the wiring of transmitter and receiver is correct and option switch is correct and turn on the power supply.
2. Rotate the bottom of lens on the receiver from left to right to ensure that the lens shall face to the transmitter correctly.
3. Rotate the bottom of lens on the transmitter from left to right to ensure that the lens shall face to the receiver correctly, align the optical axis to obtain sensitivity, secure the lens on the transmitter after aiming the transmitter towards the receiver through aiming unit.
4. Adjust the horizontal adjusting knob and vertical adjusting knob on the transmitter until you can see the receiver is located on the central position of aiming unit of transmitter through the aiming unit of transmitter. .
5. Adjust the horizontal adjusting knob and vertical adjusting knob on the transmitter until you can see the transmitter is located on the central position of aiming unit of receiver through the aiming unit of receiver.



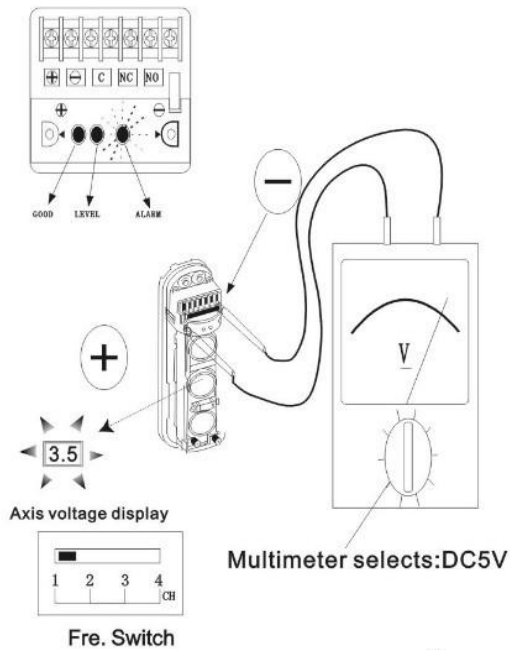
8

6. The maximum sensitivity of detector can be judged and confirmed through the conditions of environment indicator on the receiver.

- ① LEVEL indicator (Red): brightness varies as the different precision of beams alignment.
- ② ALARM (alarm indicator) is ON when giving an alarm
- ③ GOOD indicator (green) is ON when optical axis

7. Insert the test pen into the test hole (Please note the +,- polarity)  
First adjust the horizontal angle until the test hole voltage output maximize.  
Then adjust the vertical angle by the same way till the output voltage reaches the maximize.  
To enhance the precision, adjust and test the voltage by blocking the upper and the lower lens separately until they have the same voltage.

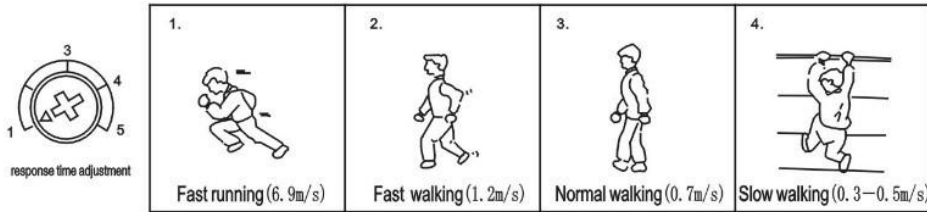
8. Adjust the beam frequency of transmitter and receiver to the same channel.



9

## 7. Beam response time adjustment

Please see the diagram to adjust the response time of the receiver. Usually, the time set shall be less than the time when the intruder crosses the guarding area.



## 8. Physical test

Walking test is required after the setting, physical test in accordance to below diagram.

	State	Signal
Transmitter	Transmitting	The 2 indicators of green LED light up
Receiver	Guarding	GOOD LEVEL indicators light up
	In alarm	The red ALARM indicator light up

10

## 9. Trouble checking

Fault	Cause	Solution
The LED of the transmitter doesn't light up	Power failure (open circuit, short-circuit, etc.)	Check the power wiring
The LED of the receiver doesn't light up	Power failure (open circuit, short-circuit, etc.)	Check the power wiring
The LED of the receiver doesn't light up when the light is blocked	<ol style="list-style-type: none"> <li>① By reflecting, or light from other sources enter the receiver</li> <li>② Both beams are not blocked at the same time</li> <li>③ Response time is set too short</li> </ol>	<ol style="list-style-type: none"> <li>① Remove the reflecting object or change the direction of beam</li> <li>② Block both beams at the same time</li> <li>③ Prolong the response time</li> </ol>
The receiver alarm indicator ON after the beam is blocked. But there is no alarm signal output	<ol style="list-style-type: none"> <li>① Broken circuit or short-circuit of the wiring</li> <li>② Poor contact</li> </ol>	<ol style="list-style-type: none"> <li>① Check the wiring and contact</li> <li>② Connect the cable</li> </ol>
The alarm indicator of the receiver is constantly ON.	<ol style="list-style-type: none"> <li>① The beam doesn't match closely</li> <li>② There is obstacle presents between the transmitter and the receiver</li> <li>③ The beam doesn't match closely</li> </ol>	<ol style="list-style-type: none"> <li>① Re-adjust the beam</li> <li>② Remove the obstacle</li> <li>③ Clear the cover</li> </ol>
Intermittent alarm signal output	<ol style="list-style-type: none"> <li>① Improper wiring</li> <li>② The supply voltage does not reach 13V or higher</li> <li>③ The potential obstacle appears to block the beams due to the effect of wind and rain</li> <li>④ The installation base unstable</li> <li>⑤ The installation base unstable</li> <li>⑥ Beams blocked by other moving objects</li> </ol>	<ol style="list-style-type: none"> <li>① Check the wiring</li> <li>② Clear the supply power</li> <li>③ Remove the obstacle or change the location</li> <li>④ Select a site with a stable base</li> <li>⑤ Re-adjust the optical axis</li> <li>⑥ Adjust the shade time or change the install</li> </ol>

## 10. Technical parameters

Model		50E/RE	100E/RE	150E/RE	200E/RE	250E/RE			
Alert distance	(Outdoor)	50m	100m	150m	200m	250m			
	(Indoor)	150m	300m	450m	600m	750m			
Maximum distance		560m	1100m	1600m	2100m	2600m			
No. Of beams	3 beams								
Detection mode	3 beams blocked simultaneous								
Optical source	Infrared digital pulse beam								
Response speed	50~700msec								
Alarm output	Relay contact output: NO. NC contact rating: AC/DC30V 0.5A Max								
Power supply	DC13.8~24V AC11~18V P 15W								
Power consumption	55mA max.	65mA max.	70mA max.	75mA max.	80mA max.				
Operation temperature&humidity	-25℃~55℃ 5%~95%RH(relative humidity)								
Dimensions	Refer to its diagram								
Temper output	0~700msec								
Optical axis adjustment(H)	180° (± 90° )								
Optical axis adjustment(V)	20° (± 10°)								
Protection against dew, frost	Calcification housing(optional)								
Material	ABS Resin								
Net weight	930g(transmitter + receiver)								
Gross	1435g								