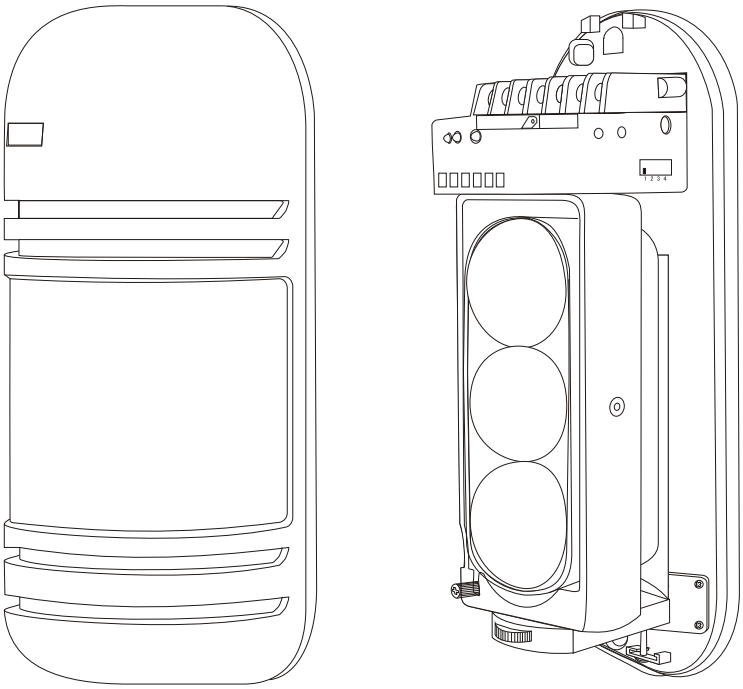
SAE 3 BEAMS ACTIVE PHOTOELECTRIC DETECTOR WITH DIGITAL FREQUENCY CONVERSION

INSTALLATION GUIDE



Model:

SAE-50 (Outdoor 50m, Indoor 150m)

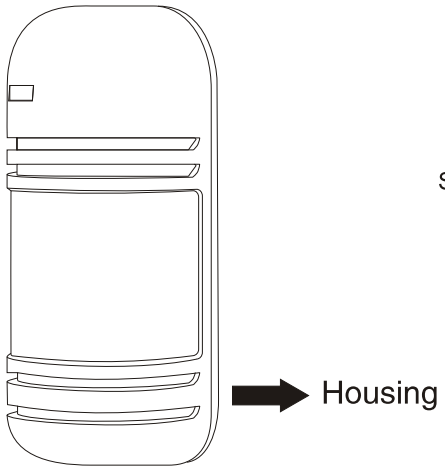
SAE-100 (Outdoor 100m, Indoor 300m)

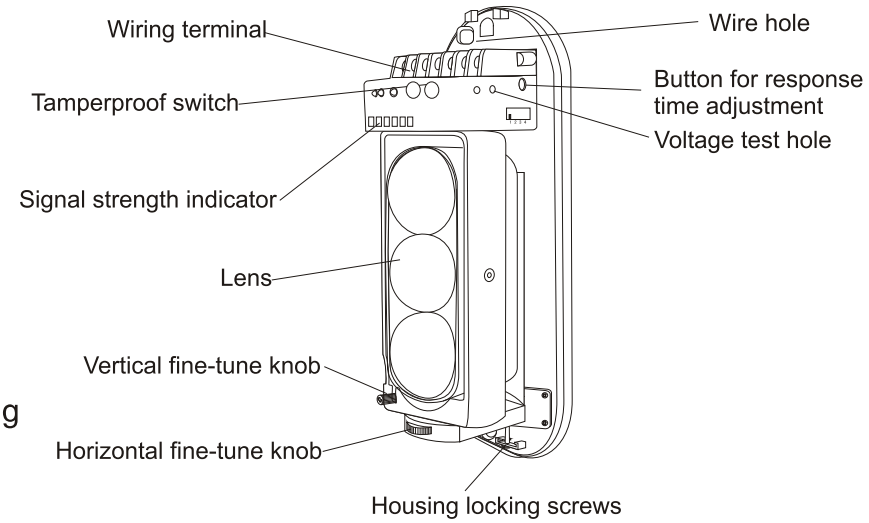
SAE-150 (Outdoor 150m, Indoor 450m)

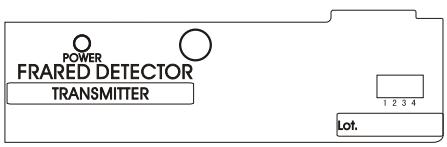
SAE-200 (Outdoor 200m, Indoor 600m)

SAE-250 (Outdoor 250m, Indoor 750m)

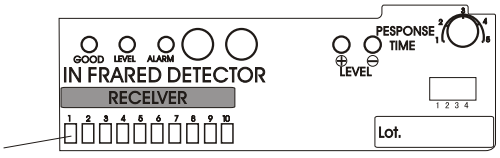
I. Part Name





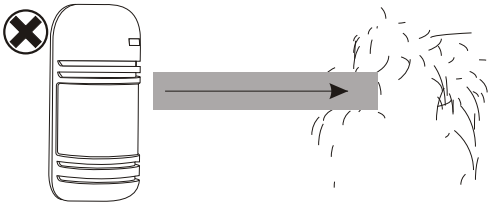


Signal strength receiving indicator. In the diagram, after adjustment of the beam, the level 5 shall light up. Otherwise, adjust again. It is strongly recommended that it should be adjusted to the point until level 7 or higher lights up.

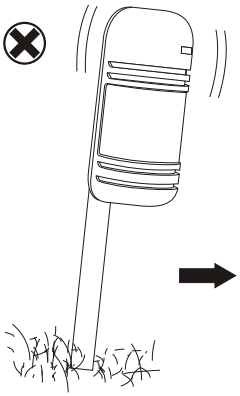


- Power transmit indicator
- LEVEL: Indicators turns on when the beam align presents. Specific alignment accuracy refer to signal strength receiving indicator.
- ALARM: The indicator turns on when alarm presents.
- GOOD: The green indicator turns on when the beam aligns with the receiver. If fails to align, the indicator will OFF.

Ⅱ. Precautions for setting

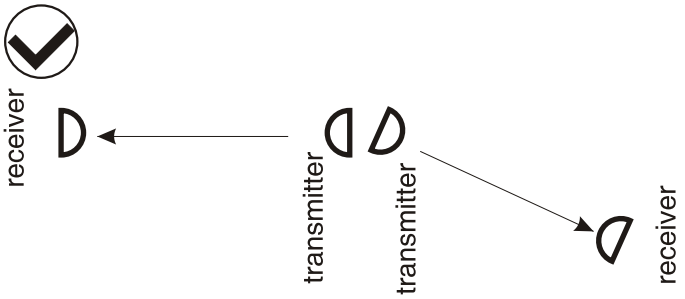


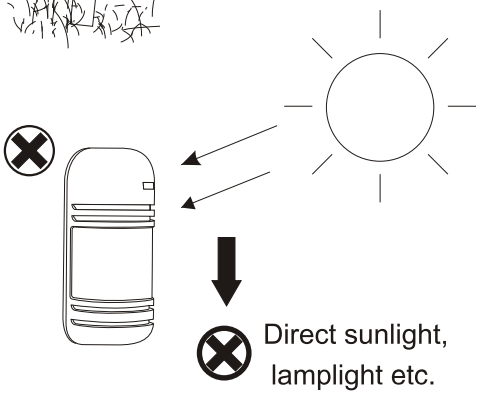
Impediment presents during setup



The base is unstable

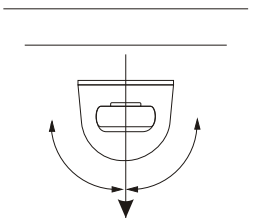
Multi sensors may be used for long-distance guarding. Please install according to the below diagram to avoid interference between beams.



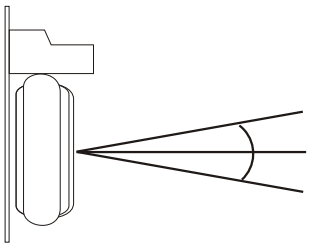


Direct sunlight, lamplight etc.

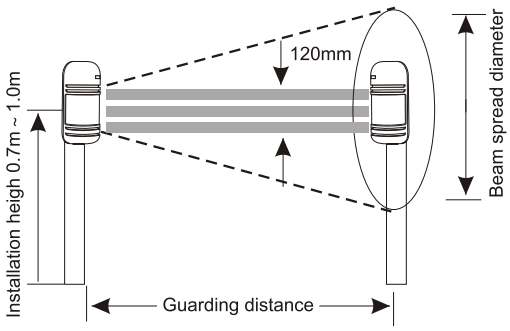
●Adjustable angle: horizontal±90°
vertical±10°



Horizontal 180° (±90°)



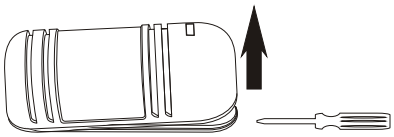
Vertical ±10°



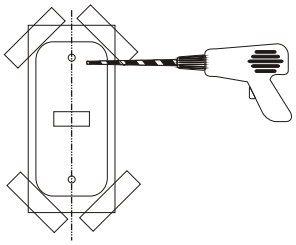
Style	Guarding distance	Beam spread diameter
SAE-50	50m	1.5m
SAE-100	100m	3.0m
SAE-150	150m	4.5m
SAE-200	200m	6.0m
SAE-250	250m	7.5m

ⅢSetting procedure

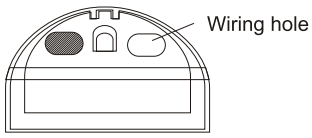
1.Remove the cover



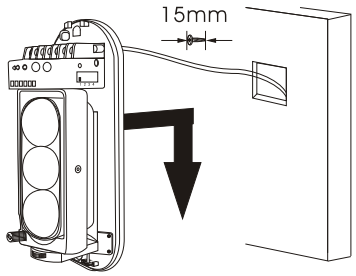
2.Attach the paper stencil onto the location where the equipment is to be mounted, and drill the holes in the positions on its mark.



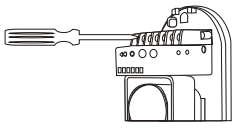
3.Put the cable through the hole for wiring.

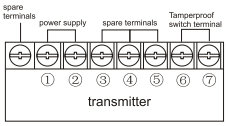


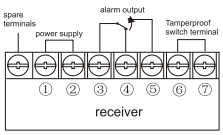
4.Fix the main body onto the wall



5.Connect the cable to the wire terminal.



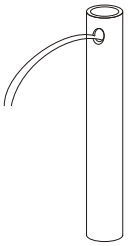




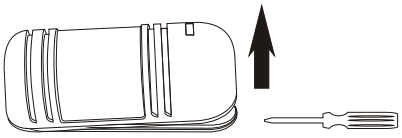
6.Put on the cover after adjusting the response time of the beam.

● Installation of fixed bracket

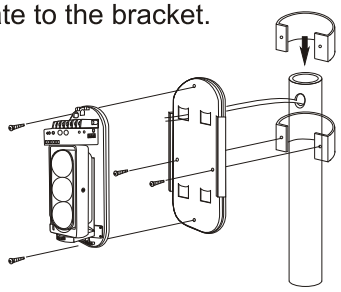
1.Drill a hole on the bracket and extend out the cable from it.



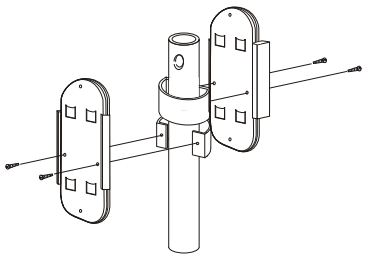
2.Remove the cover.



3.Fasten the base-plate to the bracket.



(Back-to-back installation guiding diagram)



Wiring distance between transmitter and receiver

wire size \ voltage / distance	DC13.8V	DC18V
0.5mm²(φ0.8)	300m	300m
0.75mm²(φ1.0)	400m	600m
1.25mm²(φ1.2)	700m	1000m
2.0mm²(φ1.6)	1000m	1500m

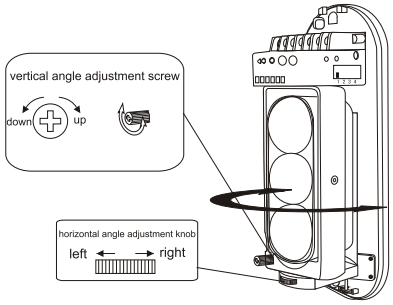
ⅣBeam alignment

Visual test method

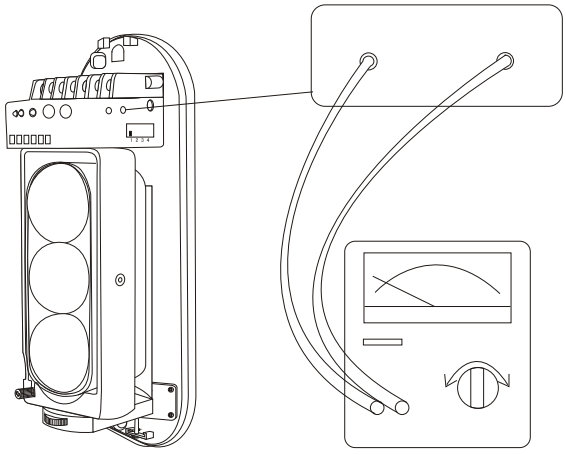
1.Remove the cover and connect power.

2.Adjust the vertical adjustment screw and the horizontal

angle adjusting wheel, the signal strength indicator will light up step by step, adjust until level 5 or higher indicator lights up. If not, adjust it again.



Note the more the signal strength indicator lights up, the higher the beam alignment is.

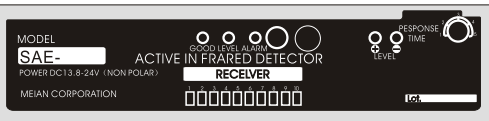


Multimeter selects DC 10V

Voltage test method

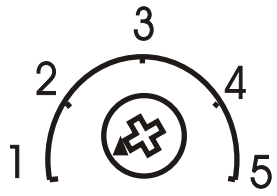
1.Insert the test pen into the test hole (please note the +,- polarity)
2.First adjust the horizontal angle until the test hole voltage output maximize. Then adjust the vertical angle by the same way.

Note

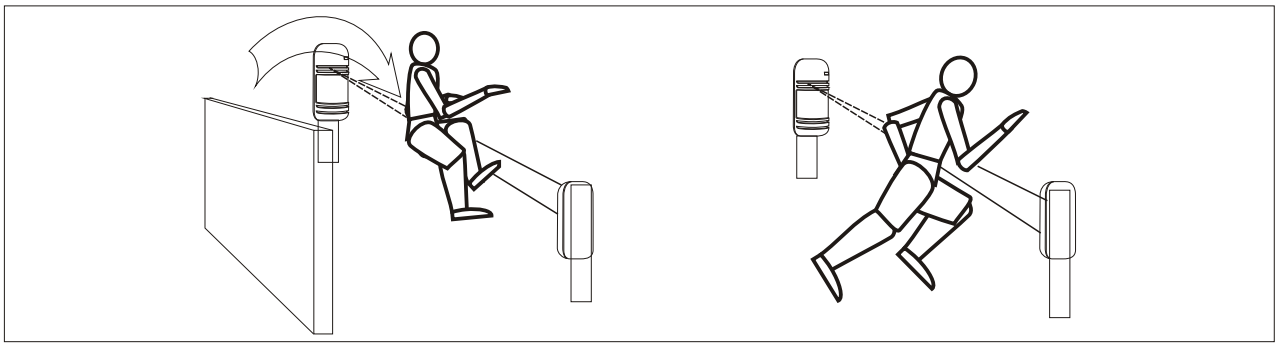


In the diagram, after adjustment of the beam, the level 5 of the reception/transmission LED shall light up. Otherwise, adjust again. It is strongly recommended that it should be adjusted to the point until level 7 or higher lights up.

ⅤBeam response time adjustment

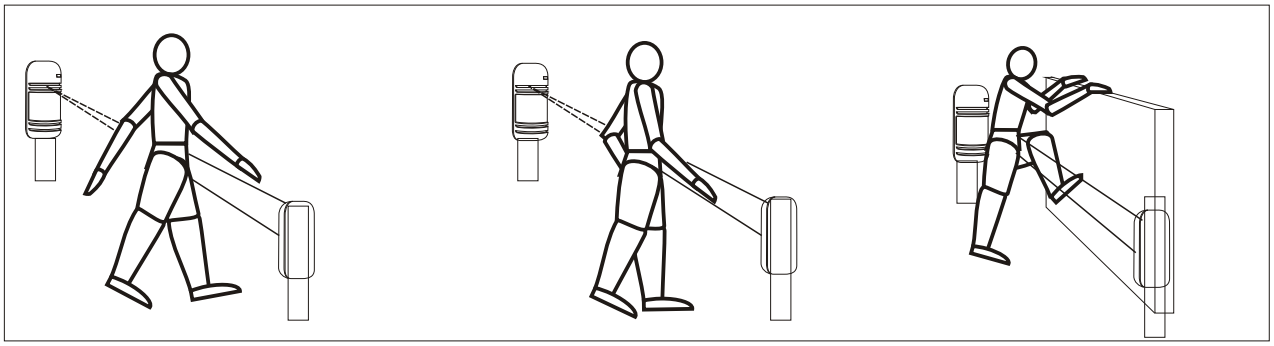


Please see the diagram to adjust the response time of the receiver. Usually, the time set shall be less than the time when the intruder crosses the guarding area.



High speed:1 Fast running(6.9m/s):2

Fast walking(1.2m/s):3 Normal walking(0.7m/s):4 Slow walking(0.4m/s):5



ⅥPhysical 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

Ⅶ. Trouble checking

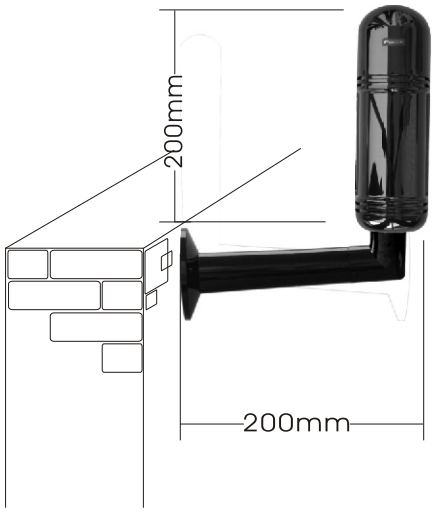
Fault	Cause	Solution
The LED of the transmitter doesn't light up	Power failure (open circuit, short–circuit, etc.)	Check the power wiring
The LED of the receiver doesn't light up	Power failure (open circuit, short–circuit, etc.)	Check the power wiring
The LED of the receiver doesn't light up when the light is blocked	1.By reflecting, or light from other sources enter the receiver 2.Both beams are not blocked at the same time 3.Response time is set too short	1.Remove the reflecting object or change the direction of beam 2. Block both beams at the same time 3.Prolong the response time
The receiver alarm indicator ON after the beam is blocked, but there is NO alarm signal output	1.Broken circuit or short–circuit of the wiring 2.Poor contact	1.Check the wiring and contact 2.Connect the cable
The alarm indicator of the receiver is constantly ON.	1.The beam doesn't match closely 2.There is obstacle presents between the transmitter and the receiver 3.The cover is polluted.	1.Re–adjust the beam 2.Remove the obstacle 3.Clear the cover
Intermittent alarm signal output	1.Improper wiring 2.The supply voltage does not reach 13V or higher 3.The potential obstacle appears to block the beams due to the effect of wind and rain 4.The installation base unstable 5.The beam coincidence accuracy is inadequate 6.Beams blocked by other moving objects 7.Response time too short 8.Level 5 LED does not light up before the cover is put on	1.Check the wiring 2.Check the supply power 3.Remove the obstacle or change the location 4.Select a site with a stable base 5.Re–adjust the optical axis 6.Adjust the shade time or change the install location 7.Re–adjust the response time 8.Re–adjust the optical axis, and make the signal reception reaches its top.

Ⅷ Technical parameters:

Model		SAE-50	SAE-100	SAE-150	SAE-200	SAE-250
Alert distance	Outdoor	50m	100m	150m	200m	250m
	Indoor	150m	300m	450m	600m	750m
No. of beams		3 beams				
Detection mode		3 beams blocked simultaneous				
Optical source		Infrared digital pulse beam				
Response speed		50 ~ 700msec adjustable				
Alarm output		Relay contact output: NO. NC contact rating: AC/DC30V 0.5AMax				
Power supply		DC13.8 ~ 18V P≥15W				
Power consumption		70mAmax	80mAmax	90mAmax	100mAmax	
Operation temperature & humidity		–25℃–55℃ 5%–95%RH(relative humidity)				
Dimensions		Refer to its diagram				
Tamper output		Contact output: NC contact rating DC24V 0.5Amax				
Optical axis adjustment(H)		180°（±90°）				
Optical axis adjustment(V)		20°（±10°）				
Viewfinder		Detachable				
Protection against dew, frost		Calefaction housing (optional)				
Material		PC resin				
Net weight		1250g(receiver +transmitter)				
Gross		2168g				

Ⅸ. Recommended installation guide & physical appearance and dimension

Recommended installation



Installation bracket

T–shaped bracket
T-100
100 × 120mm

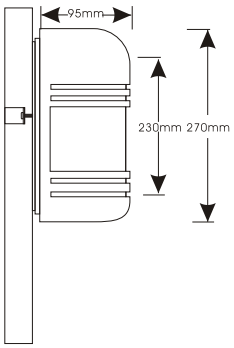
T-200
200 × 120mm

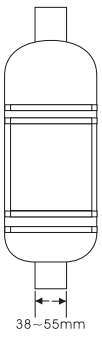
I–shaped bracket
I-100
100mm

I-200
200mm

L–shaped bracket
80 × 75mm

Physical appearance & dimension





The product has got the 3C and CE approval already and is now applying for the UL approval.