

## Frequency Adjusted Infrared Detector Manual

2 Beams Series: ABT-30 ABT-60 ABT-100 ABT-150

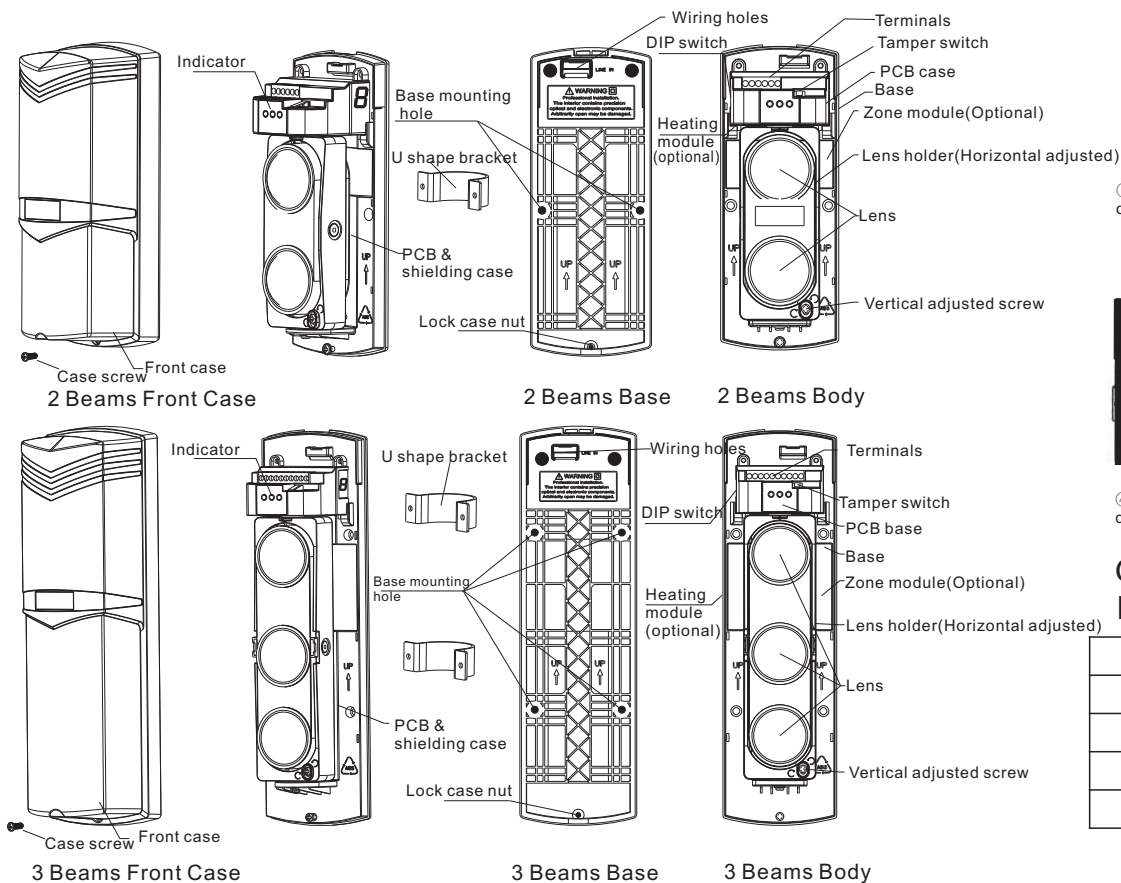
3 Beams Series :ABE-50 ABE-100 ABE-150 ABE-200

Thanks for choosing this photoelectric infrared detector, please read this instruction manual carefully before installation, and keep it for future reference.

! Warning	Do not use the product for purposes other than the detection of moving objects such as people and vehicles.
	Do not touch the unit base or power terminals with a wet hand (do not touch when the product is wet with rain etc.). It may cause electric shock.
	Never attempt to disassemble or repair the product, it may cause fire or damage to the devices.
	Do not exceed the voltage or current rating specified for any of the terminals during installation, doing so may cause fire or damage to the devices.
! Caution	Do not pour water over the product. The water may enter, which may cause damage to the devices.
	Clean and check the product periodically for safe use.
	The product are designed to detect intruder. we will not accept responsibility for any damages or other consequences resulting from an intrusion.

Remarks: the details as below only apply to 2 beams, 3 beams.

### Part Name

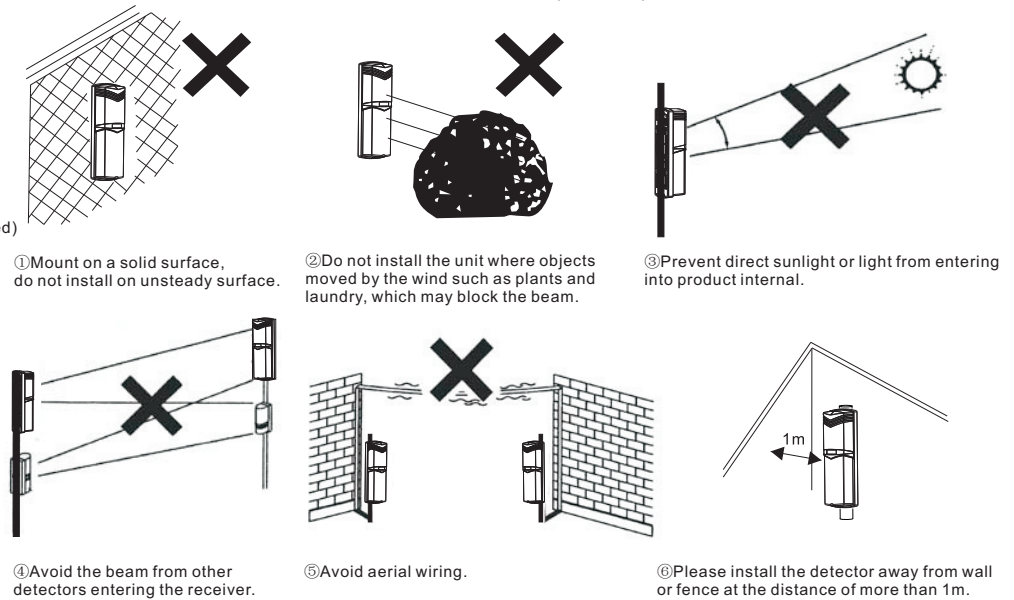


### Features

1. Beam interruption time adjusted.
2. Form C relay providing more applications.
3. Tamper switch NC, open when remove case.
4. 4 channel frequency adjusted, anti-interference, suitable for long distance and stack use.
5. Digital tube display received signal strength, easy to debug.
6. Wide voltage and energy saving design.
7. Digital communication function.
8. Alignment angle:  $\pm 90^\circ$  horizontally,  $\pm 10^\circ$  vertically.
9. Waterproof grade IP65.
10. Digital filtering, environment adaptive function, minimum false alarm.
11. The lowest beam interference, can be used in all kinds of complicated environment.

### Installation

1. Please avoid these situations below to assure product performance:



### General Installation Detecting Distance

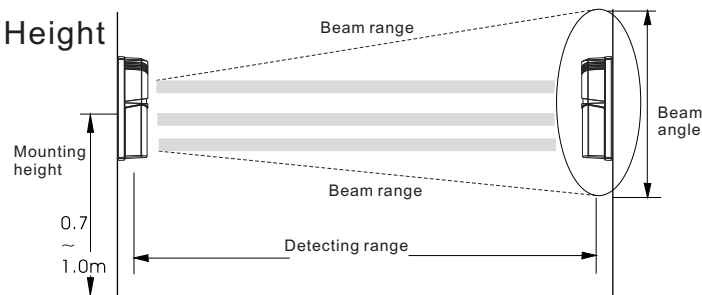
Model	Detecting Distance	Beam Angle
ABT-30	30m	1.2m
ABT-60	60m	1.6m
ABT-100	100m	2.0m
ABT-150	150m	2.4m

2 Beams Angle

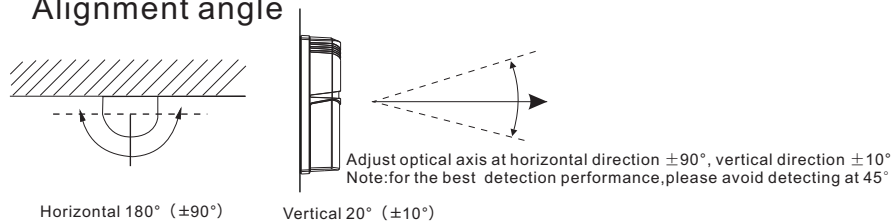
Model	Detecting Distance	Beam Angle
ABE-50	50m	1.6m
ABE-100	100m	2.0m
ABE-150	150m	2.6m
ABE-200	200m	3.4m

3 Beams Angle

## Mounting Height

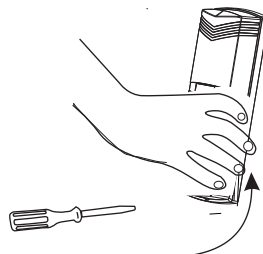
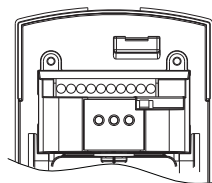
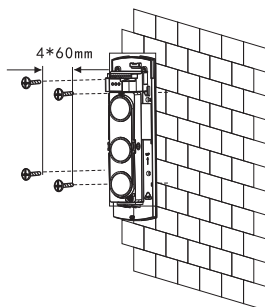
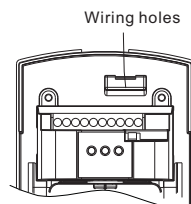
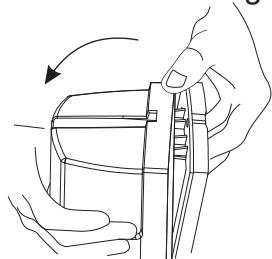


## Alignment angle

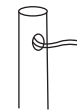


## Intallation Way

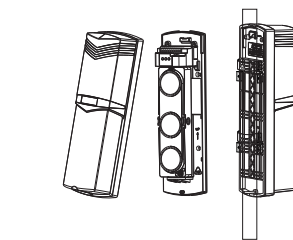
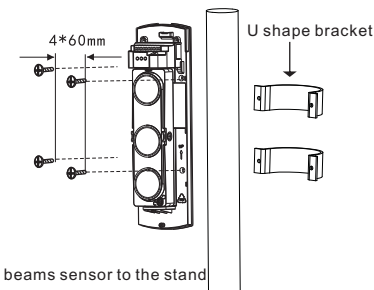
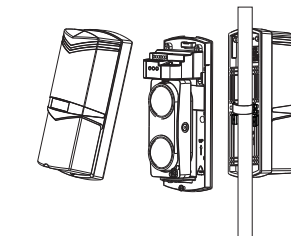
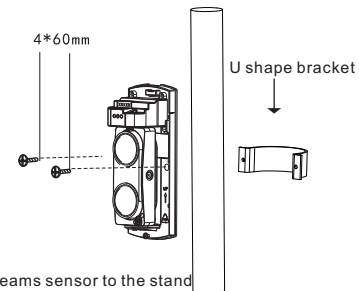
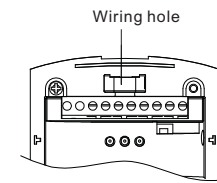
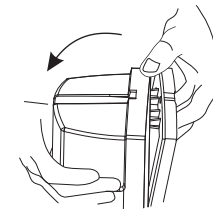
### Wall mounting



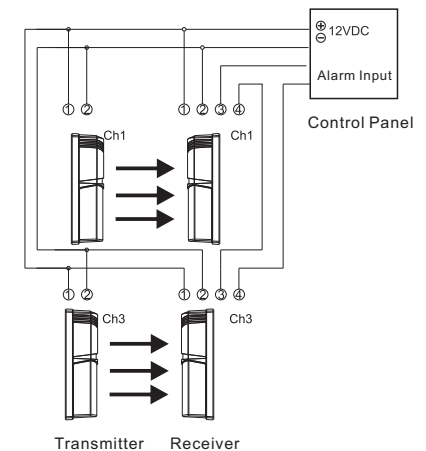
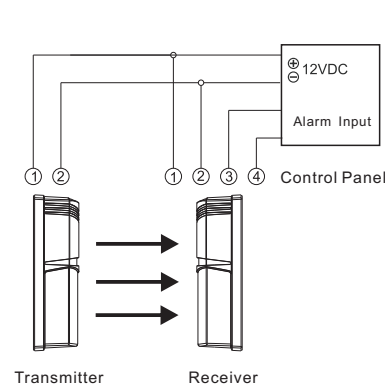
## Pole Mounting



Bracket outer diameter  
 $\Phi 38 \sim \Phi 50 \text{mm}$

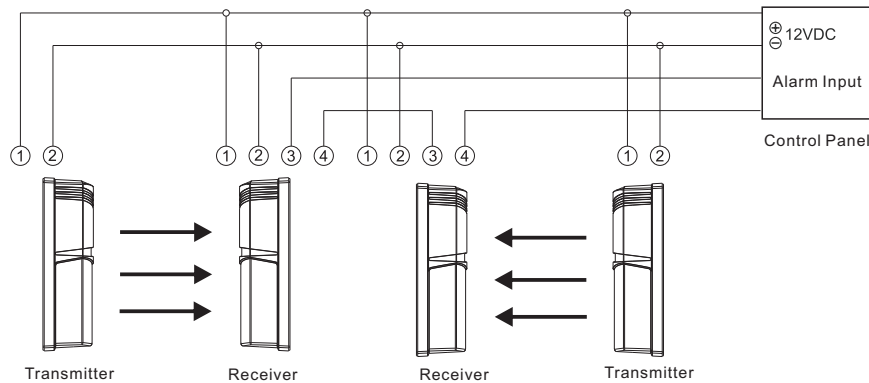


## Wiring



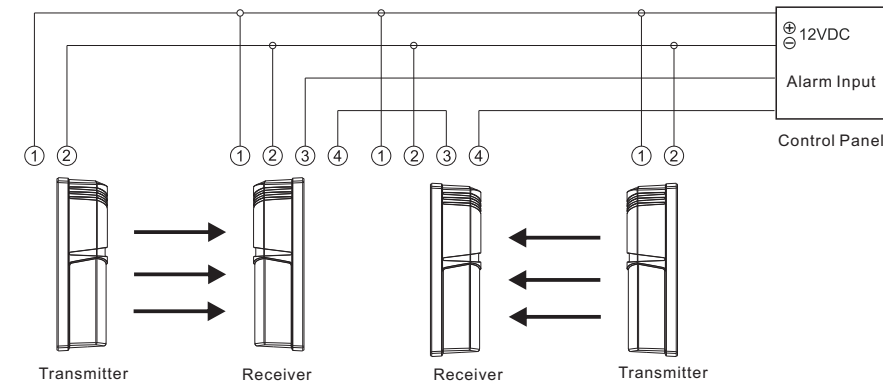
## 1 set wiring:

The power of transmitter and receiver are paralleled, using DC 12V by control panel, alarm output is NC as below:



## 2 sets wiring:

The power of the transmitter and receiver are paralleled connection, using DC 12V by control panel, alarm output is NC and series connection as below:



2 sets of series installation: The power of the transmitter and receiver are paralleled connection, using DC 12V by control panel, alarm output is NC and series connection.

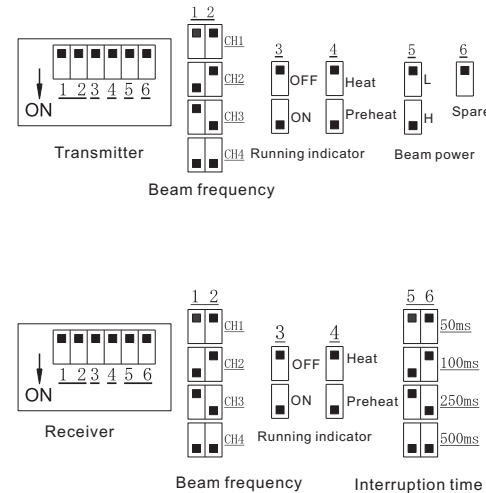
■ The wire length between power supply and detector should not exceed as below:

Diameter	Length	Voltage	DC12V	DC 24V
0.5mm <sup>2</sup>	(Diameter 0.8)		100m	500m
0.75mm <sup>2</sup>	(Diameter 1.0)		150m	750m
1.0mm <sup>2</sup>	(Diameter 1.2)		200m	1000m
1.5mm <sup>2</sup>	(Diameter 1.4)		250m	1250m



1. Power wire can not exceed the listed length.
2. When connect more detectors, the needed wire length is obtained by listed length divided by number of units used.
3. Do not connect terminals to exceed voltage specified, doing so might damage device or cause fire.

## DIP Switch



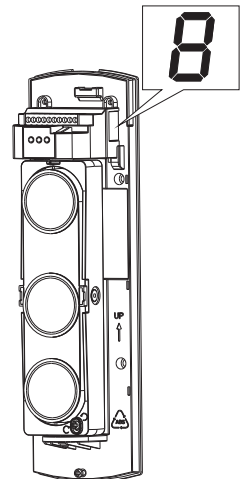
- (1) DIP switch 1 and 2 used for setting beam frequency, the position must be the same for transmitter and receiver.
- (2) Transmitter running indicator, after debug, please set it as OFF to save energy.
- (3) Preheat function used for testing heating function, the constant temperature control is higher than heating. If customer choose heater, please set it as heating position to save energy.
- (4) The transmitter beam frequency has two grades: high and low, can be set according to alarm distance.

- (1) DIP switch 1 and 2 used for setting beam frequency, the position must be the same for transmitter and receiver.
- (2) Transmitter running indicator, after debug, please set it as OFF, and set digital tube as OFF to save energy.
- (3) Preheat function used for testing heating function, the constant temperature control is higher than heating.
- (4) Interruption time need to choose according to installation place.
- (5) Each interruption time set as the maximum detectable time. Faster speed may be not detected. To birds, newspaper, leaves etc, they can interrupt beam occasionally, setting longer interruption time. After adjusting interruption time, verify is needed.

## Alignment Indicator

### Digital tube indicator

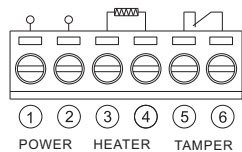
- (1) Adjust beam frequency switch, make transmitter and receiver with the same frequency. If transmitter frequency is CH1, then receiver frequency is also CH1.
- (2) Adjust vertical screw and horizontal lens holder, at this time digital tube display is from 0 to 9.0 means without signal, and in the status of alarm, relay alarm output, alarm indicator is on. When optical axis align well, digital tube display should be 9.
- (3) After the above step, must do walk testing, and confirm alarm status normal. If can't align, please do step 1.



Signal strength	0~4 Realign 5~6 General 7~8 Good 9 Excellent
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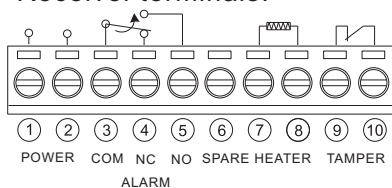
## Wire Connection

### Transmitter terminals:



1. Power input DC 10V-24V
2. Optional heater, standard without heater

### Receiver terminals:



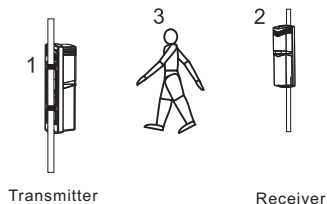
1. Power input DC 10V-24V
2. Optional heater, standard without heater
3. Relay contact 1C 30V DC 0.5A max

## Walk Test



Alert status

The alarm LED indicator is OFF.  
If the LED indicator is ON even though the beams are not blocked, realign the optical axis.



Please do walk test according to 3 points as below(block infrared beam)  
1.In front of transmitter  
2.In front of receiver  
3.At the middle of transmitter and receiver



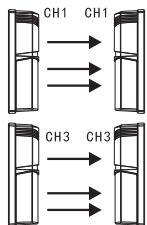
Alarm status

If the alarm LED indicator is ON when the beams are blocked, this means installation is successful.

## Beam frequency

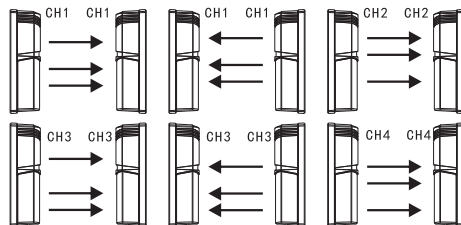
The selectable frequency can avoid anti interference for long distance or stacking use. Make sure the transmitter and receiver with the same frequency. Although there are 4 channel frequency can be chosen, please set frequency two channels apart for stacking applications. The first unit is set on channel 1 while the next is on channel 3, channel 2 and 4 are the same.

(1)2 units stacking



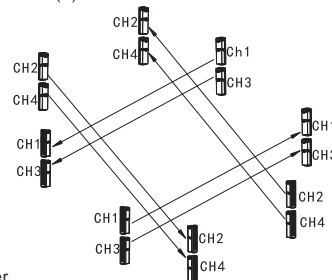
Transmitter Receiver

(2)6 units long distance stacking

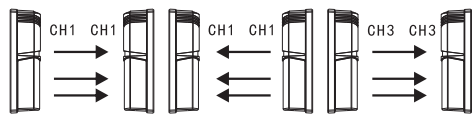


Transmitter Receiver Receiver Transmitter Transmitter Receiver

(3)Perimeter installation1

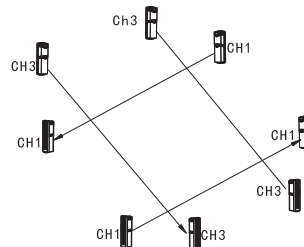


(4) 3 units long distance



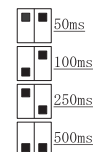
Transmitter Receiver Receiver Transmitter Transmitter Receiver

(5)Perimeter installation 2

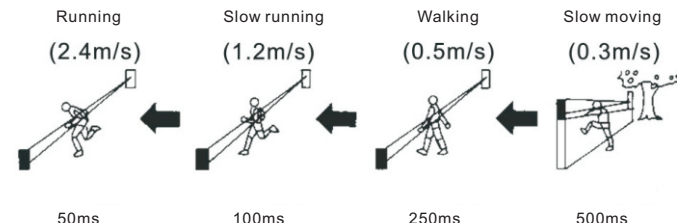


## Interruption Time

Beam interruption time adjusted is on receiver, the function can adjust detector sensitivity adapt to different environment, slow setting means reduce sensitivity.



Interruption time



50ms

100ms

250ms

500ms

Each interruption time set as the maximum detectable time. Faster speed may be not detected. To birds, newspaper, leaves etc, they can interrupt beam occasionally, setting longer interruption time. After adjusting interruption time, verify is needed.

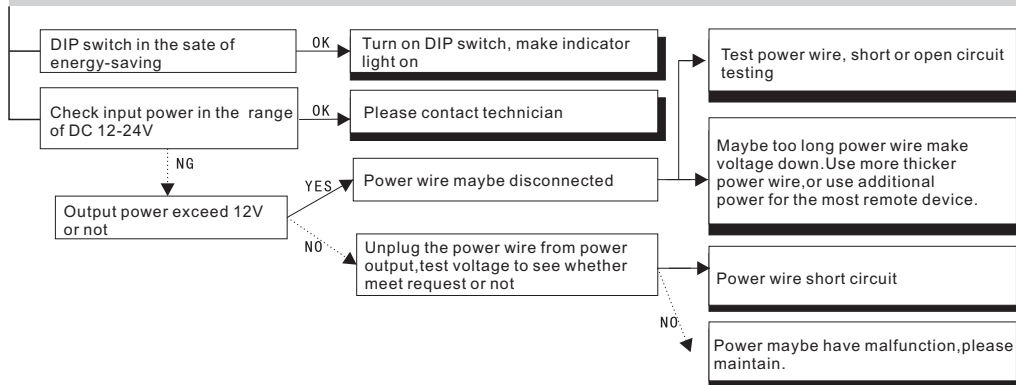
## Specifications

2 Beams Sensor		ABT-30	ABT-60	ABT-100	ABT-150
Detecting distance	Indoor(m)	60	120	200	300
	Outdoor(m)	30	60	100	150
2 Beams Detecting Way		2 infrared beams are interrupted at the same time			
3 Beams Sensor		ABE-50	ABE-100	ABE-150	ABE-200
Detecting distance	Indoor(m)	100	200	300	400
	Outdoor(m)	50	100	150	200
3 Beams Detecting Way		3 infrared beams are interrupted at the same time			
Interruption time		50ms, 100ms, 250ms, 500ms(optional)			
Beam frequency		4 channel optional			
Working voltage		10V-24V DC/AC			
Working current		90mA max			
Alarm period		2s, 50ms optional			
Alarm output		Relay contact output 1C, contact capacity DC 30V 0.5A max			
Tamper switch		NC, open when case removed			
IP grade		IP65			
Working temperature		-25℃-55℃			
Environment humidity		95% max			
Alignment angle		Horizontal 180° (±90°), Vertical 90° (±10°)			
Installation place		Indoor/outdoor, wall/pole			
Weight		2 beams sensor 900g, 3 beams sensor 1250g			
Accessories	U shape bracket	2pcs/4pcs, 70*37.5*21.5mm, stainless material with thickness 1.5mm			
	Mounting screw	4pcs/8pcs, PM4*30mm			
Heater (optional)	Voltage	12V-24V DC			
	Current	350mA max			
	Temperature	+60℃			
Heater accessories		2pcs, PA2.5*10mm			

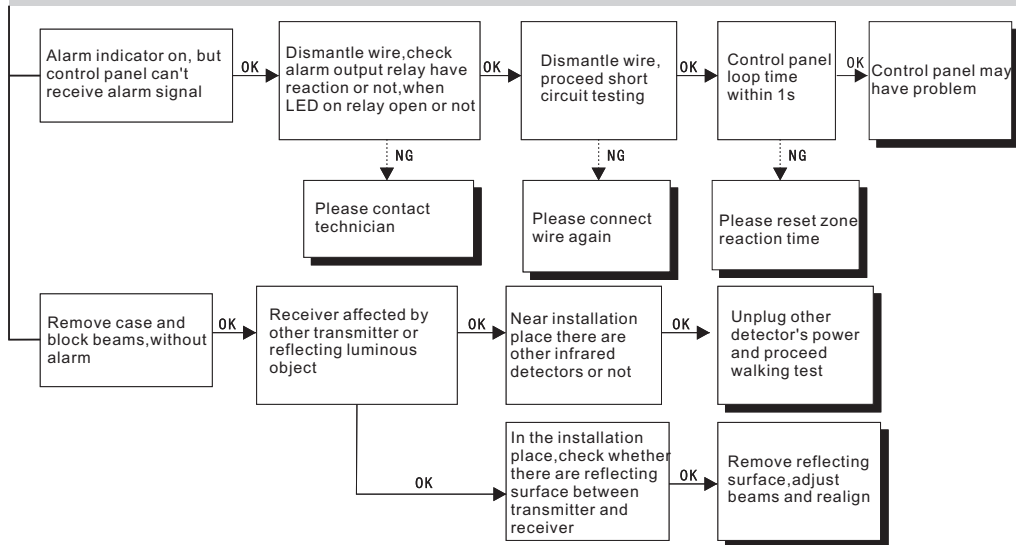
Remarks: when environment temperature is lower than -20℃, please choose heater, the wire on the heater is nonpolar.

## Malfunction Process

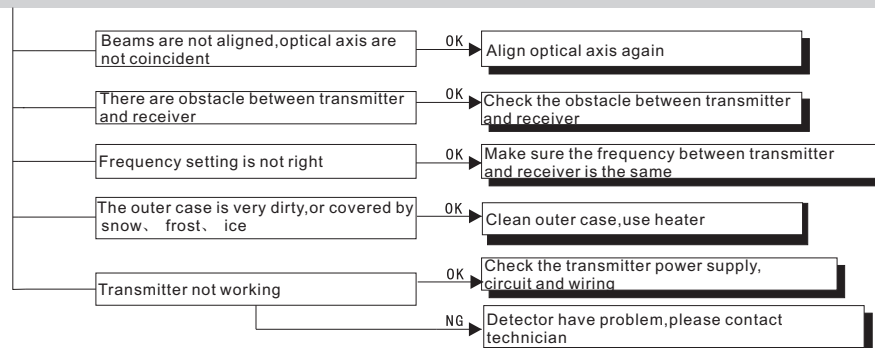
1. After powered on, indicator is not on for transmitter or receiver, without any reaction.



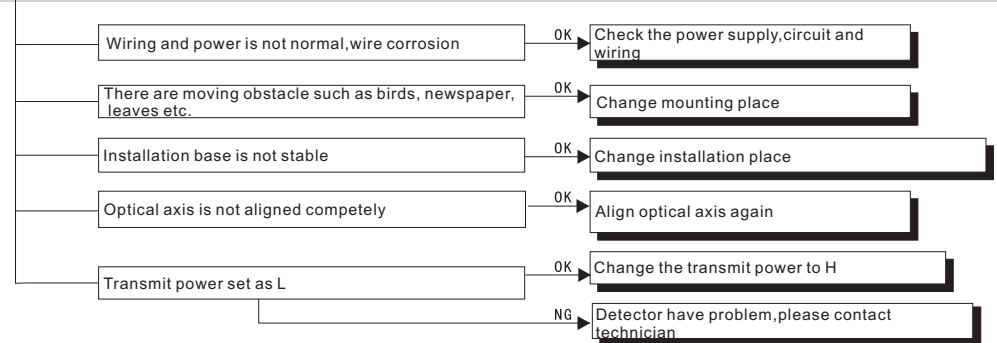
2. After beams blocked completely, alarm indicator is not on and without alarm output



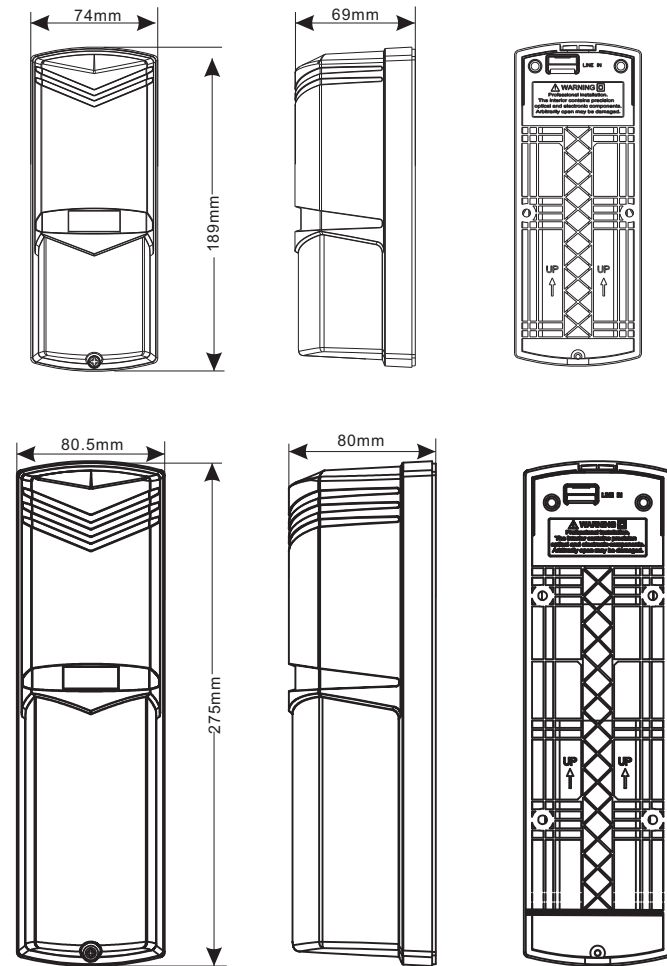
3. Without block beams, alarm light always on and have alarm output



## False Alarm



## Dimensions



2 Beams

3 Beams