WIRELESS FOUR BEAMS PHOTOELETRIC BEAM DETECTOR

USER MANUAL

Thank you for purchasing this product! In order to use the product correctly, please read this manual carefully before use and keep it properly for reference when needed.

Warning

During the use of the product, it is strictly prohibited to disassemble or modify the product structure to avoid affecting the safety performance of the product.

It is prohibited to use voltages or currents other than those specified to connect this product, in order to avoid product damage.

1. Product Features

- Using wireless transmission technology, there is no need for wiring and installation is simple.
- Low power consumption, battery life up to 3 years.
- 4 frequency channels technology and has strong anti-interference ability.
- The interruption time is adjustable (50ms, 100ms, 300ms and 700ms) .
- Digital CPU control circuit reduces false alarms.
- Infrared signal secondary processing function, stable and reliable in use.
- Designed with IP65 waterproof rating.
- Supports blocking alarm, tamper alarm and low battery alarm.

2. Specifications

Model		ABH-100W	ABH-200W
Detection distance		100m	200m
Alarm mode	Blocking alarm	When the infrared beams are completely blocked	
	Tamper alarm	When the device cover is removed	
	Low battery alarm	When the battery voltage is lower than 3V	
Alarm output	Blocking alarm	NO and NC are optional (contact rating: DC 3.6V 0.02A max)	
	Tamper alarm	NC (contact rating: DC 3.6V 0.02A max)	
	Low battery alarm	NC (contact rating: DC 3.6V 0.02A max)	
Wireless distance and frequency		Wireless modules that support switch input can be connected, and the wireless frequency and distance depend on the functionality of the transmission module.	
Interruption time		50ms, 100ms, 300ms and 700ms adjustable	
Battery voltage		3.6V (Recommended battery model: ER34615H 3.6V 19A)	

Frequency channel	4 options available
Alarm duration time	2s
Operating current	TX: 420uA; RX: 220uA
Battery life	3 years (3 years of battery life when the TX and RX are each equipped with 1 battery, 6 years of battery life when the TX and RX are equipped with 2 batteries each)
Protection rating	IP65
Operating temperature	- 40°C~70°C
Operating humidity	⩽95%RH
Correction angle	Horizontal ±90°, vertical ±10°
Installation	Indoor/outdoor, wall/pole installation
Dimensions	402mm×110.5mm×141.5mm
Weight (Including TX, RX, packaging)	3.9KG
Accessories	
U-shaped mounting clamp	4 pcs
Wall mounting screws	KA4*30mm, 8 pcs
Expansion tube	6*30mm, 8 pcs

3. Dimensions

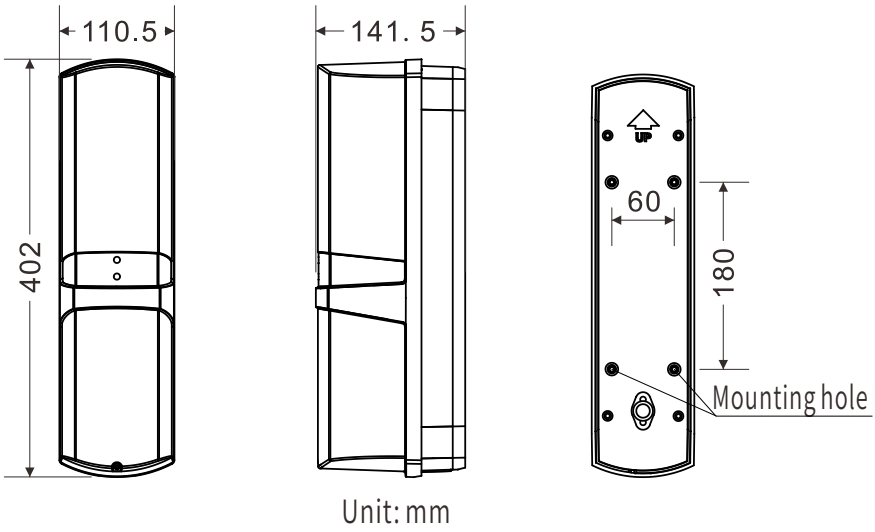

Fig 1

4. Parts identification diagram

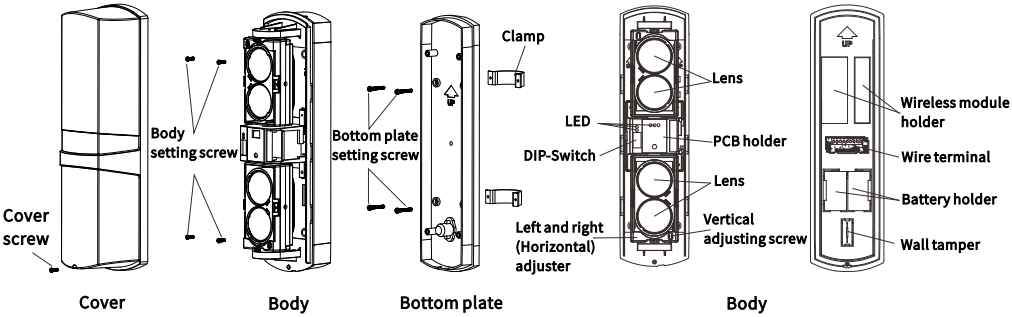

Fig 2

5. Installation precautions

(1) Do not install the device on an unstable surface, as shown in Figure 3;

(2) Do not install the device where trees, leaves or other objects witch may sway in the wind and block the beam, as shown in Figure 4;

(3) Do not install the RX in a location exposed to direct sunlight, as shown in Figure 5;

(4) Do not let infrared beams from other devices reach the RX, as shown in Figure 6;

(5) Install the device to a sufficient height, which can effectively reduce the reflection of infrared beams.

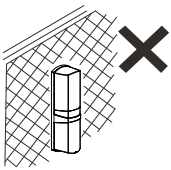

Fig 3

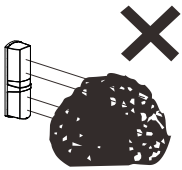

Fig 4

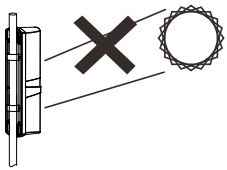

Fig 5

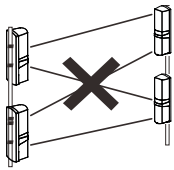

Fig 6

(6) Detection distance and beam angle range

Model	Detection Distance	Beam Angle Range
ABH-100W	100m	2.0m
ABH-200W	200m	4.4m

(7) Installation height and detection range diagram

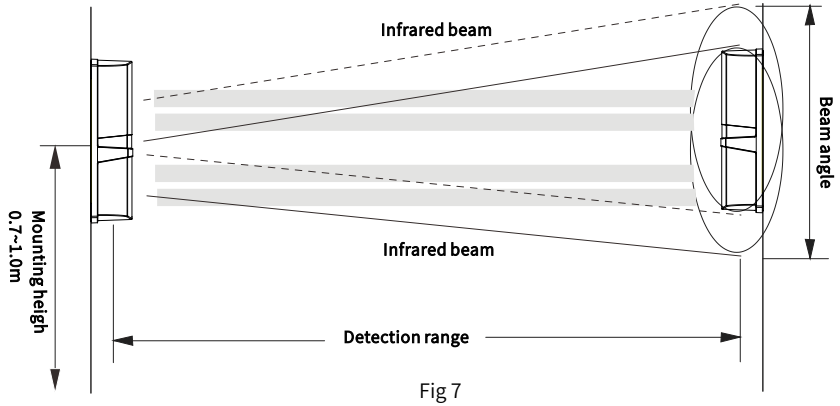

Fig 7

(8) Angle adjustment diagram

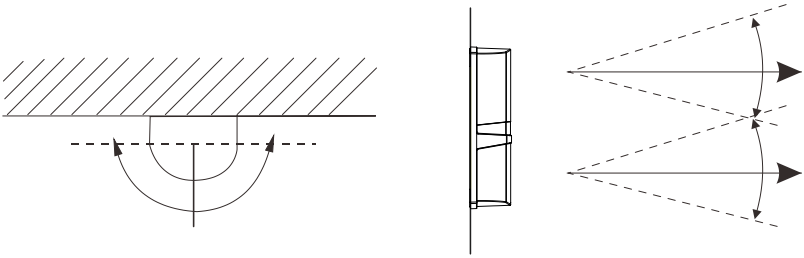

Fig 8

6. Installation method

Wall mounting

(1) Loosen the cover screws and remove the cover, as shown in Figure 9.

(2) Loosen the fixing screws of the body and remove the bottom plate, as shown in Figure 10.

(3) Install the battery and wireless module on the body, and connect the power cable to the terminal board (please refer to the wiring terminal instructions for details), as shown in Figure 11.

(4) Drill 4 mounting holes on the target wall according to the size of the base plate mounting holes, as shown in Figure 12.

(5) Punch the expansion tube into the 4 mounting holes and mount the included screws to fix it, as shown in Figure 13.

(6) Install the main body back to the base plate, tighten the fixing screws of the main body, and perform alignment (please refer to the alignment instructions for details), as shown in Figure 14.

(7) Finally replace the front cover and tighten the cover lock screw, as shown in Figure 15.

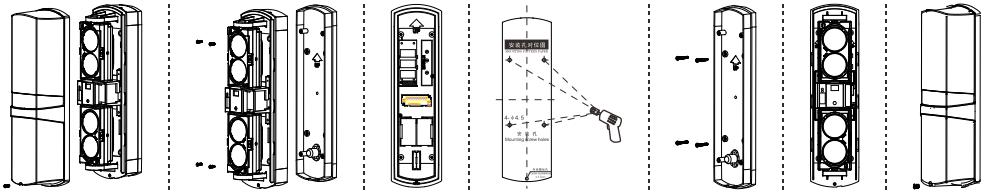

Fig 9 Fig 10 Fig 11 Fig 12 Fig 13 Fig 14 Fig 15

Pole mounting

(1) Loosen the cover screws and remove the cover, as shown in Figure 16.

(2) Loosen the fixing screws of the body and remove the bottom plate, as shown in Figure 17.

(3) Install the battery and wireless module on the body, and connect the power cable to the wiring terminal (please refer to the wiring terminal instructions for wiring details), as shown in Figure 18.

(4) Fix the bottom plate on the bracket, as shown in Figure 19.

(5) Install the main body back to the bottom plate, tighten the fixing screws of the main body, and perform alignment (for details on alignment, please refer to the alignment instructions).

(6) Finally replace the front cover and tighten the cover lock screws.

(7) Diagram for back-to-back mounting, as shown in Figure 20.

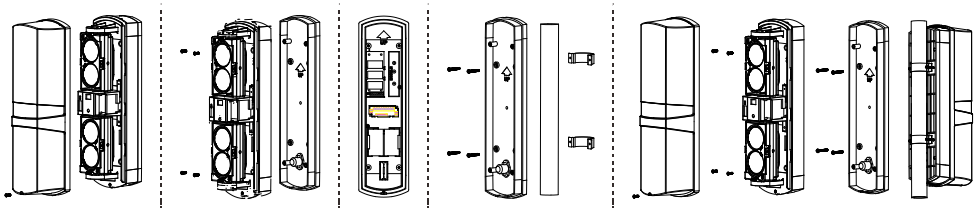

Fig 16 Fig 17 Fig 18 Figure 19 Figure 20

7. Wiring terminal instructions

Warning: During wiring, do not connect voltage or current exceeding the specified to the port. This may cause damage to the device or fire!

TX

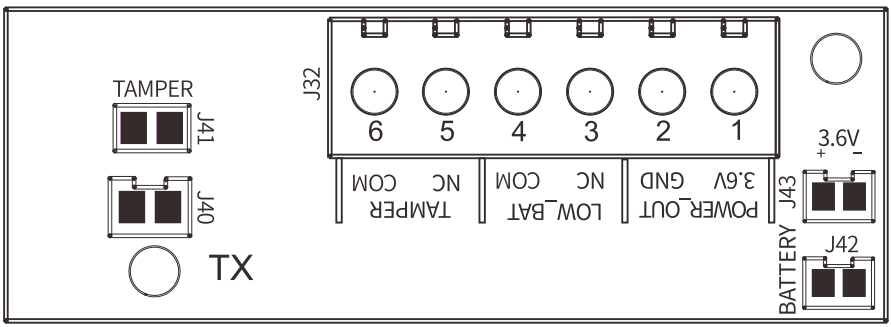

Fig 21

J32: Output terminal

Pin 1/2 [POWER OUT]: DC 3.6V power auxiliary output. 3.6V is the positive pole, and GND is the negative pole.

Pin 3/4 [LOW_BAT]: Low battery alarm output. When the battery voltage is lower than 3.0V, will output a low battery alarm.

Pin 5/6 [TAMPER]: It is an anti-tamper alarm output. It will alarm when the cover is removed or when the detector is removed from the wall.

J42, J43: Power input

DC 3.6V Battery powered.

J40: Wall tamper

Wall tamper input.

RX

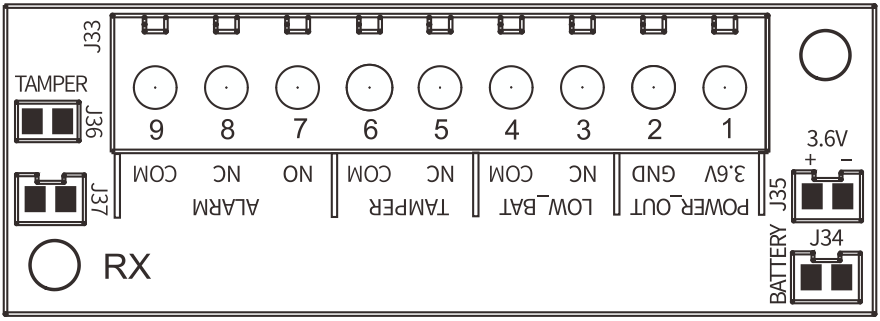

Fig 22

J33: Output terminal

Pin 1/2 [POWER OUT]: DC 3.6V auxiliary power output.

Pin 3/4 [LOW_BAT]: Low battery alarm output. When the battery voltage is lower than 3.0V, will output a low battery alarm.

Pin 5/6 [TAMPER]: It is an anti-tamper alarm output. It will alarm when the cover is removed or when the detector is removed from the wall.

Pin 7/8/9 [ALARM]: It is a block alarm output. It will alarm when all beams are blocked.

J34, J35: Power input

Battery powered DC3.6V.

J37: Wall tamper

Wall Tamper input.

8. DIP switch function instructions

TX

(1) Switch 1 for power ON/OFF.

(2) Switch 2 and 3 for frequency channel settings, 4 channels can be set. The TX and RX of the detector must be set to same channel (When there are two or more pairs of detectors installed on the same straight line or on the same plane, it is recommended that the two adjacent pairs of detectors be set to different channels to prevent mutual interference).

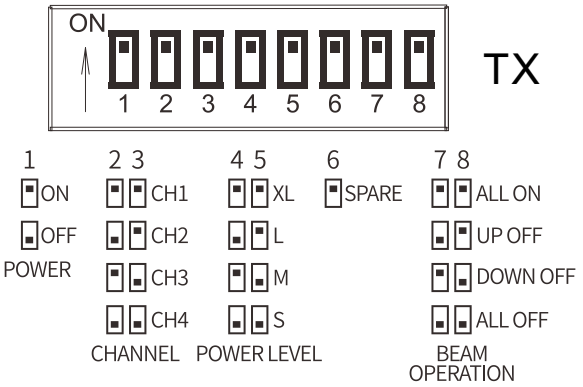

Fig 23

(3) Switch 4 and 5 for transmit power settings. XL is 100% of the calibrated distance, L is 70% of the calibrated distance, M is 40% of the calibrated distance, S is 20% of the calibrated distance. When the distance is shorter than the calibrated distance, the transmit power can be adjusted appropriately, which can improve the endurance time of the detector.

(4) Switch 6 is reserved.

(5) Switch 7 and 8 for beam selection settings, and 4 modes can be switched. [ALL ON] for all beams turned on; [UP OFF] for upper two beams turned off but the lower two beams turned on; [DOWN OFF] for upper tow beams turned on but the lower two beams turned off; [ALL OFF] for all beams turned off.

RX

(1) Switch 1 for power ON/OFF.

(2) Switch 2 and 3 for frequency channel settings, 4 channels can be set. The TX and RX of the detector must be set to same channel (When there are two or more pairs of detectors installed on the same straight line or on the same plane, it is recommended that the two adjacent pairs of detectors be set to different channels to prevent mutual interference).

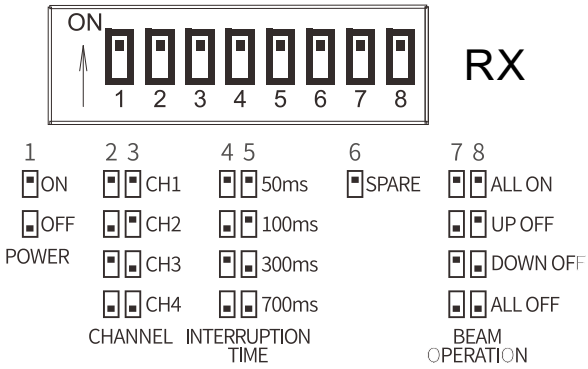

Fig 24

(3) Switch 4 and 5 for interruption time(Reaction time) settings, which can be set according to the actual usage scenario.

(4) Switch 6 is reserved.

(5) Switch 7 and 8 for beam selection settings, and 4 modes can be switched. [ALL ON] for all beams turned on; [UP OFF] for upper two beams turned off but the lower two beams turned on; [DOWN OFF] for upper tow beams turned on but the lower two beams turned off; [ALL OFF] for all beams turned off.

9. LED Indicator instructions

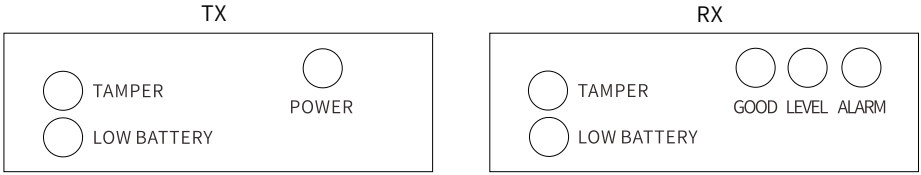

Fig 25

TX

[POWER] is power indicator(green). When the TX is powered on, the LED will be on. After about 30 minutes, it will automatically go out without affecting its function.

[TAMPER] is tamper indicator (green). When the tamper alarm continues, the LED will flash once every 6 seconds.

[LOW BATTERY] is low battery indicator (green). When the battery voltage of the TX is lower than 3.0V, it will flash once every 6 seconds.

Note: About 30 minutes after the TX is powered on or the cover is installed (means the tamper switch is closed), all the LED indicators of the TX will automatically go out, but all its functions will not be affected. If the tamper switch of the TX is triggered or the TX is restarted, the LED indicators will be turned on again.

RX

[ALARM] is alarm indicator(red). When it is alarming, the LED will lights up.

[LEVEL] is one of the signal indicators (blue). It is set to four states: off, slow flashing, fast flashing, and always on. Means the RX receives the infrared signal changes from weak to strong.

[GOOD] is the main signal indicator(green), it will lights up when [LEVEL] goes out. It is set to four states: off, slow flashing, fast flashing, and always on. Means the RX receives the infrared signal changes from weak to strong.

[TAMPER] is tamper indicator (green). When the tamper alarm continues, the LED will flash once every 6 seconds.

[LOW BATTERY] is low battery indicator (green). When the battery voltage of the RX is lower than 3.0V, it will flash once every 6 seconds.

Note: About 30 minutes after the RX is powered on or the cover is installed (means the tamper switch is closed), all the LED indicators of the RX will automatically go out, but all its functions will not be affected. If the tamper switch of the RX is triggered or the RX is restarted, the LED indicators will be turned on again.

10. Alignment instructions

(1) Power on the device.

(2) Set the TX and RX to the same frequency channel.

(3) DIP switch of TX and RX both set to [UP OFF] mode and just keep their lower two beams on. Adjust the vertical adjustment screws and left and right adjusters of the lower two beams to make both sides appear aligned.

(4) Rotate the axis of the TX and RX to correct the direction of the infrared beam. When the blue (LEVEL) indicator changes from slow flashing to fast flashing, it indicates that the signal received by RX is getting better and better, until the blue LED is always on. Then continue to adjust, when the blue indicator goes out, and the green (GOOD) indicator changes from slow flashing to fast flashing until it is always on, which means the signal strength is optimal. At this time, the alignment of the lower two beams is completed (if During the alignment process, the RX indicator automatically goes out. It can be activated by triggering the tamper of the RX or powering off and then on again. And then continue the alignment operation until it is completed).

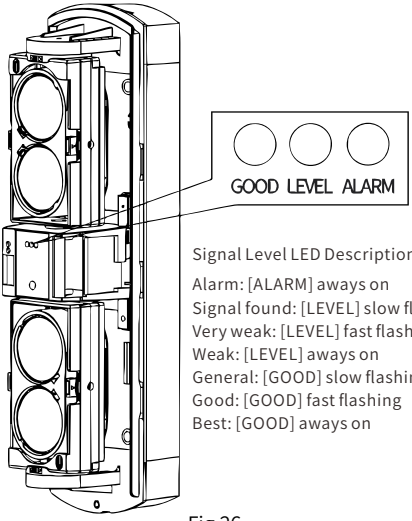

Fig 26

(5) Then set the DIP switches of the TX and RX to [DOWN OFF] mode and just keep their upper two beams on, adjust the vertical adjustment screws and left and right adjusters of the upper two beams to make the [GOOD] LED always on, then the alignment of the upper two beams is completed.

(6) Finally, set the DIP switch both of the TX and RX to [ALL ON] mode, then the alignment is completed.

11. Troubleshooting

Problem Observed	Possible Reason	Solution
The power LED does not light up after powering on	1. The battery is not connected properly	1. Check the battery wiring
	2. The battery is dead	2. Check the battery voltage
	3.The power switch is not turned on	3. Check the DIP switch (see the function instruction of the DIP switch)
After the beams are completely blocked, the alarm LED does not light up and has no alarm output.	1. Signals emitted by other emitters enter the receiver	1. Try to close the other emitter
	2. Floor or wall reflection	2. Refer to the function instruction of the DIP switch to gradually reduce the beam power.
	3. The interruption time is set too long	3. Reduce interruption time

The beam is not blocked, but the alarm LED is always on and the alarm is output.	1. The beams are not aligned and the optical axes do not coincide with each other.	1. Align the beams again
	2. There are obstacles between the TX and RX.	2. Remove the obstacles between the TX and RX.
	3. The frequency channel of the TX and RX is inconsistent.	3. Set the frequency channel of the TX and RX to be consistent
	4. The surface of the TX or RX is dirty.	4. Clean the cover
	5. The TX is not powered	5. Ensure that the power supply of the TX is normal
False alarm	1. Low battery	1. Replace the battery
	2. There are moving obstacles, such as birds, leaves, etc.	2. Clear obstacles or change the mounting position
	3. The Mounting foundation is unstable	3. Reinforce the foundation or change the mounting position.
	4. Not completely aligned	4. Align the beams again

Note: If the problem still cannot be solved after checking the above solutions, please contact our after-sales service staff or local dealer.