2HiBMW-SERIES

2HiBMW-020M

2HiBMW-030M

2HiBMW-040M

2HiBMW-060M

2HiBMW-080M

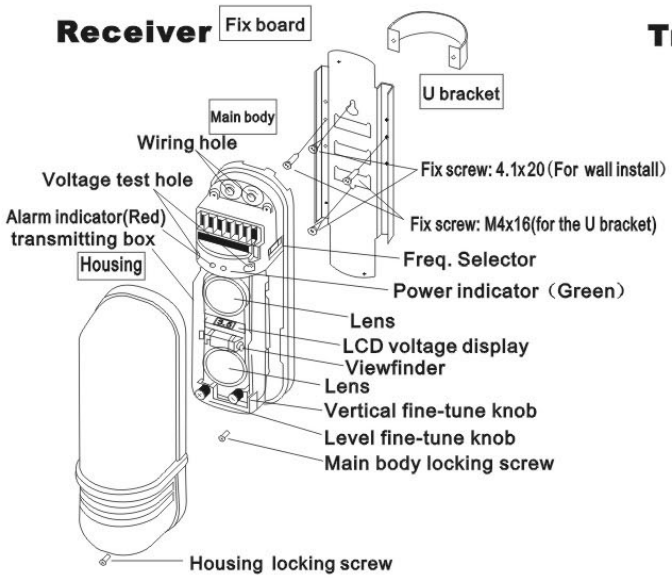
2HiBMW-100M

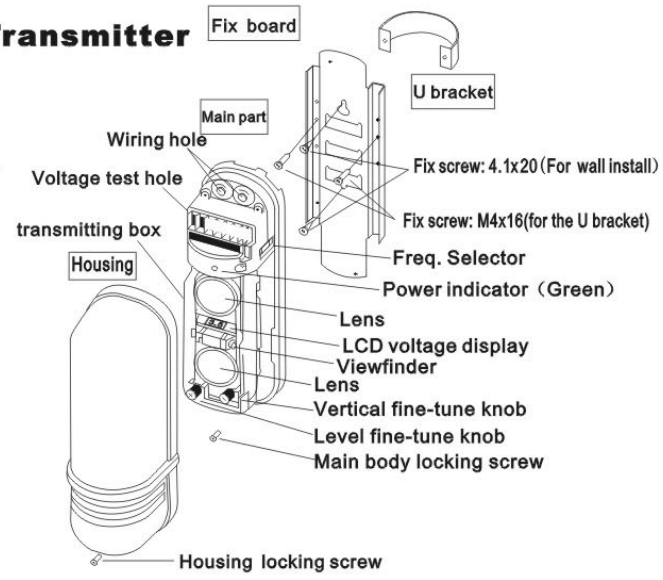
2 Infrared Beam Outdoor-Indoor Sensor

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


Receiver
Fix board
U bracket
Main body
Wiring hole
Voltage test hole
Alarm indicator(Red)
transmitting box
Housing
Fix screw: 4.1x20（For wall install）
Fix screw: M4x16(for the U bracket)
Freq. Selector
Power indicator（Green）
Lens
LCD voltage display
Viewfinder
Lens
Vertical fine-tune knob
Level fine-tune knob
Main body locking screw
Housing locking screw

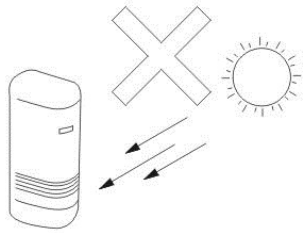

Transmitter
Fix board
U bracket
Main part
Wiring hole
Voltage test hole
transmitting box
Housing
Fix screw: 4.1x20（For wall install）
Fix screw: M4x16(for the U bracket)
Freq. Selector
Power indicator（Green）
Lens
LCD voltage display
Viewfinder
Lens
Vertical fine-tune knob
Level fine-tune knob
Main body locking screw
Housing locking screw

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.

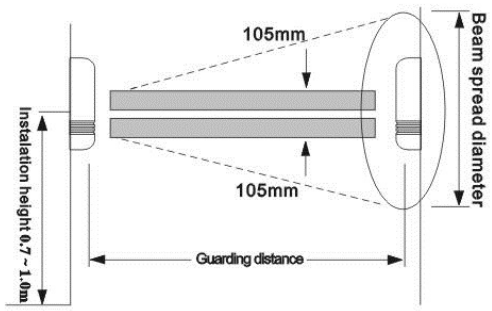
Impediment presents during setup

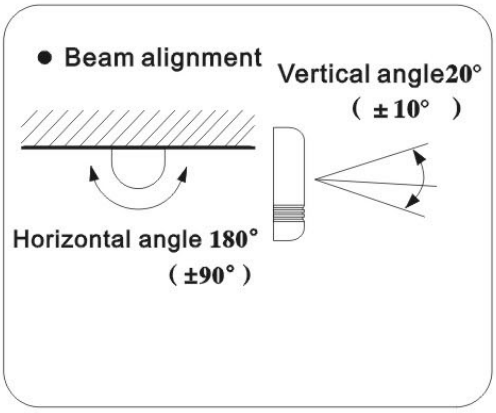
The base is unstable

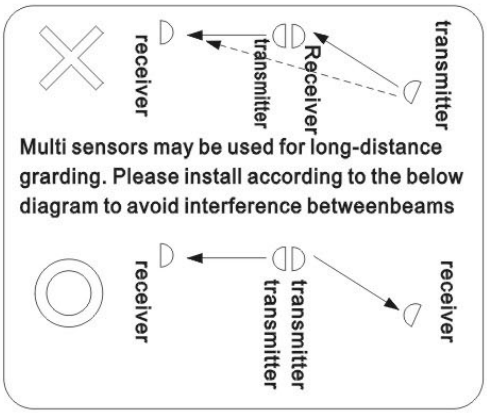


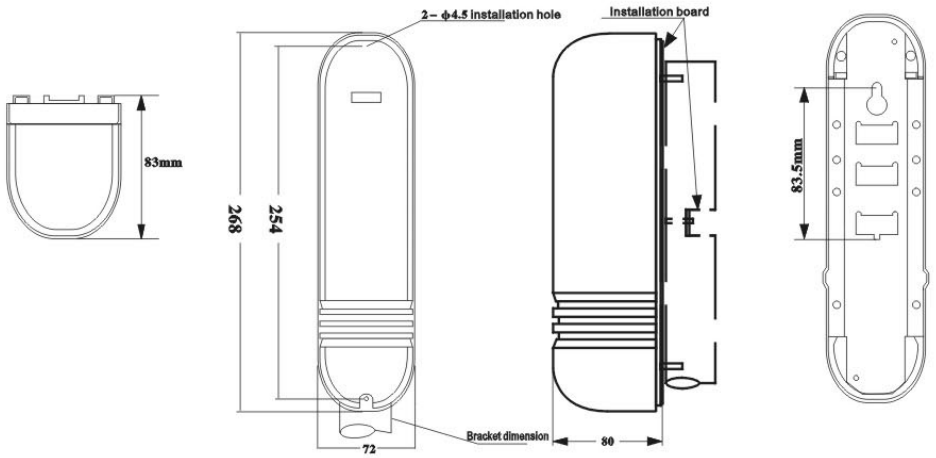
Direct sunlight lamplight etc.

sytle	Guarding distance	Beam spread diameter
020	20m	0.8m
040	40m	1.5m
060	60m	1.8m
080	80m	2.4m
100	100m	3.0m

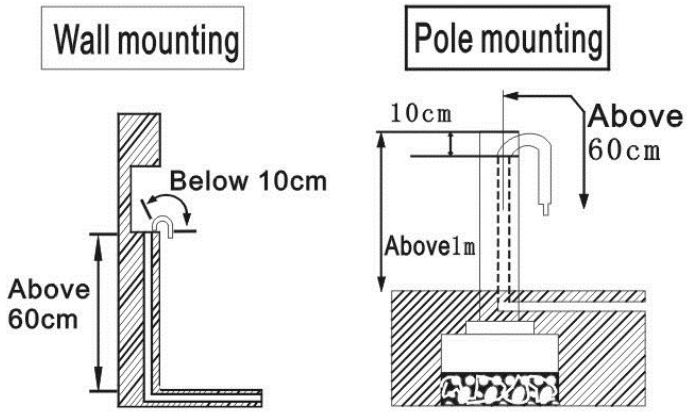



● Beam alignment
Vertical angle20°
(±10°)
Horizontal angle 180°
(±90°)


receiver
transmitter
Receiver
transmitter
Multi sensors may be used for long-distance grarding. Please install according to the below diagram to avoid interference betweenbeams
receiver
transmitter
transmitter
receiver


83mm
2– ϕ4.5 installation hole
Installation board
268
254
72
Bracket dimension
80
83.5mm

3. Installation environment



Voltage / Wire size	DC12V		DC24V	
	030	060 /080 /100	030	60 /080 /100
ϕ0.65 (52Ω/km)	250m	227m	1750m	1577m
ϕ1.0 (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.

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.

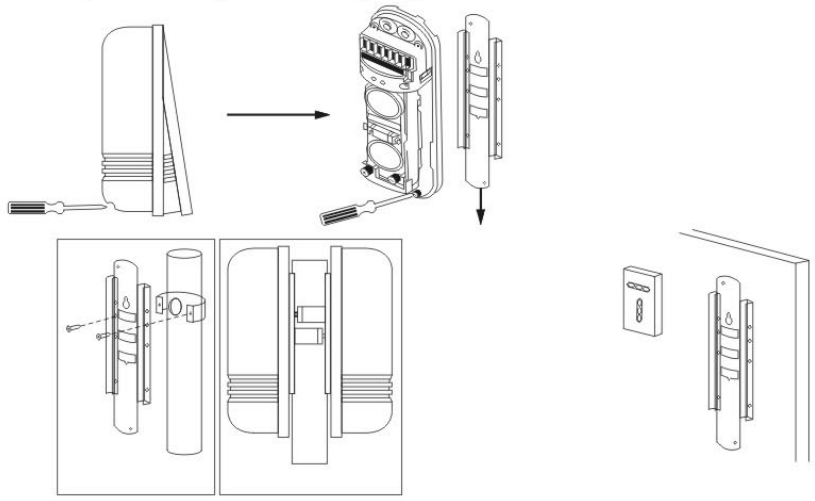
5)Overhead wiring is not allowed.

6)It must be equipped with protective sleeve for outdoor wiring part.

7)The wiring length from the power supply to he detector body should be controlled within the distance as shown in left form (calculate the wiring distance according 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

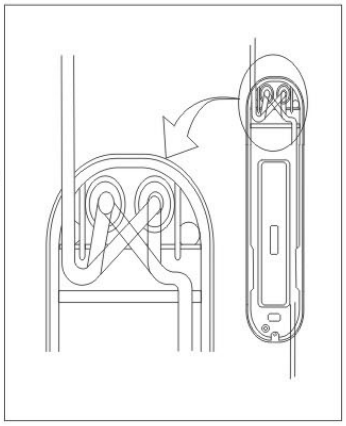
- It can be installed through M4×16 screws and the pole with ϕ38-45 external diameter as above figure, please use the pole with bigger external diameter if he screws are lengthened; When installing two detectors on the same pole (back to back), please offset the U-shaped clamp of mounting plate as shown above so that the height of installation of two detectors can be same.

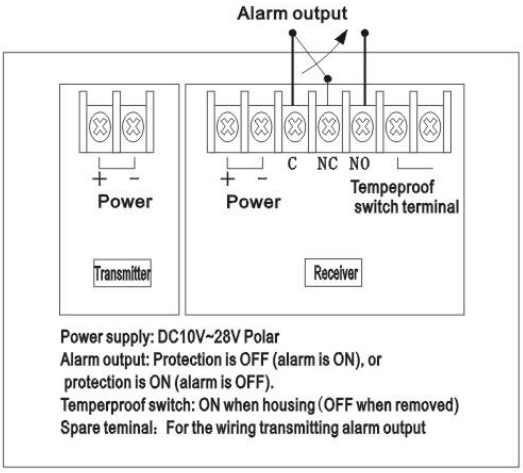
Wall mounting

- 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

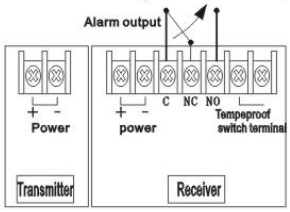
Wall mounting is same as pole mounting, firstly do make sure that the mounting plate is tightened, put the wiring through the body and mounting plate as shown in figure, and then tighten the retaining screws.



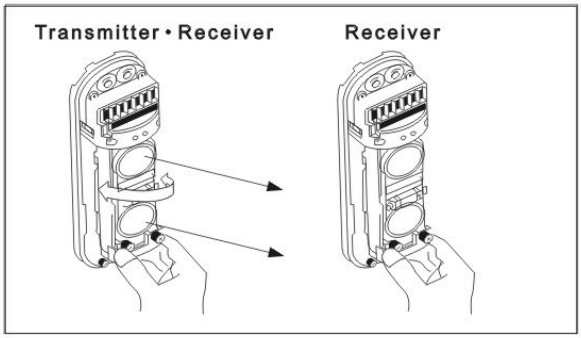


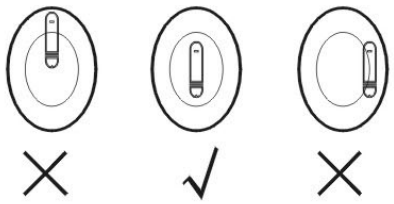
6. Optical axis adjustment

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.

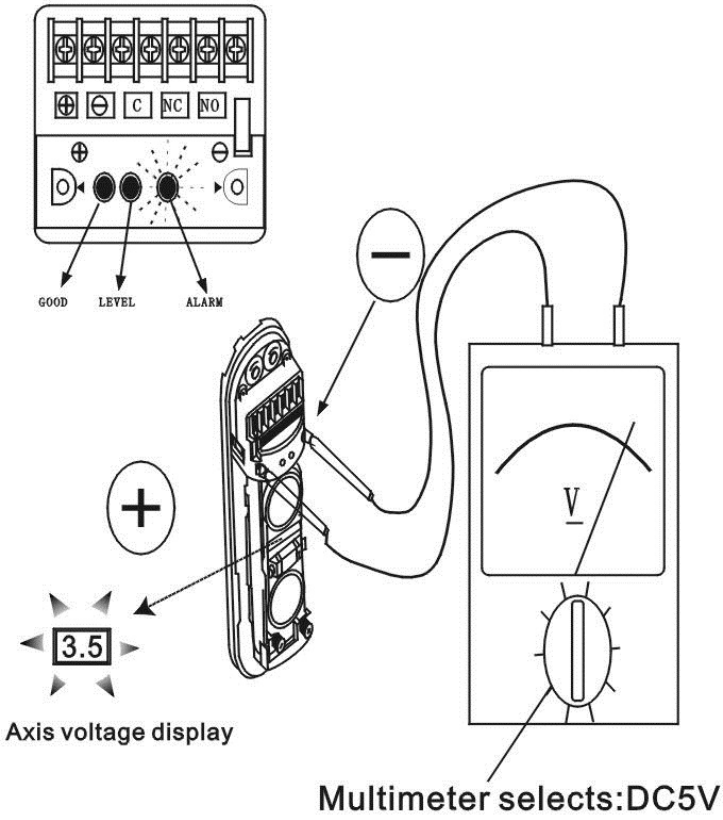




6.The maximum sensitivity of detector can be judged and confirmed through the conditions of environment indicator on the receiver.

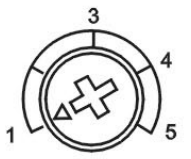
① LEVEL indicator (Red): brightness varies as the different precision of beams alignment.
② ALARM (alarm indicator) is ON when giving an alarm
③ GOOD indicator (green) is ON when optical axis

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 seperately untill they have the same voltage.



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.



response time adjustment

1.	2.	3.	4.
			
Fast running (6.9m/s)	Fast walking (1.2m/s)	Normal walking (0.7m/s)	Slow walking (0.3－0.5m/s)

8. Physical test

Walking test is required after the setting, physical test in accrdance 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

9. Trouble checking

Fault	Cause	Solution
The LED of the transmitter doesn't light up	Power failure (open circuit, short-ciruit, etc.)	Check the power wiring
The LED of the receiver doesn't light up	Power failure (open circuit, short-ciruit, 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 refecting 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 indecator of the receiver is constantly ON.	① The beam doesn't match closely ② There is obstacle presents between the transmitter and the reciver ③ The beam doesn't match closely	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 installation base unstable ⑥ Beams blocked by other moving objects	① Check the wiring ② Clear 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

10. Technical parameters

Model		2HiBMW-020M	2HiBMW-030M	2HiBMW-040M	2HiBMW-060M	2HiBMW-080M	2HiBMW-100M		
Alert distance	(Outdoor)	20m	30m	40m	60m	80m	100m		
	(Indoor)	60m	90m	120m	180m	240m	300m		
Maximum distance		230m	350m	460m	650m	900m	1100m		
No. Of beams		2 beams							
Detection mode		2 beams blocked simultaneous							
Optical source		Infrared digital pulse beam							
Response speed		50~700msec							
Alarm output		Relay contact output: NO. NC contact rating: AC/DC30V 0.5AMax							
Power supply		DC13.8~24V AC11~18V P 15W							
Power consumption		40mA max.	40mA max.	40mA max.	55mA max.	65mA max.	65mA 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		Calefaction housing(optional)							
Material		ABS Resin							
Net weight		815g(transmitter + receiver)							
Gross		1315g							