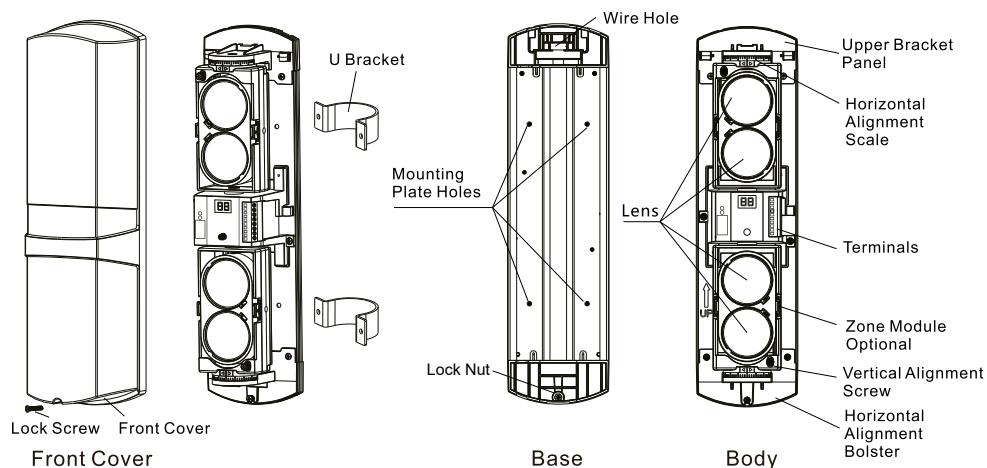◆ Thanks for purchasing photoelectric quad beam detector, please read this user manual carefully before installation.

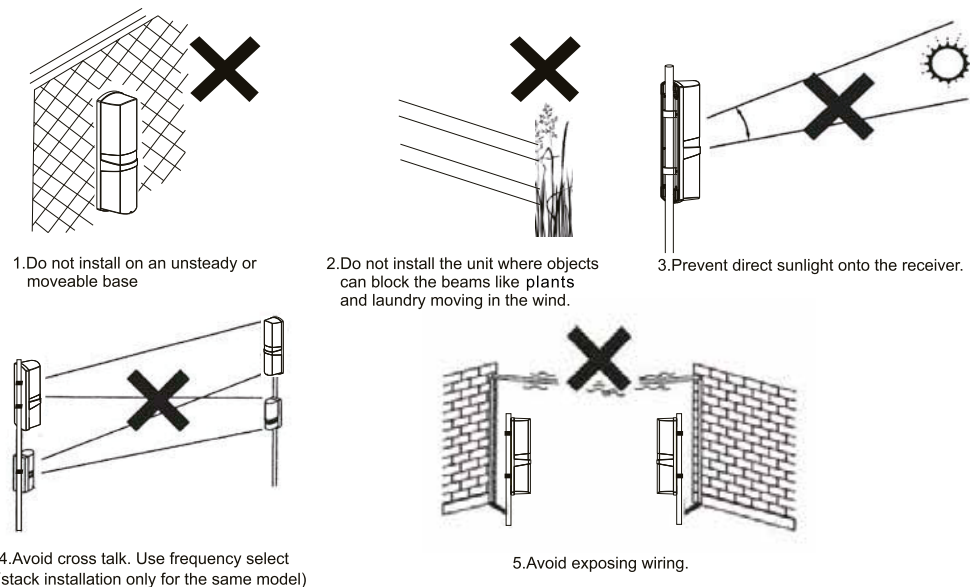|	
⚠ WARNING	Do not use the product for purposes other than the detection of moving objects such as people and vehicles. Do not use the product to activate a shutter etc. which may cause an accident.
	Do not touch the unit base or power terminals of the product with a wet hand (do not touch when the 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 damage to the devices.
⚠ CAUTION	Do not pour water over the product with a bucket, hose etc. The water may enter which may cause damage to the devices.
	Clean and check the product periodically for safe use. If any problem is found, do not attempt to use the product as it is and have the product repaired by a professional engineer or electrician.

1.Features

- Interruption time or walkspeed adjustable
- NO / NC relay outputs
- Integrated tamper switch, turns on when cover is moved.
- Frequencies selectable for long distance and stacking installations
- LED display signal grading for easy alignment
- Wide voltage power input: DC/AC 12-24V
- "And" "Or" technology
- DIP switch for easy programming
- Waterproof grade: IP65
- Alignment angle horizontally ±90°, vertically ±10°
- Digital filtering, high environment adaptability to eliminate false alarms
- Integrated heating function, reliable in cold/frost/fog weather.

2.Part Description

Front Cover
Lock Screw   Front Cover
U Bracket
Wire Hole
Mounting Plate Holes
Lens
Lock Nut
Base   Body
Upper Bracket Panel
Horizontal Alignment Scale
Terminals
Zone Module Optional
Vertical Alignment Screw
Horizontal Alignment Bolster

3.Installation Notes

(1).Please avoid below situations to assure performance

1.Do not install on an unsteady or moveable base

2.Do not install the unit where objects can block the beams like plants and laundry moving in the wind.

3.Prevent direct sunlight onto the receiver.

4.Avoid cross talk. Use frequency select (stack installation only for the same model)

5.Avoid exposing wiring.

(2).Normal installation

◆ Detection distance

Detection Distance	50m	100m	150m	200m	250m
Beam Angle	1.6m	2.0m	2.6m	3.4m	4.4m

◆ Mounting height

Beam Spread Range
Beam Angle
Beam Spread Range
Mounting height 0.7~1.0m
Detection Distance

◆ Adjusting angle

Horizontal 180° (±90°)   Vertical 20° (±10°)
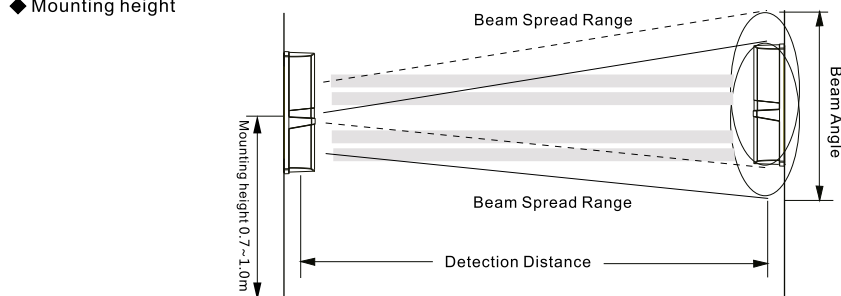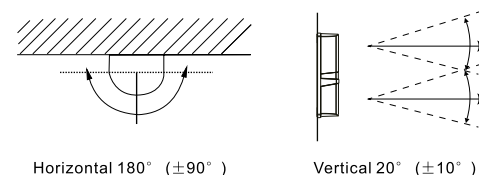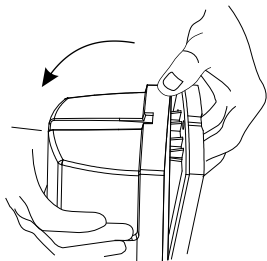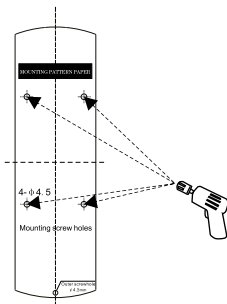
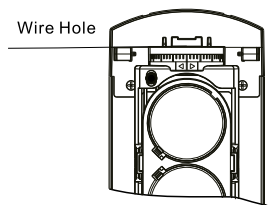Notice: For best testing results, please avoid testing in 45°
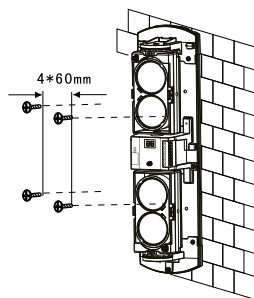
4.Setting Method

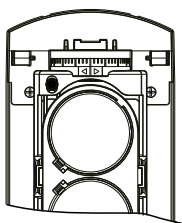◆ Wall mounting

1. Loosen the screw and remove the cover

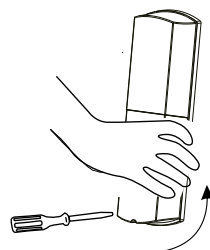2.Attach the installation paper to the wall, mark the holes first and then make the guide holes.

Wire Hole

3.Wire hole: remove the foam plug, pull wire through, and reset the foam plug.
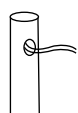
4*60mm

4. Attach beam to the base

5. Connecting wires to the terminals (please refer to "beam alignment")

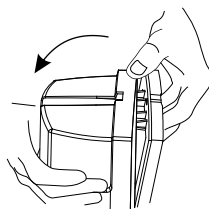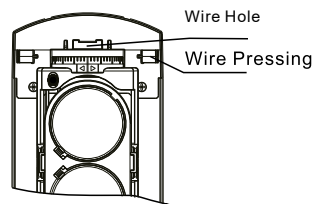6. Review and reset the cover

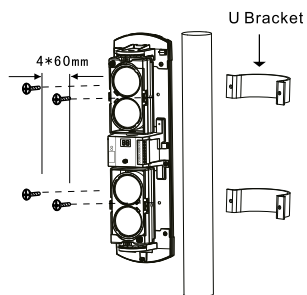◆ Pole mounting

Bracket Outer Diameter
φ38~ φ50mm

1.Break out the wire hole and pull out the wires.

2.Remove the cover
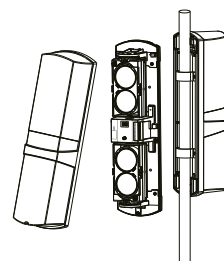
Wire Hole
Wire Pressing

3.Drop into the holes with expansion pipe, then fix it with screws.

U Bracket

4*60mm

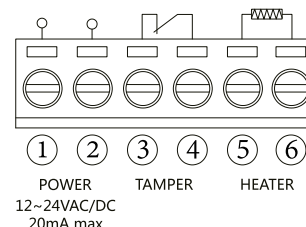4.Fix the body on the bracket

5.Back to back installation diagram, others please refer to the step 5 &6 of the wall mounting method.

5.Connectors

⚠ Warning   Do not exceed the voltage or current rating specified for any of the terminals during installation.

Transmitter:

① ② ③ ④ ⑤ ⑥
POWER   TAMPER   HEATER
12~24VAC/DC
20mA max

1 . Power input: DC/AC12-24V.

2 . No heater in the package, please order if required.

3 . Tamper switch (NC) is independent of the circuit, anti-tamper trigger when cover is removed.

Receiver:

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨
POWER   COM NC NO TAMPER HEATER
12~24VAC/DC   ALARM
70mA max
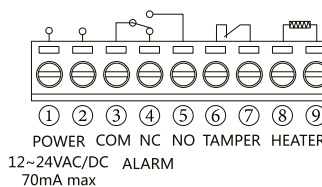
1 . Power input: DC/AC12-24V.

2 . No heater in the package, please order if require

3 . Tamper switch (NC) is independent of the circuit, anti-tamper trigger when cover is removed.

4. C relay (30VDC 1.0A max).

6.Connecting Wires

(1).Single connect: Control panel operating voltage DC12V, NC alarm output. Connecting to power supply parallel

DC/AC12~24V
Alarm input

Control panel

① ②   ① ② ③ ④

CH1   CH1

Transmitter   Receiver

(2).Stacked connect: Control panel operating voltage DC12V,NC alarm output series connect

DC/AC12~24V
Alarm input

Control panel

① ②   ① ② ③ ④

CH1   CH1

① ②   ① ② ③ ④

CH3   CH3

Transmitter   Receiver
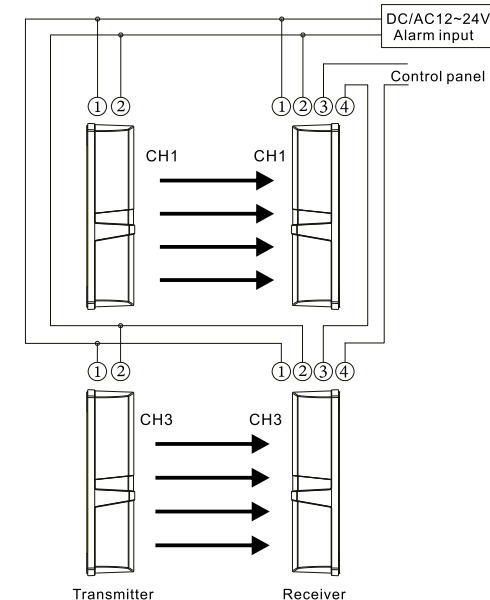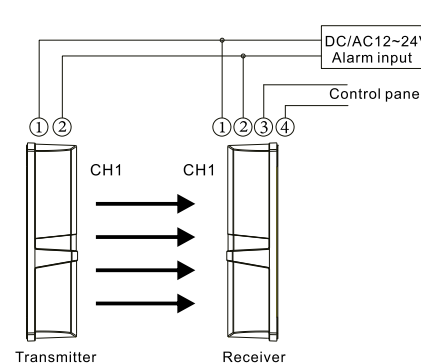
◆ Wiring distance between the power supply and the detector should not exceed the following table length.

Wire diameter / Length \ Voltage	DC12V	DC24V
0.5mm² (Φ0.8)	100m	500m
0.75mm² (Φ1.0)	150m	750m
1.0mm² (Φ1.2)	200m	1000m
1.5mm² (Φ1.4)	250m	1250m

⚠ Warning

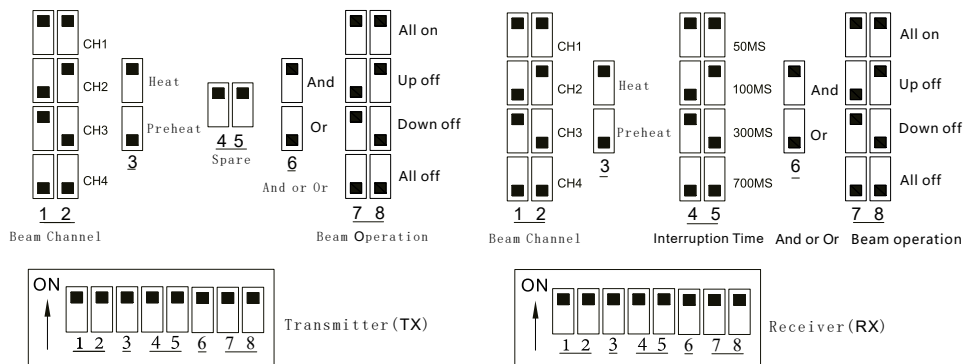1.The power wire can't exceed the listed length.

2.When connecting multiple detectors, the required cable length is divided by the corresponding number of units listed.

3.Don't connect the port with the voltage or current which is over the normal specification.

7.DIP Switch Explanations

1.DIP switch show on the left side of the main PCB, as shown in following figure.

• DIP switches 1&2: Set beam frequency. TX and RX must be the same.

• DIP switch 3: Set heater. PREHEAT is for test. Must set HEAT when it's used.

• DIP witches 4&5: Set interruption time.

• DIP switch 6: Set "AND" or "OR" mode. "AND" means alarm activated if all 4 beams are blocked;

  "OR" means alarm activated if either upper/down 2 beams are blocked.

• DIP switches 7&8: Set Beam's working mode.

  ALL ON: 4 beams on.

  UP OFF DOWN ON: disable upper 2 beams.

  UP ON DOWN OFF: disable down 2 beams.

  ALL OFF: disable all beams.

  Notes: All set must be the same on both TX and RX except 4&5 (4&5 on TX is spare)

2.Indicators
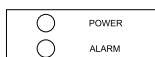
Receiver

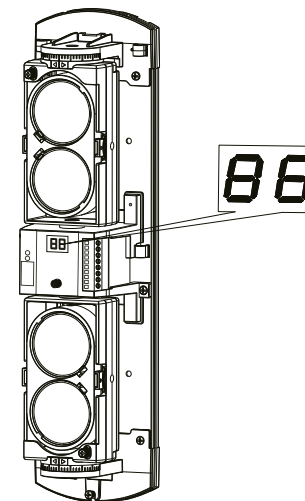**POWER (Green)**
• Indicator turns on if TX and RX are powered.

Transmitter

ALARM (Red)
• ALARM indicator is always lighting if alarm activated; It will be off during arming.

8.Optic Axis Adjustment
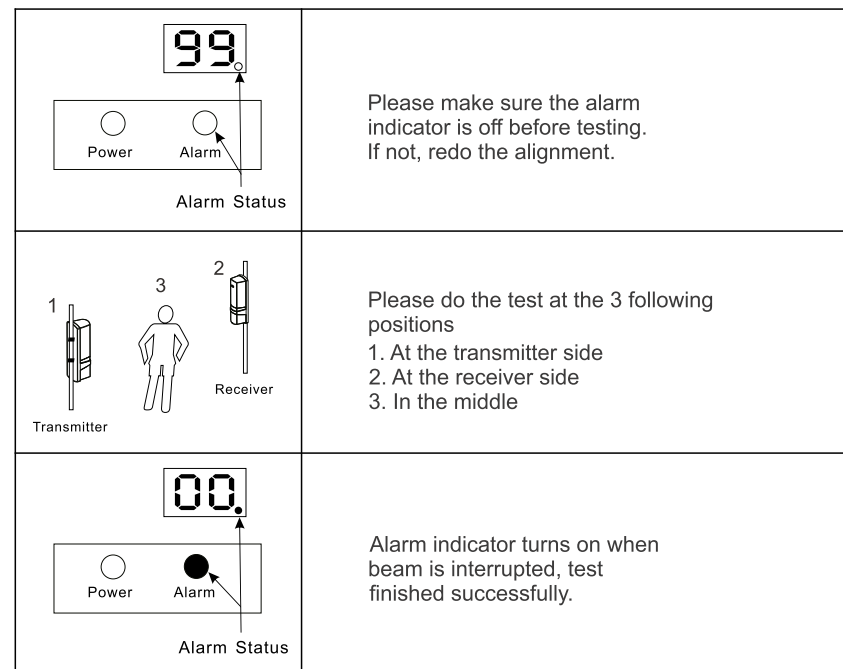
1.Set TX and RX same frequency by DIP switches 1&2.

2.Set "AND" and "UP ON DOWN OFF" mode, adjust up 2 beams horizontally and vertically, it's ok when LED is "99".

3.Then at "UP OFF DOWN ON" mode, same set for down 2 beams

4.Then set "ALL ON" and alignment finished

5.Then do "walk test" to ensure it'll activate alarm normally.

If failed, please re-do alignment. If alignment keeps failing, please refer to troubleshooting.

Signal strength	00~40 Realign
	41~70 Fair
	71~90 Good
	91~99 Best

9.Walk Test

Alarm Status

Please make sure the alarm indicator is off before testing. If not, redo the alignment.

Please do the test at the 3 following positions
1. At the transmitter side
2. At the receiver side
3. In the middle

Alarm indicator turns on when beam is interrupted, test finished successfully.

Note: If the alarm LED indicator is OFF even though the beams are completely blocked, refer to the "Trouble Shooting".

10.Troubleshooting

Symptom	Possible cause	Remedy
Power on, but power LED off	1. No voltage on power cable; 2. Broken circuit or short circuit; 3. Beyond specified voltage; 4. Power cable exceeds the specified length	1. Check PSU, voltage, cables and connectors
When beam is blocked, the alarm LED does not indicate, nor does the alarm relay switch	1. There is reflection or cross-talk from other transmitters 2. Walk speed set too long 3. Alarm output cable is shorted or damaged	1. Change beam path or change TX/RX frequency channel 2. Ensure 4 beams all blocked 3. Change walk-speed setting 4. Check receiver terminal and output cable
When beam is not blocked, alarm LED indicates activation	1. Beam is out of alignment; optical axis does not overlap 2. There are objects between TX and RX 3. Frequency is incorrect 4. The cover is dirty or capped by snow, frost and ice 5. TX is faulty or OFF	1. Adjust optical axis 2. Check objects between TX and RX 3. Ensure the frequency of TX and RX is the same 4. Clean cover or user heater 5. Check the voltage or wiring of the TX
False alarm	1. Bad wiring and fluctuant power voltage 2. Randomly blocked, like birds, paper or leaves 3. The beams base is unstable 4. Out of alignment	1. Check power, current and wiring 2. Change installation location 3. Strengthen installation base 4. Re-align

11.Specifications

Detection distance	Outdoor	50m	100m	150m	200m	250m
	Indoor	150m	300m	450m	600m	750m
Detection method		3 options (interruption of all 4 beams or upper 2 beams or below 2 beams)				
Interruption time		50ms,100ms,300ms,700ms(adjustable)				
Frequencies		4 different frequencies (selectable)				
Power and voltage		12V-24V DC/AC				
Current consumption		70mA max	80mA max	90mA max	100mA max	110mA max
Alarm cycle		≥1.5s				
Alarm output		1C. relay output (AC/DC30V, 1.0A max)				
Tamper		NC. works when cover is removed				
IP rating		IP65				
Operating temperature		-25℃～55℃				
Humidity		95% max				
Correction angle		Horizontal 180°(±90°), Vertical 20°(±10°)				
Install location		Indoor/Outdoor ,Wall/Pole				
Weight		3000g				
Attachment	U bracket	4pcs, 70.4*37.5*21.5mm, δ=1.5mm, stainless steel				
	Pole mounting srew	8pcs , PM4*30mm				
	Wall mounting screw	8pcs , PM4*25mm				
	Expansion pipe	8pcs, Φ7*27mm, green				
	Installation paper	2pcs, W85*H220mm				
Heaters (additional purchase)	Voltage	12V-24V DC/AC				
	Current	200mA max				
	Temperature	+60℃				
	Working condition	Auto Heating when it's ≤5℃ and stop heating when it's≥7℃				

Note: When environment temperature lower than -20℃, please use heaters to ensure normal working. Heater is non-polarized.

12.Dimensions

100mm

105mm

395mm

60mm

186.4mm

Mounting Hole