

**ENGLISH** **INTELLIGENT WIRELESS OUTDOOR PIR DETECTOR**  
**Installation instructions**

**1.General Introduction On Outdoor Application**

This detector is remarkable in function, but the following notices can make it more stable if installer can pay attention to them:  
**SUNSHINE**  
 Direct or reflective sunlight is no good for detector operation, try to avoid them during installation. Our outdoor PIR adopts double-layered screen light sensing system, which is very effective for screening of interfering light.

**WEEDS**  
 High weeds and shrubbery in detection range may wave in wind and cause false alarm, especially for those detectors operating in horizontal fan area, so keep cutting on weeds and shrubbery.

**RAIN**  
 Sudden rainstorm can cool the hot pitch road or surface of other roads quickly. And all detectors can detect rain in the sky, but detector with down view window can even detect water on ground, which will bring much more interference to detectors outdoor than that mounted on wall, so everything will lower its temperature similar to water, human body or cars after pouring from rain can offer very little temperature gap for detection, so sensitivity will be lowered a lot.

**INSECTS**  
 Insects will trigger false alarm when they climb into detector or stay on lens, while those staying away from detectors can't trigger alarm. If there is interference from insects, please re-install detector or use insecticide. And please adopt strictly sealed components on those drilled holes or glass glue around detector.

**CAR** Moving car in detection range may trigger false alarm to detector.

**INSUFFICIENT TEMPERATURE DIFFERENCE**  
 Detector is sensitive to change from temperature difference in detection area, if target temperature is very close to previous environment temperature, there will be no temperature change, detector sensitivity will be lowered and will not be triggered sometimes when there is intrusion.

**DIRT ON LENS**  
 Lens becomes easily dirty when used outdoor, so please check the lens from time to time in order to avoid alarm miss caused by low sensitivity from dirty lens.

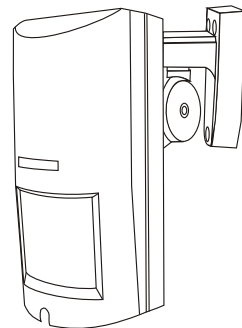
**UNSTABLE INSTALLATION BASE**  
 Detector will trigger false alarm easily if installation base can be interfered by vibration, this is the reason why some detectors installed near to street can cause false alarm easily.

**2.Introduction on Products**

This is a superior performance of wireless transmission, outdoor, high-performance passive infrared detector (PIR), using standard lithium manganese battery power supply, low power consumption, outdoor anti-interference ability is strong, can avoid outdoor sunlight, ultraviolet and radio frequency, car headlights and other interference, waterproof structure design of IP65: Waterproof, dustproof, insectproof, and windproof effects are significantly matched with advanced detection technologies: direct calculation and analysis technology from intelligent high-speed microchips to intrusive infrared signals, bipolar detection technology, automatic temperature compensation technology, direct regulation of digital signal sensitivity technology, from multiple infrared channel shielding to mixed light filtering technology, and so on. Its special analysis and calculation after collecting data on various movement tracks of pets can effectively avoid the interference false alarms caused by small animals of about 15kg, and it is also excellent in preventing thermal airflow, swaying branches, etc., and has a 4-level sensitivity adjustment to adapt to various outdoor installation occasions. Built-in high-performance lithium manganese battery can last at least 1000 days. In short, this detector has a variety of advanced technology and good stability, can give you the best outdoor safety protection.

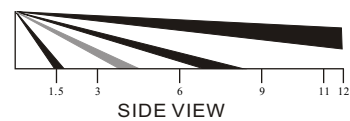
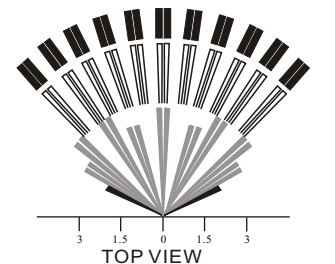
**3.Main Function**

- Super mini power-consumption solution
- High-quality large-capacity lithium manganese battery
- 2 grade sensitivities for option
- 2 grade pulses for option
- Digital pet immunity up to 15kg
- Bi-directional temperature compensation
- EDS/electric shock proof/mobile interference proof
- Anti white light
- Low voltage alarm
- Fully sealed optical parts
- Multi-direction bracket fit for corner/wall/ceiling mount



**4.Technical Parameter**

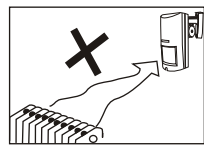
Power	: 3.0V CR123A Lithium battery
Current	: 15uA (stand by) 18mA (alarm)
Mount height	: 1.8m-2.4m
Detection range	: 12m x 12m 108° (wide lens)
Temperature compensation	: digital
Sensitivity	: 4 grade for option
Anti EMI	: 0.1-1000MHz/30V/m
Anti white light	: >10000 Lux
Anti RFI	: 50000V
Alarm output	: Ev1527
Alarm time	: 2s
Alarm interval	: 4 min (USE mode)
Wireless distance	: ≥200m (open space)
Frequencies	: 315/433MHz
Operation temperature	: -25°C/+55°C
Operation humidity	: 95% RH
Detection speed	: 0.2-3.5 m/s
Fire proof	: ABS plastic
Pet immunity	: 15kg
Size	: 142mm x 75mm x 55mm



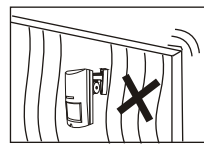
**5. Installation guide**

Select most suitable installation point fit for PIR detection, put detector onto proper position, keep away from door, window, running machine or heat source.

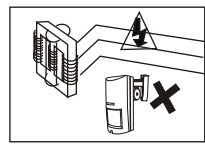
Note the following scenarios



Don't face detector to cold/heat source



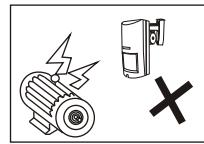
Installation base should be stable



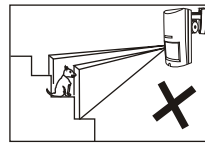
Keep away from high-pressure cable



Attention to car interference



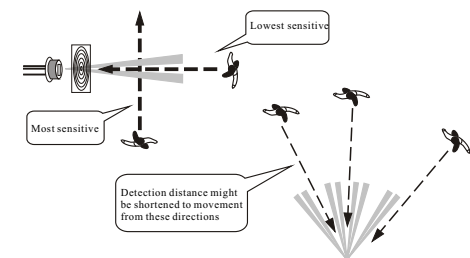
Keep away from strong EMI interference



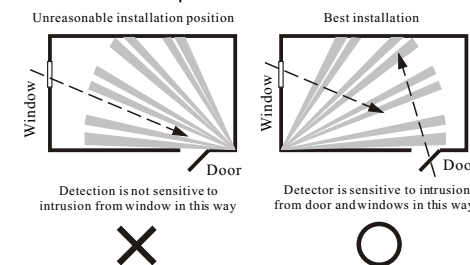
Poor anti-pet effect

**On installation angle**

Detection is with mechanical difference to intrusion angles



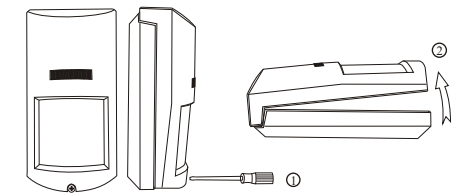
**On installation position**



**6.Installation & Bracket**

In order to optimize the signal coverage, the detector should be mounted at 2.1 m height and vertically adjusted to zero point. Make sure there are no interference sources working near the detector and that there is a wide field of view in front of the detector. Unscrew, remove the front cover, and pull out the circuit board. Drill through the mounting blind hole, make a mark on the wall, drill a 40mm deep hole with a 6mm diameter drill bit, then punch the rubber plug into the hole, let the screw into the 5-6 mm, then thread the wire through the cable hole, and fix the bottom cover to the wall, finally tighten the screw.

**Open the process**

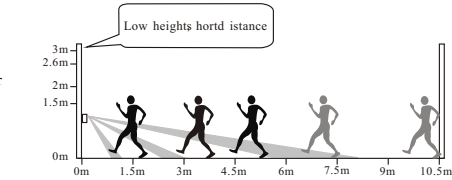
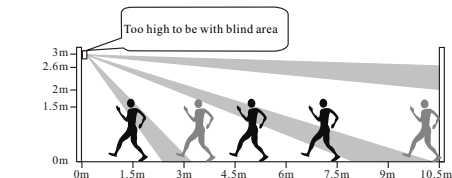
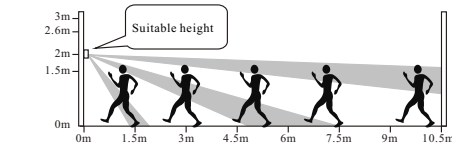


**Close the process**

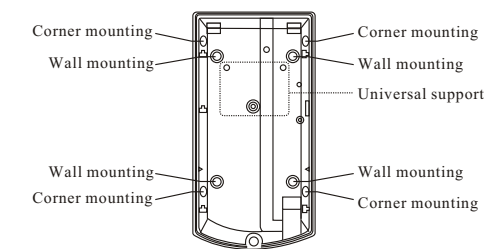


**On installation height**

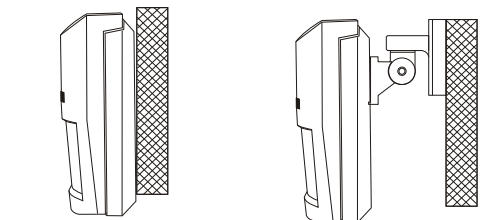
Recommended installation height is 1.8-2.4m



**Various installation blind holes**

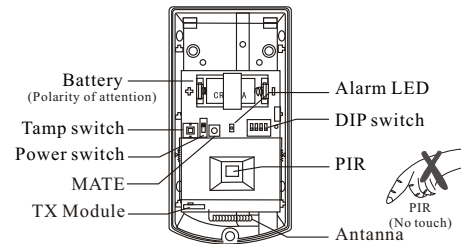


**Wall and universal bracket installation**

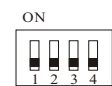


## 7. Walking Test & Setting

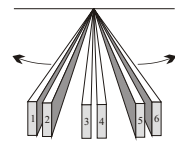
### Internal parts



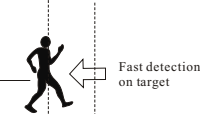
### Setting



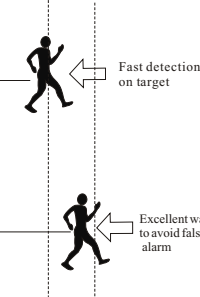
DIP 1 is the alarm LED control switch  
 DIP 2 is sensitivity control switch  
 DIP 3 is pulse control switch  
 DIP 4 is alarm mode control switch



When DIP 3 is set to OFF, detector is set to high sensitivity, alarm will be triggered when 2 pulses are detected



When DIP 3 is set to ON, detector is set to low sensitivity, alarm will be triggered when more than 3 pulses are detected.



### Low voltage warning

If the product battery voltage is lower than 2.4V, the system will issue a "low voltage code" prompt, at this time, it is necessary to replace the battery, please pay attention to the battery model gauge, the battery used by the detector is: CR123A 3V non-rechargeable battery, it is recommended to use the battery brand provided by the company or recommended to ensure the stability and durability of the product. 3 hours.

When DIP 1 is placed ON, the detector alarm LED will be turned on. At this time, the installation walking test can be carried out. After the test is completed, it is suggested to turn off the LED to save more power.

When DIP 2 is placed ON, the detector is in a state of high sensitivity, and when it is placed OFF, the detector is in a state of low sensitivity, which is convenient for stable operation under different environments.

When DIP 3 is ON, the probe is in a 3-pulse setting, and when OFF, the probe is in a 2-pulse setting.

Signal process statement: this detector adopts direct analysis technology on digital signal, microchip will make analysis on frequency, range, polarity etc of detected signals and make comparison with frequent pets data in data base, after that, it will draw a real intrusion analysis and judgment. Here, pulse set is a general index for reference, it doesn't stand exact quantity of pulse during digital signal process.

When DIP 4 is set to USE mode, detector can be triggered for 4 minutes interval time for the purpose of battery energy save, this is recommended mode.

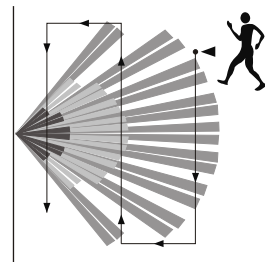
When DIP 4 is set to TEST mode, detector can be triggered any time.

### Walking test

Set detector to TEST mode and turn on LED, do well the front cover and wait for LED OFF. Make horizontal movement in detection area and watch the PIR detection status on LED (when alarm is triggered LED will flash for 1 time continuously). This is to confirm that there is no blind angle for PIR in the protection spot. When intruder makes horizontal movement towards detector, sensitivity is the highest!

When detector is installed in different environments, please adjust PIR sensitivity and detection pulse properly. There are 2 grades for sensitivity: high and low. When pulse is set to 2, detector is with high sensitivity; when 3 pulse is set, detector is in low sensitivity. Normal setting is 2 pulse.

### TEST PATH



### LED display

Warm up	Flash 40 times
Alarm	Light for 2 seconds
Tamper	Flash 3 times quickly
Low voltage	Flash 3 times slow

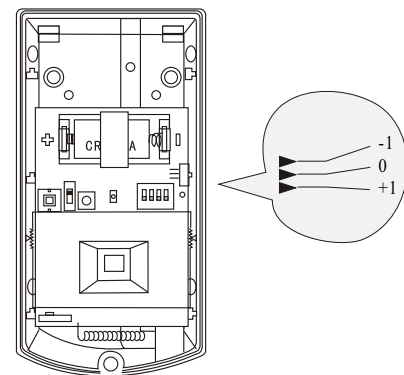
## 8. Vertical adjustment

Detector can get its best detection by setting of PCB vertical height, strongly suggest installer should make optimum setting to PCB vertical height according to actual environment.

Mark-1: when PCB is set to this position, detector is with best pet immunity.

Mark 0: when PCB is set to this position, detector is at most standard status.

Mark 1: when PCB is set to this position, detector can avoid ambitious crawl intrusion; meanwhile, pet immunity function will be lowered.



## 9. Encoded information type

### Coding format

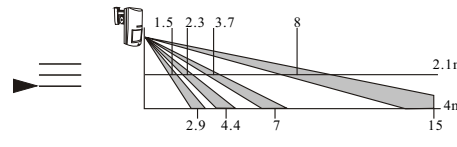
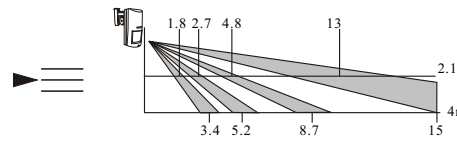
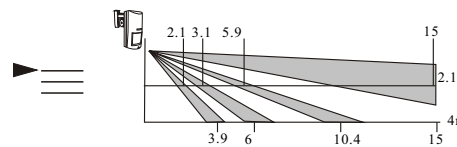
The wireless coding format of this product is as follows:

synchronous code	16Bit ID	D1	D2	D3	D4
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Definition: 1 LCK=8 pcs OSC CLOCK

### Effect chart on wide angle lens adjustment



Note: if multi-directional bracket is used, detection range will be different from description above.

### Transmit mode

3 group of data to be sent in 2 seconds in a variable area.

### Coding specification

Low voltage: D (1101)

Tamper: 7 (0111)

Alarm: B (1011)

Self-check report: 6 (0110)

### Rule

Low voltage detection is 2.4V, one scan per minute.

The highest level of tamper switch, alarm priority; Passive infrared intrusion ranked second, and tamper switch was not detected within 10 minutes of power-on.

### How can wireless detectors be connected to wired control panel?

It is recommended to power up before installation, so that the alarm host can "learn" the identity ID of the detector: turn on the power switch, after the self-test is completed, operate the relevant Settings of the control panel, gently shake in front of the detector, let the detector alarm, you can send the identity ID to the control panel.

## 10. PET immunity

Pet immunity is a high index for judgment of PIR detector function, we adopt 2 methods on pet immunity process at the same time:

- Physical method: special process of Fresnel lens detection area to lower false alarm rate caused by small animals
- Software analysis method: analysis on technical data on detector signal and make comparison with data base in the microchip in detector, then draw a conclusion on moving object to verify it is human being or pets.

From above we can know that function of pet immunity is relevant, this relativity includes 2 parts: firstly, pet immunity is relevant, but its false alarm rate is greatly lowered comparing detectors without pet immunity function, at the same time, there is limitation on pets' quantity and size. Secondly, installation is very important to pet immunity, it is with some requirements, not a random installation can reach a good result, so please read details in the manual before installation.



Note: we can omit those animals below 1m or 15kg on ground, but as pets approaching detector, its moving frequency will change, and pet immune function will be weakened, so a reasonable position is strongly suggested to be selected to avoid pets' approaching.



Note: when pet immunity function is required while multi-directional bracket is used, detector should be vertical to wall, no leaning. And bracket adjustment is allowed in horizontal direction, detector should be installed vertically to ground!



## 11. Common trouble and solutions

Trouble	Possible reasons	Solution
Power LED doesn't light	1. Battery low voltage (below 2.4V) 2. Poor contact between battery clip and battery 3. Reversed battery installation 4. Don't switch on LED control 5. May in USE mode	1. Check battery voltage and change new battery 2. Re-install battery or polish contact 3. Make correct installation 4. Turn on LED during test 5. Select TEST mode
Detection distance less than 12m	1. Improper installation height 2. Improper installation angle 3. PCB not in best position	1. Re-adjust installation height (1.8-2.4m) 2. Adjust installation angle 3. Adjust PCB unit vertical position
Short battery life	1. Poor battery quality 2. Detector not in USE mode 3. Alarm LED not turn off 4. Battery clips rust, resulting in poor contact	1. Change high quality battery (Use factory battery or brand-named battery) 2. Set jumper to USE mode 3. Turn off alarm LED to save energy 4. Clean the battery clip with a solvent such as anhydrous alcohol
Not compatible with control panel	1. Different protocol 2. Improper resistance 3. Wrong data set	1. Select proper codes and protocol 2. Select proper resistance 3. Select proper data set
Short wireless distance	Control panel can not receive alarm signal from detector after alarm is triggered.	1. Change detector position 2. Pull out antenna on control panel to longest position 3. Select high sensitivity control panel 4. Add a repeater 5. Environment is not suitable for wireless control panel installation
False alarm	1. Periodical alarm, 1 alarm each 60 minutes 2. Tamper switch alarm 3. Strong interference nearby 4. Pets' height and weight more than detection limitation 5. Sun sport activity period 6. Operation temperature over limitation 7. Water goes into detector 8. Strong environment interference	1. Low battery voltage, change it 2. Reset tamper switch 3. Keep detector away from strong interference 4. Pay attention to big animal's intrusion 5. No need to handle, it will resume after sunspot passes 6. Operation in recommended environment 7. Pay attention to water proof, add O shape water proof rubbering 8. Set sensitivity to 3P